

Table S1. Amino acid sequences of the 13 *Porphyromonas gingivalis* proteins used.

UniProt: B2RHG1 Protein: Minor fimbrium subunit Mfa1 Amino acids: 563 Organism: <i>Porphyromonas gingivalis</i> (strain ATCC 33277 / DSM 20709 / CIP 103683 / JCM 12257 / NCTC 11834 / 2561) MKLNKMFVLGALLSLGFASCSKEGNGPDPDAAKSYSMTLSMPMGSSARAGDGQDQANPD YHYVGEWAGKDKIEKVSIIYMPVQGGPGLVESAEEDLDFGTYYENPTIDPATHNAILKPKKG IKVNSAVGKTVKVYVVLNDIAGKAKALLANVNAADFDAKFKEIIELSTQAQALGTVADGP NPATAAGKIAKKNGTDETIMMTCLOPSDALTIEAAVSEANAIAIGIKNQAKVTVERSAR AMVSTKAQSYEIKATTQIGEIAAGSVLATITDIRWVVAQGERRQYLSKKRGTVPENTWVT PGSGFVPTSSTFHTNATEYYDYAGLWEDHNTNEAVISGTQVPTLADYQLQDVTGELANAL SGKFLLPNTHKSGANAASSDYKRGNTAYVLVRAKFTPKKEAFIDRGKTYSDNTAVPEYVA GEDFFVGENGQFYVSMKSVTDPKVGGVAGMKAHKYVKGKVLYYAWLNPSTTSPDSWWNSP VVRNNIYHIHIKSIKKLGFNWNPLVPDPSPNPNPNPNPNPNPNPNPNPNPNPNPNPNPNPN QDTFMSVEVTVLPWKVHSYEVDL
UniProt: B2RHG2 Protein: Minor fimbrium anchoring subunit Mfa2 Amino acids: 324 Organism: <i>Porphyromonas gingivalis</i> (strain ATCC 33277 / DSM 20709 / CIP 103683 / JCM 12257 / NCTC 11834 / 2561) MNKRKHMDIRRLIIISLPAIMALWGGGLASCDKMIYDNYDDCPRGVYVNFYSQTECAENPSY PAEVARLNVYAFDKDGILRSANVFEDVQLSAAKEWLIPLKDGLYTIFAWGNIDDHYNIG EIKIGETTKQQVLMRLKQDGKWATNIDGTTLWYATSPVVELKNMEDGADQYIHTANLRE YTNRVTVSVDSLPHPENYEIKLASSNGSYRFDGTVAKADSTYYPGETKVVG DSTCRAFTT TLKLESGHENTLSVTHKPTGREIFRTDLVGAILSSQYAQNINLRCINDFDIRLVAHHCNC PDDTYVVVQIWIWGLIHSYEIEL
UniProt: B2RHG3 Protein: Minor fimbrium tip subunit Mfa3 Amino acids: 446 Organism: <i>Porphyromonas gingivalis</i> (strain ATCC 33277 / DSM 20709 / CIP 103683 / JCM 12257 / NCTC 11834 / 2561) MMQLKKRYFALILLFLWSGCDRGVDPQPDPLQPDVYLLVNARAHTNGEESINMDAEDF EDRVHSLAMLVFDSENTGEKVAEHFSSSIGSGTSTYVFTVKLKPQRDFFVANI PNMQTA MASIVNKSDMNHFMQVFRDLDP IYHYNATNNNGFPMSRMYSNQTVTIGGTITQPLPKPD GENNVKLQRVVAKLVDNIVEGVENLQKIELCNANVHYRLVPNQSEPIQFYGPVELRRVGA TNQWLGYMPEAIVESTKWWGNTGNAENKPIFFRLTTRGGLVYDVPIITHEGAIPGGQYL PFAKGLLADKPSYTVYRNRHYIYRIKTLPKIEVKYSICDWNIVTNDTYMGYGYNVGVDE QGNVTITNTMQNCDPHVRLVAKNGAYFGSQPTDTSVEFTELANGASQTFKVNKDAVAVG SAYLEVYYNPDLNATGVVPDKVFIKK
UniProt: B2RHG4 Protein: Minor fimbrium tip subunit Mfa4 Amino acids: 446 Organism: <i>Porphyromonas gingivalis</i> (strain ATCC 33277 / DSM 20709 / CIP 103683 / JCM 12257 / NCTC 11834 / 2561) MKKYLLYASLLTSVLLFSCSKNNPSEPVEDRSIEISIRVDDFTKTGETVRYERNQGSAAE RLITNLYLLLFQSGANPAKYIAGNTFSGGIWL PDDMKVKLDMTQSEAGERKVYVVANV DNAVK TALDAVANESDLQTVKRTTAMPWSTDIASPF LMSGNKTHDFLANRLLDNVPLVRA IAKVELNISLSEKFQIVPIIVNGSLSEFKFRYVNF DKETYVVKPTTKPDNLISSANGVWP QITDWTVWGASLNTSPAPDAGTGYTL DANGKVTALRIVTYLNERDSKGATVEVALPRVDD

GTLPPPEFGPELYRLPLDPKILRNHWYKYEVEI UniProt: B2RHG5 Protein: Minor fimbrium subunit Mfa5 Amino acids: 1228 Organism: Porphyromonas gingivalis (strain ATCC 33277 / DSM 20709 / CIP 103683 / JCM 12257 / NCTC 11834 / 2561) MMKRYTIILAVFLLFCTVFTFQIKARPYERFADVEKPWIKHSMDSKLV PANKGNLIQAE IVYQSVSEHSDLVISPVNEIRPANRFP SHRKSFFAENLRASPPVVPVAVDKYAVPVANPM DPENPNAWDVTLKITTKAVTVPDVVMVIDQSSSMGGQNIARLKSAIASGQRFVKKMLPK GMATEGVRIALVSYDHEPHRLSDFTKDTAFLCQKIRALTPIWGTHTQGGLKMARNIMATS TAVDKHIILMSDGLATEQYPVKNVTTADFIGETGNANDPIDLVIQGAINFPTNYVSNNPS TPLTPNYPHTSSKVGRRNLPESKFDYSNLSARITFDGVAGALVYEPRFPHPYYYFPCNA AINEAQFAKNSGYTIHTIGYDLGDFALANNSLKL TATDENHFFTATPANLAAAFDNIAQT INIGIQRGEVTDVFAPGFIVKNLTQSGDVTHLLNVSNGTVHYDVSTKKLTWTTGTILSSS EATITYRIYADLDYIQNNDIPVNTTSAIGPDLGGFDNTN EAKLTYTNSNGESNQQLIFPR PTVKLGYGVIKRHYVLVNKDGQPIQANGTVVSSLS EAHVLQSQDFFLPSGGGHIVPKWIK LDKTTEALQYYSVPPTNTVITTADGKRYRFVEVPGSTPNPGQIGISWKKPAGNAYFAYKL LNYWMGGTTDQQSEWDVTSNWTGAQVPLTGEDVEFATTENFGSPAVADLHVPTTNPKIIG NLINNSDKDLVVTNSQLTINGVVEDNPNVGTIVVKSSKDNPTGTL LFANPGYNQNVGG TVEFYNQGYDCADCGMYRRSWQYFGIPVNESGFPINDVGGNETV NQWVEPFNGDKWRPAP YAPDTKLQKFKGYQITNDVQAQPTGVYSFKGTLCVCDAFLNL TRTSGVNYSGANLIGNSY TGAIDIKQGIVFPPEVEQTVYLFNTGTRDQWRKLNGSTVSGFRAGQYLSVPKNTAGQDNL PDRIPSMHSFLVKMQNGASCTLQILYDKLLKN TTVNNGNGTQITWRSGNSGSANMPSLVM DVLGNESADRLWIFTDGGLSFGFDNGWDGRKLTEKGLS QLYAMSDIGNDKFQVAGVPELN NLLIGFDADKDGQYTLEFALSDHFAGGGVFLEDLSRGVTRRIVDGGSY SFDKRGD SGAR FRLSYDEEWVESAEVSVLVGTVGKRILITN NCEHACQANVYTTDGKLLIRLDVKPGSKSM TEPLIDGAYVVSLSQSPATSSNVRKVVVN
UniProt: B2RKU0 · CPG2_PORG3 Protein: Gingipain R2 Gene: rgpB Amino acids: 736 Organism: Porphyromonas gingivalis (strain ATCC 33277/DSM 20709/CIP 103683/JCM 12257/NCTC 11834/2561) MKKNFSRIVSIVAFSSLLGGMAFAQPAERGRNPQVRLLSAEQSMSKVQFRMDNLQFTDVQ TSKGVAQVPTFTTEGVNISEKGTPILPILSRSLAVSETRAMKVEVVSSKFIEKKDVLIAPS KGVISRAENPDQIPYVYGQSYNE DKFFPGEIATLSDPFILRDVRGQVVNFAPLQYNPVTK TLRIYTEIVVAVSETAEAGQNTISLVKNSTFTGFEDIYKSVFMNYEATRYTPVEEKENGR MIVIVAKKYEGDIKDFVDWKNQRGLRTEVKVAEDIASPVTANAIQQFVKQEYEKEGNDLT YVLLVGDHKDIPAKITPGIKSDQVYQIVGNDHYNEVFIGRFSCESKEDLKTQIDRTIHY ERNITTEDKWLQALCIASAEGPSADNGESDIQHENVIANLLTQYGYTKIIKCYDPGVT PKNIIDAFNGGISLVNYTGHGSETAWGTSHFGTTHVKQLTNSNQLPFI FDVACVNGDFLF SMPCFAEALMRAQKDGKPTGTVAIIASTINQSWASPMRGQDEMNEILCEKHPNNIKRTFG GVTMNGMFAMVEKYKKDGEKMLDTWTVFGDPSLLVRTLVPTEMQVTAPANISASAQTFEV ACDYNGAIATLSDDGDMVGT AIVKDGAIIKLNESIADETNLTLTVVGYNKVTVIKDVKV EGTSIADVANDKPYTAVSGKTIITVESPAAGLTIFDMNGRRVATAKNRMVF EAQNGVYAV RIATEGKTYTEKIVIVK
UniProt: B2RLK2 · KGP_PORG3 Protein: Lys-gingipain Gene: kgp Amino acids: 1723 Organism: Porphyromonas gingivalis (strain ATCC 33277/DSM 20709/CIP 103683/JCM 12257/NCTC 11834/2561)

MRKLLLLIAASLLGVGLYAQSAKIKLDAPTTTRTTCTNNSFKQFDASFSFNEVELTKVETK
GGTFASVSI PGAFPTGEVGSPEVPAVRKLI AVPVGATPVVRVKS FTEQVYSLNQYGSEKL
MPHQPSMSKSDDEKVPFVYNAAAYARKGFVGQELTQVEMLGTMRGVRIAALTINPVQYD
VVANQLKVRNNIEIEVSFQGADEVATQRLYDASFSPYFETAYKQLFNRDVYTDHGDLYNT
PVRMLVVAGAKFKEALKPWL TWKAQKGFYLDVHYTDEAEVGT TNASIKAFIHKKYNDGLA
ASAAPVFLALVGD TDVISGEKGKKTKKVTDL YYSAVDGDYFPEMYTFRMSASSPEELTNI
IDKVLMEYKATMPDKSYLEKALLIAGADSYWNP KIGQQT IKYAVQYYYNQDHGYTDVYSY
PKAPYTG CYSHLNTGVGFANYTAHGETSWADPSLTATQVKALTNKDKYFLAIGNCCVTA
QFDYPQPCFGEVMTRVKEKGAYAYIGSSPNSYWGEDYYWSVGANAVFGVQPTFEGTSMGS
YDATFLEDSYNTVNSIMWAGNLAATHAGNIGNITHIGAHYYWEAYHVLGDGSVMPYRAMP
KTNTYTLPASLPQNQASYSIQASAGSYVAISKDGVLYGTGVANASGVATVNM TKQITENG
NYDVVITRSNYL PVIKQIQAGEPSPYQPVSNLTATTQGGQKVT LKWDAPS AKKAEASREVK
RIGDGLFVTIEPANDVRANEAKVVLADNVWGDNTGYQFLLDADHNTFGSVI PATGPLFT
GTASSNLYSANFEYLI PANADPVVTTQNI IVTGQGEVVI PGGVYDYCITNPEPASGKMWI
AGDGGNQPARYDDFTFEAGKKYTF TMRRAGMGDGT DMEVEDDSPASYTYTVYRDGT KIQE
GLTATTFEEDGVAAGNHEYCVEVKYTAGVSPKVCKDVTVEGSNEFAPVQNL TGS AVGQKV
TLKWDAPNGT PNP NPNPNPGTTT LSESFENGIPASWKTIDADGDGHGWKPGNAPGIAGYN
SNGCVYSESFGLGGIGVLT PDNYLITPALDLPNGGKLT FWVCAQDANYASEHYAVYASST
GNDASNFTNALLEETITAKGVRSP EAIRGRIQGTWRQKTVDLPAGTKYVAFRHFQSTDMF
YIDLDEVEIKANGKRADFTET FESSTHGEAPAEWTTIDADGDGQDWLCLSSGQLDWLTAH
GGTNVVASFSWNGMALNPDNYLISKDVTGATKV KYYYAVNDGFGPDHYAVMISKTGTNAG
DFTVVFEETPNGINKGARFGLSTEANGAKPQSVWIERTVDLPAGTKYVAFRHYNCSDLN
YILLDDIQFTMGGSPTPTDYTYTVYRDGT KIKEGLTETT FEEDGVATGNHEYCVEVKYTA
GVSPKVCVNVTINPTQFNPVKNLKAQPDGGDVVLKWEAPSGKRGELLNEDFEGDAIPTGW
TALDADGDGNNWDITLNEFTRGERHVL SPLRASNVAISYSSLLQGQEYLPLTPNNFLITP
KVEGAKKITYKVGSPGLPQWSHDHYALCISKSGTAAADFEVIFEETMTYTQGGANLTREK
DLPAGTKYVAFRHYNC TDVLGIMIDDVITGEGEGPSYTYTVYRDGT KIQEGLTETT YRD
AGMSAQ SHEYCVEVKYAAAGVSPKVCVDYIPDGVADVTAQKP YTLTVVGKTTITVTCQGEAM
IYDMNGRRLAAGRNTVVYTAQGGYYAVMVVDGKSYVEKLAIK

UniProt: B2RM93 · CPG1_PORG3

Protein: Gingipain R1

Gene: rgp

Amino acids: 1703

Organism: Porphyromonas gingivalis

(strain ATCC 33277/DSM 20709/CIP 103683/JCM 12257/NCTC 11834/2561)

MNKFVSIALCSSLLGGMAFAQQTELGRNPVRLLESTQQSVTKVQFRMDNLKFTEVQTPK
GMAQVPTYTEGVNLSEKGMPTLPILSRSLAVSDTREMKVEVVSSKFIEKKNVLIAPSKGM
IMRNEDPKKIPYVYGKSYSQNKFFGEIATLDDPFILRDVRGQVVNFAPLQYNPVTKTLR
IYTEITVAVSETSEQGKNILNKKGTFAGFEDTYKRMFMNYEPGRYTPVEEKQNGRMIVIV
AKKYEGDIKDFVDWKNQRGLRTEVKVAEDIASPV TANAIQQFVKQEYEKEGNDLTYVLLV
GDHKDIPAKITPGIKSDQVYGQIVGNDHYNEVFIGRFSCESKEDLKTQIDRTIHYERNIT
TEDKWLQALCIAAEGGPSADNGESDIQHENVIANLLTQYGYTKIIKCYDPGVTPKNII
DAFNNGGISLVNYTGHGSETAWGTSHFGTTHVKQLTNSNQLPFI FDVACVNGDFLFSMPCF
AEALMRAQKD GKPTGTVAIIASTINQSWASPMRGQDEMNEILCEKHPNNIKRTFGGVTMN
GMFAMVEKYKKDGEKMLDTWTVFGDPSLLVRTLVP TKMQVTAPAQINLTDASVNVSCDYN
GAIATISANGKMFGSAVVENG TATINLTGLTNESTLTLTVVGYNKETVIKTINTNGEPNP
YQPVSNLTATTQGGQKVT LKWDAPSTKT NATNTARSVDGIRELVLLSVSDAPELLRSGQA
EIVLEAHDVWNDGSGYQILLDADHDQYQGVIPSDHTLWPNC SVPANLFAPFEYTPENA
DPSCSPTNMIMDGTASVNI PAGTYDFAIAAPQANAKIWIAGQGPTKEDDYVFEAGKKYHF
LMKKMGSGDGT ELTISEGGGSDYTYTVYRDGT KIKEGLTATTFEEDGVATGNHEYCVEVK
YTAGVSPKVCKDVTVEGSNEFAPVQNL TGS AVGQKVTLKWDAPNGT PNP NPNPNPNPNPG
TTT LSESFENGIPASWKTIDADGDGHGWKPGNAPGIAGYNSNGCVYSESFGLGGIGVLT
PDNYLITPALDLPNGGKLT FWVCAQDANYASEHYAVYASSTGNDASNFTNALLEETITAKG
VRSPEAIRGRIQGTWRQKTVDLPAGTKYVAFRHFQSTDMFYIDLDEVEIKANGKRADFT
ET FESSTHGEAPAEWTTIDADGDGQGWLCLSSGQLDWLTAHGGTNVVASFSWNGMALNPDN

YLISKDVTGATKVKYYYAVNDGFGPDHYAVMISKGTGTNAGDFTVVFEETPNGINKGGARF GLSTEANGAKPQSVWIERTVDLPAGTKYVAFRHYNCSDLNYILLDDIQFTMGGSPTPTDY TYTVYRDGTKIKEGLTETTTFEEDGVATGNHEYCVEVKYTAGVSPKECVNVTINPTQFNPV KNLKAQPDGGDVVLKWEAPSAKKTEGSREVKRIGDGLFVTIEPANDVRANEAKVVLAADN VWGDNTGYQFLLDADHNTFGSVIPATGPLFTGTASSNLYSANFEYLI PANADPVVTTQNI IVTGQGEVVIPIGGVYDYCITNPEPASGKMWIAGDGGNQPARYDDFTFEAGKKYFTMRRA GMGDGTDMEVEDDSPASYTYTVYRDGTKIKEGLTETTYRDAGMSAQSHHEYCVEVKYAAGV SPKVCVDYIPDGVADVTAQKPYYTLTVVGKTIITVTCQGEAMIYDMNGRRLAAGRNTVVYTA QGGYYAVMVVDGKSYVEKLAVK
UniProt: B2RH54 Protein: Major fimbrium subunit FimA Amino acids: 383 Organism: Porphyromonas gingivalis (strain ATCC 33277/DSM 20709/CIP 103683/JCM 12257/NCTC 11834/2561) MKKTKEFLLGLAALAMTACNKDNEAEPVTEGNATISVVLKTSNSNRAFGVGDDSKVAKL TVMVYNGEQQEAIKSAENATKVEDIKCSAGQRTLVMANTGAMELVGKTLAEVKALTTEL TAENQEAAGLIMTAEPKTIIVLKAGKNYIGYSGTGEGNHIENDPLKIKRVHARMAFTEIKV QMSAAYDNIYTFVPEKIYGLIAKKQSNLFGATLVNADANYLTGSLTTFNGAYTPANYANV PWLRSRNVAPAADAPQGGFYVLENDYSANGGTIHTPTILCVYGLQKNGADLAGADLAAAQA ANWVDAEGKTYYPVLVNFNSNNYTYDSNYTPKNKIERNHKYDIKLTITGPGTNNPENPIT ESAHLNVQCTVAEVLVVGQNTW
UniProt: A0PA81 Protein: Major fimbrium anchoring subunit FimB Amino acids: 303 Organism: Porphyromonas gingivalis (strain ATCC 33277/DSM 20709/CIP 103683/JCM 12257/NCTC 11834/2561) MNDAKKYIVSVLILLVAGMFGGCIKEDYSDCPRPFRRLTVRAWDADMQDITETGAVQRVVI FVFDETGRRIIDRLMMDAAQVAARKPIPLEYDGPPTVSFVAWANPDDHMLEETANVQNVKD LFFRLSSTDGIAQSPGDLFSGVLTCPIEYGSIEQGTQDQTDIYRRTAQVHIIIRGYQEWL EANGPRQLPDYADILLGETPDYTGELAEIGNAVQYRPDQGIQNGDFISPIIRVYPTLDT TPLHLKLYAYGQELLNISTGSDGVFPFIPVIGKMLNIYIDLGRANLNLVSVTPWDVVQQY AEY
UniProt: B2RH57 Protein: Major fimbrium anchoring subunit FimC Amino acids: 453 Organism: Porphyromonas gingivalis (strain ATCC 33277/DSM 20709/CIP 103683/JCM 12257/NCTC 11834/2561) MKMKYFHHPSGLLPRLLLLLLLLTMGAVACTKEDNPDQPTSDEVATVKMSLDDVEMRGDDL YSGEDLIKKVRIFVFREGLNGLWVLDKQKLFASGQSDQNPFTISAHAGPRQIYVIANEP DALTTKLDKILFKKELEDMQAPDVNEPIVRPFTMTGMATATLNPQGTVQANISLNRIAAK ITLDIKQVTPGSDVIKIKVQILRNAKNSRLLEGNTKPTGYWNWANACDLPLTNNGSAQS IIQASAPLYVYENIGSDSDSSGRATQLVVEALYNGIKTRYAYVNDKTTTANHHYSIRRN HHYKLDGTITKMGEFSSLLLLTTTLPWTVENLDYGFLVPYVAEINPHAVITQDNVVTFEN SLSFTVRIKGRDGRWKATLDNGLEFGFDGSAIDGAADGTTVYTIKVKALKPNGIGIQR RTNLFFTVDGKKVILDKNINPQPTDIKIIQQGL
UniProt: B2RH58 Protein: Major fimbrium anchoring subunit FimD Amino acids: 670 Organism: Porphyromonas gingivalis (strain ATCC 33277/DSM 20709/CIP 103683/JCM 12257/NCTC 11834/2561) MRTNRIILNIICPPILFLLVGFLFGCVREDIESDMNETSSLFLQVQYPYNQRSEEGGVAAYD

ENTIERLTLVFKNGTKVWQAEPVETSPSSNSYYPVPESMYGQFNGNNSFKIYLVANVN
 FSGSFEPNASETSFLKTLVPNSILLQNDGKPEDKFAMIGSVEKQINMATSEGKQLGSIEL
 KRVAAKLRLKKPVLNISDYELVGDPKAKFRNCMPKGFLSVEEKPEGVGYEAIIDYRPMTEA
 NSSVHFYSYNEWALNNEGRPEFVMMLKLKKTGTDDNTAKPYYYRIPVDGSDKKIRSNHL
 YDMAVTIEVLGSLNEEDPVTINGSLSVIEWTSHSDDQTLPDVQYLEVIPQETVMNMTTEI
 ELDYFSSHSLLPADVKATCTYVNSNGQQITDTYTGANVPTVTIDANTKKIKVRSILPIN
 NIPKDISFTIKNSIGFEKKIKIRQNPSQFIINTFGTKSSWQPEGNLAPNLNNKAIYQIVV
 LSPPADGNMIIIGFPPTKEVGFYKKSGSSYTLKHTDRITEQDEQTANMVSPSFELASQLGA
 TLVQDHWEEYTLNPLRLIYHSNQNNRYALMTCAFYWEERKKADGTIERLDDWRLPTRAET
 QLVDKLQREQAGVVRDIMTGRYYWSGLPDKAIKILLPTASGNATEQRAHVRCVRDVKNDR
 FVKSARLKK

UniProt: B2RH59

Protein: Major fimbrium anchoring subunit FimE

Amino acids: 550

Organism: Porphyromonas gingivalis

(strain ATCC 33277/DSM 20709/CIP 103683/JCM 12257/NCTC 11834/2561)

MKSKSIIAQLLYVLIAFMAVSCVADKSEPCPSGEPTRVSGSIVSLEHHGLRGASADKENS
 VERLELWVFDEEDGHFLERAVADLSGSTFTAKIIPSEVERRIHFIANYELADPSVWVGRSE
 REMLPSISVADDLETIRMWARISYPSIAPNQNLGQIQLLRNMAKFSLSVTPPAESKLYDA
 SYALYNSWNKGTLPFPDNTGSFPQGQITEPAGVVFANPTSEAAFKEADGAHFFYGFERD
 QSNIGTGAGITCLILKARYNLPNADYTYKLDVDTNKVRYNITRNHFYKMILKKAKAPG
 RPTLQEALDGAANNIFLSAEVQALPAFSDGSGMLTVDHTYMFVQGEPSGTFQATYIPQ
 GQNNPDYSKLTVSSTPTGQQAAVTSAQHEGNGKIKLTLAQQENLTKRSDVVIGVQGNPD
 LKRSVTVLVREKYQYVFFKANTSSAENNQVTTQISAGQGNELLISAKLPDVLNAALLPIT
 FKVYTEHFYPKTGGMILGIEGGKTLKYVLTTPQNKELQFRFKSNKVNSEAENIAVKMDY
 FHDQTIHVTN

Table S2. List of the 142 HLA-I alleles tested and their global population frequencies from [60]. No frequencies are given for alleles that were not listed in [60] or alleles with less than 100 total counts across 7 ethnic groups tabulated in [60].

	Allele	Frequency
1	A*01:01	0.1420434
2	A*02:01	0.2561806
3	A*02:02	0.0025429
4	A*02:05	0.0093419
5	A*02:06	0.0060540
6	A*02:17	0.0010912
7	A*02:30	0.0003317
8	A*02:35	0.0001498
9	A*02:63	
10	A*02:77	
11	A*03:01	0.1261722
12	A*03:02	0.0039213
13	A*03:81	
14	A*11:01	0.0649202
15	A*11:02	0.0005919
16	A*23:01	0.0223073
17	A*24:02	0.0952516
18	A*24:03	0.0025065
19	A*25:01	0.0226141
20	A*26:01	0.0356853
21	A*26:08	
22	A*26:12	
23	A*29:01	0.0043926
24	A*29:02	0.0230598
25	A*30:01	0.0169138
26	A*30:02	0.0089255
27	A*30:04	0.0019476
28	A*31:01	0.0262064
29	A*32:01	0.0340679
30	A*33:01	0.0079770
31	A*33:03	0.0144788
32	A*34:01	0.0008691
33	A*34:02	0.0017212
34	A*36:01	
35	A*66:01	0.0049325
36	A*68:01	0.0355314
37	A*68:02	0.0088797

38	A*68:37	
39	A*74:01	0.0021335
40	A*74:03	
41	A*80:01	0.0004814
42	B*07:02	0.1088286
43	B*07:04	
44	B*07:05	0.0063906
45	B*08:01	0.0902367
46	B*13:02	0.0309107
47	B*14:01	0.0061648
48	B*14:02	0.0217804
49	B*14:03	
50	B*15:01	0.0533171
51	B*15:03	0.0035948
52	B*15:07	0.0005219
53	B*15:09	0.0003246
54	B*15:10	0.0015439
55	B*15:16	0.0010177
56	B*15:17	0.0053718
57	B*15:18	0.0029931
58	B*15:24	0.0003696
59	B*15:35	
60	B*18:01	0.0483541
61	B*18:09	
62	B*27:02	0.0070200
63	B*27:04	0.0004331
64	B*27:05	0.0314788
65	B*27:07	0.0007742
66	B*27:08	
67	B*27:10	
68	B*35:01	0.0561974
69	B*35:02	0.0109552
70	B*35:03	0.0249959
71	B*35:08	0.0060448
72	B*35:17	0.0007770
73	B*37:01	0.0142203
74	B*38:01	0.0236538
75	B*39:01	0.0123498
76	B*39:02	0.0003056
77	B*39:05	0.0016944
78	B*39:06	0.0054766

79	B*39:24	0.0005590
80	B*40:01	0.0421982
81	B*40:02	0.0163530
82	B*41:01	0.0063099
83	B*41:02	0.0061710
84	B*42:02	0.0004342
85	B*44:02	0.0671464
86	B*44:03	0.0456403
87	B*44:04	
88	B*44:05	0.0043612
89	B*44:07	
90	B*44:27	0.0000988
91	B*45:01	0.0064433
92	B*47:01	0.0027520
93	B*48:01	0.0024382
94	B*48:07	
95	B*49:01	0.0159705
96	B*50:01	0.0126756
97	B*50:02	
98	B*51:01	0.0579240
99	B*51:02	0.0005856
100	B*51:07	0.0007956
101	B*51:09	0.0001985
102	B*52:01	0.0176919
103	B*53:01	0.0074187
104	B*54:01	0.0007954
105	B*55:01	0.0153349
106	B*56:01	0.0083627
107	B*57:01	0.0334256
108	B*57:02	0.0004749
109	B*57:03	0.0020554
110	B*58:01	0.0130484
111	B*58:02	0.0014468
112	B*59:01	0.0000932
113	B*81:01	0.0007164
114	C*01:02	0.0393062
115	C*02:02	0.0509950
116	C*02:10	0.0030786
117	C*03:02	0.0087157
118	C*03:03	0.0474210
119	C*03:04	0.0680016

120	C*04:01	0.1237428
121	C*05:01	0.0626422
122	C*06:02	0.0981660
123	C*07:01	0.1337234
124	C*07:02	0.1241498
125	C*07:04	0.0191215
126	C*07:19	
127	C*08:01	0.0057631
128	C*08:02	0.0277853
129	C*08:03	0.0008189
130	C*12:02	0.0170775
131	C*12:03	0.0614529
132	C*14:02	0.0154983
133	C*15:02	0.0287949
134	C*15:04	0.0007862
135	C*15:05	0.0060050
136	C*15:06	0.0003392
137	C*15:09	
138	C*16:01	0.0250865
139	C*16:02	0.0066289
140	C*16:04	0.0023253
141	C*17:01	0.0145088
142	C*18:01	0.0015203

Table S3. List of the 192 HLA-II alleles tested and their frequencies from [60]. No frequencies are given for alleles that were not listed in [60] or alleles with less than 100 total counts across 7 ethnic groups tabulated in [60].

	Allele	Frequency
1	DRB1*01:01	0.0791999
2	DRB1*01:02	0.0137332
3	DRB1*01:03	0.0052336
4	DRB1*01:11	
5	DRB1*01:18	
6	DRB1*01:20	
7	DRB1*01:24	
8	DRB1*01:29	
9	DRB1*03:01	0.0986367
10	DRB1*03:02	0.0025654
11	DRB1*03:04	0.0001363
12	DRB1*03:05	0.0000201
13	DRB1*03:11	
14	DRB1*03:13	0.0000101
15	DRB1*03:15	0.0000207
16	DRB1*03:41	
17	DRB1*04:01	0.0627851
18	DRB1*04:02	0.0105781
19	DRB1*04:03	0.0131197
20	DRB1*04:04	0.0265008
21	DRB1*04:05	0.0082306
22	DRB1*04:06	0.0013111
23	DRB1*04:07	0.0104301
24	DRB1*04:08	0.0041765
25	DRB1*04:10	0.0005170
26	DRB1*04:11	0.0013387
27	DRB1*04:17	0.0000203
28	DRB1*04:44	
29	DRB1*04:53	
30	DRB1*04:56	
31	DRB1*04:72	
32	DRB1*07:01	0.1275163
33	DRB1*08:01	0.0221880
34	DRB1*08:02	0.0055030
35	DRB1*08:03	0.0042461
36	DRB1*08:04	0.0040823
37	DRB1*08:24	

38	DRB1*08:30	
39	DRB1*08:36	
40	DRB1*09:01	0.0125542
41	DRB1*09:02	
42	DRB1*10:01	0.0141768
43	DRB1*11:01	0.0665342
44	DRB1*11:02	0.0039001
45	DRB1*11:03	0.0075843
46	DRB1*11:04	0.0354497
47	DRB1*11:06	0.0002511
48	DRB1*11:07	0.0000064
49	DRB1*11:08	0.0000854
50	DRB1*11:10	0.0000429
51	DRB1*11:11	0.0001350
52	DRB1*11:12	0.0001396
53	DRB1*11:13	0.0000606
54	DRB1*11:14	0.0000751
55	DRB1*11:19	0.0000472
56	DRB1*11:27	0.0000312
57	DRB1*11:28	0.0000412
58	DRB1*11:29	0.0000252
59	DRB1*11:37	
60	DRB1*11:42	
61	DRB1*11:46	
62	DRB1*11:49	
63	DRB1*11:54	
64	DRB1*11:58	
65	DRB1*11:62	
66	DRB1*11:65	
67	DRB1*11:74	
68	DRB1*11:84	
69	DRB1*12:01	0.0181849
70	DRB1*12:02	0.0051980
71	DRB1*12:03	0.0000103
72	DRB1*12:16	
73	DRB1*13:01	0.0625597
74	DRB1*13:02	0.0398006
75	DRB1*13:03	0.0135659
76	DRB1*13:05	0.0022087
77	DRB1*13:07	0.0000084
78	DRB1*13:11	0.0000230

79	DRB1*13:12	0.0001374
80	DRB1*13:14	0.0000207
81	DRB1*13:21	0.0000261
82	DRB1*13:23	
83	DRB1*13:26	
84	DRB1*13:33	
85	DRB1*13:50	
86	DRB1*13:61	
87	DRB1*13:66	
88	DRB1*13:96	
89	DRB1*13:97	
90	DRB1*14:01	0.0243358
91	DRB1*14:02	0.0017150
92	DRB1*14:03	0.0001515
93	DRB1*14:04	0.0063246
94	DRB1*14:05	0.0004835
95	DRB1*14:06	0.0016773
96	DRB1*14:07	0.0003914
97	DRB1*14:12	0.0000186
98	DRB1*14:23	
99	DRB1*14:27	
100	DRB1*14:32	
101	DRB1*14:38	
102	DRB1*14:44	
103	DRB1*14:54	0.0129432
104	DRB1*14:68	
105	DRB1*15:01	0.1158383
106	DRB1*15:02	0.0179234
107	DRB1*15:03	0.0044122
108	DRB1*15:06	0.0008682
109	DRB1*15:07	0.0000119
110	DRB1*15:15	
111	DRB1*15:37	
112	DRB1*16:01	0.0232281
113	DRB1*16:02	0.0046449
114	DRB1*16:04	
115	DRB1*16:05	0.0000481
116	DRB1*16:09	

Table S4. Allele promiscuity. Number and percentage of unique peptides to which an allele bound with predicted strong affinity ($IC_{50} < 50$ nM).

Index	Allele	N unique peptides	Percent
1	DRB1*01:18	410	6.46382
2	DRB1*01:01	341	5.37601
3	DRB1*01:20	323	5.09223
4	DRB1*10:01	242	3.81523
5	DRB1*11:42	198	3.12155
6	DRB1*11:14	142	2.23869
7	DRB1*13:02	142	2.23869
8	DRB1*13:23	142	2.23869
9	DRB1*13:97	142	2.23869
10	DRB1*01:29	140	2.20716
11	DRB1*11:13	138	2.17563
12	DRB1*01:24	124	1.95491
13	DRB1*11:04	124	1.95491
14	DRB1*11:46	124	1.95491
15	DRB1*11:58	124	1.95491
16	DRB1*13:11	124	1.95491
17	DRB1*11:02	123	1.93915
18	DRB1*11:65	123	1.93915
19	DRB1*13:01	123	1.93915
20	DRB1*07:01	117	1.84455
21	DRB1*01:11	106	1.67113
22	DRB1*11:03	105	1.65537
23	DPB1*33:01	99	1.56078
24	DPB1*71:01	99	1.56078
25	DRB1*14:32	98	1.54501
26	DRB1*03:11	97	1.52924
27	DRB1*13:96	90	1.41889
28	DRB1*04:01	85	1.34006
29	DRB1*04:08	63	0.99322
30	DRB1*01:02	56	0.88286
31	DRB1*04:04	55	0.86710
32	DRB1*09:01	53	0.83557
33	DRB1*08:04	51	0.80404
34	DRB1*14:06	50	0.78827
35	DRB1*11:01	46	0.72521
36	DRB1*11:10	46	0.72521
37	DRB1*11:12	46	0.72521

38	DRB1*11:28	46	0.72521
39	DRB1*11:29	46	0.72521
40	DRB1*11:49	46	0.72521
41	DRB1*11:62	46	0.72521
42	DRB1*11:74	46	0.72521
43	DRB1*13:05	46	0.72521
44	DRB1*13:14	46	0.72521
45	DRB1*13:50	46	0.72521
46	DRB1*16:02	45	0.70944
47	DRB1*15:01	44	0.69368
48	DRB1*15:06	44	0.69368
49	DRB1*11:08	39	0.61485
50	DRB1*13:21	39	0.61485
51	DRB1*03:01	36	0.56755
52	DRB1*03:04	36	0.56755
53	DRB1*03:13	36	0.56755
54	DRB1*04:72	35	0.55179
55	DPB1*02:02	34	0.53602
56	DPB1*47:01	34	0.53602
57	DRB1*04:05	32	0.50449
58	DRB1*12:03	31	0.48873
59	DPB1*02:01	29	0.45720
60	DPB1*46:01	29	0.45720
61	DPB1*72:01	29	0.45720
62	DPB1*81:01	29	0.45720
63	DRB1*16:09	29	0.45720
64	DRB1*13:61	27	0.42567
65	DRB1*15:15	26	0.40990
66	DRB1*16:01	26	0.40990
67	DRB1*11:84	25	0.39414
68	DRB1*15:02	24	0.37837
69	DPB1*04:01	23	0.36260
70	DPB1*126:01	23	0.36260
71	DPB1*23:01	23	0.36260
72	DPB1*39:01	23	0.36260
73	DRB1*15:03	21	0.33107
74	DRB1*14:01	20	0.31531
75	DRB1*14:12	20	0.31531
76	DRB1*14:54	20	0.31531
77	DRB1*03:15	17	0.26801
78	DRB1*11:11	17	0.26801

79	DPB1*15:01	16	0.25225
80	DRB1*15:07	16	0.25225
81	DRB1*11:37	15	0.23648
82	DRB1*13:07	15	0.23648
83	DRB1*12:16	13	0.20495
84	DRB1*14:04	13	0.20495
85	DRB1*08:24	12	0.18918
86	DRB1*12:02	12	0.18918
87	DRB1*14:02	12	0.18918
88	DRB1*04:44	10	0.15765
89	DRB1*13:66	9	0.14189
90	DPB1*03:01	8	0.12612
91	DPB1*104:01	8	0.12612
92	DPB1*124:01	8	0.12612
93	DRB1*04:10	8	0.12612
94	DRB1*04:56	8	0.12612
95	DRB1*11:27	8	0.12612
96	DRB1*12:01	8	0.12612
97	DPB1*16:01	7	0.11036
98	DPB1*41:01	7	0.11036
99	DRB1*16:04	7	0.11036
100	DRB1*16:05	7	0.11036
101	DPB1*01:01	6	0.09459
102	DRB1*08:01	6	0.09459
103	DRB1*11:06	6	0.09459
104	DRB1*13:26	6	0.09459
105	DRB1*15:37	6	0.09459
106	DPB1*34:01	5	0.07883
107	DRB1*01:03	5	0.07883
108	DRB1*04:02	4	0.06306
109	DRB1*04:07	4	0.06306
110	DRB1*14:38	4	0.06306
111	DRB1*03:05	3	0.04730
112	DRB1*08:02	3	0.04730
113	DPB1*20:01	2	0.03153
114	DPB1*91:01	2	0.03153
115	DRB1*08:30	2	0.03153
116	DRB1*13:03	2	0.03153
117	DRB1*13:12	2	0.03153
118	DPB1*14:01	1	0.01577
119	DPB1*40:01	1	0.01577

120	DRB1*09:02	1	0.01577
121	DRB1*11:54	1	0.01577
	Total	6343	100%

Table S5. Peptide (15-mer) promiscuity. Number of hits (strong predicted binding affinity [$IC_{50} < 50$ nM]) per peptide shown.

Index	Peptide	DPB1 hits	DRB1 hits	Total hits
1	DPLKIKRVHARMAFT	0	51	51
2	PLKIKRVHARMAFTE	0	49	49
3	EKYQYVFFKANTSSA	14	34	48
4	LKIKRVHARMAFTEI	3	44	47
5	QIQLLRNMAKFSLSV	0	46	46
6	GQIQLLRNMAKFSLS	0	45	45
7	LGQIQLLRNMAKFSL	0	45	45
8	NDPLKIKRVHARMAF	0	45	45
9	KYQYVFFKANTSSAE	9	35	44
10	IQLLRNMAKFSLSVT	0	39	39
11	RPEFVMMLKLKKTGT	0	38	38
12	REKYQYVFFKANTSS	15	21	36
13	EGRPEFVMMLKLKKT	0	35	35
14	GRPEFVMMLKLKKTG	0	35	35
15	DHWEYYTLNPLRLIY	8	25	33
16	HWEYYTLNPLRLIYH	8	24	32
17	KVQILRNAKNSRLLE	0	32	32
18	NLGQIQLLRNMAKFS	0	32	32
19	PEFVMMLKLKKTGTD	0	32	32
20	RMAFTEIKVQMSAAY	0	32	32
21	TKVQILRNAKNSRLL	0	32	32
22	VREKYQYVFFKANTS	16	16	32
23	RNHFYKMILKKAKAP	0	31	31
24	TRNHFYKMILKKAKA	0	31	31
25	HFYKMILKKAKAPGR	0	30	30
26	SIELKRVAAKLRLKK	0	30	30
27	EFVMMLKLKKTGTDD	0	29	29
28	GSIELKRVAAKLRLK	0	28	28
29	KIYGLIAKKQSNLFG	0	28	28
30	KTLYKYVLTTPQNK	0	28	28
31	NHFYKMILKKAKAPG	0	28	28
32	IELKRVAAKLRLKKP	0	27	27
33	LGSIELKRVAAKLRL	0	27	27
34	SDVIKITKVQILRNA	0	27	27
35	AQSIIQASAPLYVYE	0	26	26
36	DVIKITKVQILRNAK	0	26	26
37	EKIYGLIAKKQSNLF	0	26	26

38	FYKMILKKAKAPGRP	0	26	26
39	KVELNISLSEKFQIV	7	19	26
40	NEGRPEFVMMMLKLKK	0	26	26
41	QSIIQASAPLYVYEN	0	26	26
42	ITRNHFYKMILKKAK	0	25	25
43	QDHWEYYTLNPLRLI	5	20	25
44	SAQSIIQASAPLYVY	0	25	25
45	WEYYTLNPLRLIYHS	2	23	25
46	ITKVQILRNAKNSRL	0	24	24
47	QANISLNRIA AKITL	0	24	24
48	QRTLVMANTGAMEL	0	24	24
49	VQILRNAKNSRLLEG	0	24	24
50	ELNISLSEKFQIVPI	12	11	23
51	GSDVIKITKVQILRN	0	23	23
52	YQYVFFKANTSSAEN	0	23	23
53	LNISLSEKFQIVPII	12	10	22
54	PEKIYGLIAKKQSNL	0	22	22
55	VKNDRFVKSARKLKK	0	22	22
56	EKKIKIRQNPSQFII	0	21	21
57	KIKRVHARMAFTEIK	3	18	21
58	KKIKIRQNPSQFIIN	0	21	21
59	PGSDVIKITKVQILR	0	21	21
60	TKKIKVRSILPINNI	0	21	21
61	VQANISLNRIA AKIT	0	21	21
62	ANISLNRIA AKITLD	0	20	20
63	IYGLIAKKQSNLFGA	0	20	20
64	KFQIVPIIVNGSLSE	0	20	20
65	KIKIRQNPSQFIINT	0	20	20
66	KIKVRSILPINNIPK	3	17	20
67	MAFTEIKVQMSAAYD	0	20	20
68	RTLVMANTGAMELV	0	20	20
69	YKMILKKAKAPGRPT	0	20	20
70	IDRLMMDAAQVAARK	0	19	19
71	QLLRNMAKFSLSVTP	0	19	19
72	SIIQASAPLYVYENI	0	19	19
73	TSFLKTLVPNSILLQ	0	19	19
74	TVQANISLNRIA AKI	0	19	19
75	VIKITKVQILRNAKN	0	19	19
76	ARMAFTEIKVQMSAA	0	18	18
77	EFKFRYVNFDKETVY	18	0	18
78	EKFQIVPIIVNGSLS	0	18	18

79	FKIYLVANVNFSGSF	0	18	18
80	FVMMLKLKKTGTDDN	0	18	18
81	GQRTLVMANTGAME	0	18	18
82	GTVQANISLNRIAAK	0	18	18
83	GVPFIPVIGKMLNIY	0	18	18
84	KITKVQILRNAKNSR	0	18	18
85	MAKFSLSVTPPAESK	0	18	18
86	SFKIYLVANVNFSGS	0	18	18
87	TAQVHIIIRGYQEWL	0	18	18
88	VELNISLSEKFQIVP	9	9	18
89	DCPRPFRLTVRAWDA	0	17	17
90	ETSFLKTLVPNSILL	0	17	17
91	EYYTLNPLRLIYHSN	2	15	17
92	FTEIKVQMSAAYDNI	0	17	17
93	GSAQSIIQASAPLYV	0	17	17
94	KIYLVANVNFSGSFE	0	17	17
95	NMAKFSLSVTPPAES	0	17	17
96	QYVFFKANTSSAENN	0	17	17
97	RKVYVVANVDNAVKT	0	17	17
98	RPFRLTVRAWDADMQ	0	17	17
99	RTAQVHIIIRGYQEW	0	17	17
100	VPEKIYGLIAKKQSN	0	17	17
101	VPFIPVIGKMLNIYI	0	17	17
102	AQVHIIIRGYQEWLE	0	16	16
103	DGVPFIPVIGKMLNI	0	16	16
104	ENDPLKIKRVHARMA	0	16	16
105	FKFRYVNFDKETYVV	16	0	16
106	KKIKVRSILPINNIP	0	16	16
107	LETIRMWARISYPSI	0	16	16
108	NISLSEKFQIVPIIV	12	4	16
109	SEFKFRYVNFDKETY	16	0	16
110	VLVREKYQYVFFKAN	16	0	16
111	AFTEIKVQMSAAYDN	0	15	15
112	AKFSLSVTPPAESKL	0	15	15
113	DKAIKILLPTASGNA	0	15	15
114	ETIRMWARISYPSIA	0	15	15
115	KAIKILLPTASGNAT	0	15	15
116	KDLFFRLSSTDGIAQ	0	15	15
117	KVRYNITRNHFYKMI	2	13	15
118	KVYVVANVDNAVKTA	0	15	15
119	LVREKYQYVFFKANT	15	0	15

120	MKKYLLYASLLTSVL	8	7	15
121	PDKAIKILLPTASGN	0	15	15
122	QNLGQIQLLRNMAKF	0	15	15
123	RIDRLMMDAAQVAAR	0	15	15
124	SFLKTLVPNSILLQN	0	15	15
125	ANRLLDNVPLVRAIA	0	14	14
126	ERKVYVVANVDNAVK	0	14	14
127	FLVPYVAEINPHAVI	0	14	14
128	KMLNIYIDLRGANLN	0	14	14
129	KTIVLKAGKNYIGYS	0	14	14
130	LNIIYIDLRGANLNVL	0	14	14
131	LSEFKFRYVNFDKET	14	0	14
132	LVPYVAEINPHAVIT	0	14	14
133	NSFKIYLVANVNFSG	0	14	14
134	PRPFRLTVRAWDADM	0	14	14
135	QFRFKSNKVNSAENI	0	14	14
136	QLGSIELKRVAAKLR	0	14	14
137	RAEIQLVDKLQREQA	0	14	14
138	SLSEFKFRYVNFDE	14	0	14
139	TEIKVQMSAAYDNIY	0	14	14
140	VERRIHFIANYELAD	0	14	14
141	VKDLFFRLSSTDGIA	0	14	14
142	AAERLITNLYLLLF	13	0	13
143	AERLITNLYLLLF	13	0	13
144	AGITCLILKARYNLP	0	13	13
145	CPRPFRLTVRAWDAD	0	13	13
146	DLETIRMWARISYPS	0	13	13
147	ELKRVAAKLRLKKPV	0	13	13
148	ERLITNLYLLLF	13	0	13
149	ERRIHFIANYELADP	0	13	13
150	EVERRIHFANYELA	0	13	13
151	FVPEKIYGLIAKKQS	0	13	13
152	GKMLNIYIDLRGANL	0	13	13
153	KFRYVNFDKETYVVK	13	0	13
154	KMKYFHHPGGLPRL	0	13	13
155	MLNIYIDLRGANLNV	0	13	13
156	NISLNRIAAKITLDI	0	13	13
157	NKVRYNITRNHFYKM	0	13	13
158	NVPLVRAIAKVELNI	3	10	13
159	PFIPVIGKMLNIYID	0	13	13
160	PKTIVLKAGKNYIGY	0	13	13

161	SDGVPFIPVIGKMLN	0	13	13
162	SEKFQIVPIIVNGSL	0	13	13
163	TISVVLKTSNSNRAF	0	13	13
164	TRAETQLVDKLOREQ	0	13	13
165	VAAKLRLKKPVLNIS	0	13	13
166	VPLVRAIAKVELNIS	3	10	13
167	YYTLNPLRLIYHSNQ	0	13	13
168	FLKTLVPNSILLQND	0	12	12
169	FQIVPIIVNGSLSEF	0	12	12
170	GITCLILKARYNLPN	0	12	12
171	GSAAERLITNLYLLL	12	0	12
172	ITCLILKARYNLPNA	0	12	12
173	MNETSSLFLQVQPYN	12	0	12
174	PDLKRSVTVLVREKY	0	12	12
175	PTRAETQLVDKLORE	0	12	12
176	RNMAKFSLSVTPPAE	0	12	12
177	RRIHFIANVELADPS	0	12	12
178	SAAERLITNLYLLLF	12	0	12
179	SETSLKTLVPNSIL	0	12	12
180	SVVLKTSNSNRAFGV	0	12	12
181	VRYNITRNHFYKMIL	2	10	12
182	VVTFENSLSFTVRIK	0	12	12
183	YGQFNGNNSFKIYLV	0	12	12
184	AKVELNISLSEKFQI	0	11	11
185	ANNIFLSAEVQALPA	2	9	11
186	DDLETIRMWARISYP	0	11	11
187	DLFFRLSSTDGIAQS	0	11	11
188	GFLVPYVAEINPHAV	0	11	11
189	IKITKVQILRNAKNS	0	11	11
190	IKNSIGFEKKIKIRQ	0	11	11
191	LKRVAACLRLKKPVL	0	11	11
192	MKMKYFHHPSGLLPR	0	11	11
193	NHHYSIRRNHHYKLD	0	11	11
194	NIFLSAEVQALPAFS	2	9	11
195	NNIFLSAEVQALPAF	2	9	11
196	NPDLKRSVTVLVREK	0	11	11
197	RVAACLRLKKPVLNI	0	11	11
198	RYNITRNHFYKMILK	2	9	11
199	SGMLTVDHTYMFVQ	0	11	11
200	TIRMWARISYPSIAP	0	11	11
201	VPYVAEINPHAVITQ	0	11	11

202	AAKLRLKKPVLNISD	0	10	10
203	AEIQLVDKLQREQAG	0	10	10
204	AGQRTLVMANTGAM	0	10	10
205	DMNETSSLFLQVQPY	10	0	10
206	EIQLVDKLQREQAGV	0	10	10
207	GEDLIKKVRIFVFRE	0	10	10
208	GSDGVFPFIPVIGKML	0	10	10
209	HHYSIRRNHHYKLDG	0	10	10
210	KRSVTVLVREKYQYV	2	8	10
211	KRVAAKLRLKKPVLN	0	10	10
212	LQFRFKSNKVNSAEN	0	10	10
213	MKYFHHPSGLLPRL	0	10	10
214	NTKKIKVRSILPINN	0	10	10
215	RTNLFFTVDGKKVIL	0	10	10
216	SVTVLVREKYQYVFF	7	3	10
217	TLYKYVLTTPQNKE	0	10	10
218	VQDHWEYYTLNPLRL	2	8	10
219	VTFENSLSFTVRIKG	0	10	10
220	YVFFKANTSSAENNQ	0	10	10
221	AANNIFLSAEVQALP	2	7	9
222	DLKRSVTVLVREKYQ	0	9	9
223	DNVPLVRAIAKVELN	0	9	9
224	EDLIKKVRIFVFREG	0	9	9
225	ELQFRFKSNKVNSAE	0	9	9
226	FRFKSNKVNSAENIA	0	9	9
227	GERKVYVVANVDNAV	0	9	9
228	GKTLYKYVLTTPQN	0	9	9
229	GNPDLKRSVTVLVRE	0	9	9
230	GSGMLTVDHTYMFV	0	9	9
231	HYSIRRNHHYKLDGT	0	9	9
232	IELDYFSSHSLPPA	2	7	9
233	IIQASAPLYVYENIG	0	9	9
234	IKVRSILPINNIPKD	0	9	9
235	ISVVLKTSNSNRAFG	0	9	9
236	KKYLLYASLLTSVLL	2	7	9
237	KMILKKAKAPGRPTL	0	9	9
238	KVRSILPINNIPKDI	0	9	9
239	LANRLLDNVPLVRAI	0	9	9
240	LFFRLSSTDGIAQSP	0	9	9
241	LYKYVLTTPQNKEL	0	9	9
242	NGIGIQRRTNLFFTV	2	7	9

243	NIYIDLRGANLNVLV	0	9	9
244	PAKYIAGNTFSGGI	0	9	9
245	QGNPDLKRSVTVLVR	0	9	9
246	SGEDLIKKVRIFVFR	0	9	9
247	TFENSLSFTVRIKGR	0	9	9
248	TNLFFTVDGKKVILD	0	9	9
249	TNRILNIICPPILFL	0	9	9
250	YIDLRGANLNVLVSV	2	7	9
251	YTIKVKALKPNGIGI	0	9	9
252	AKYIAGNTFSGGIW	0	8	8
253	AMELVGKTLAEVKAL	7	1	8
254	ANHHYSIRRNHHYKL	0	8	8
255	DFISPIIRVYPTLDT	0	8	8
256	DRLMMDAAQVAARKP	0	8	8
257	FEKKIKIRQNPSQFI	0	8	8
258	GAGITCLILKARYNL	0	8	8
259	GIGIQRRTNLFFTVD	2	6	8
260	GQFNGNNSFKIYLVA	0	8	8
261	ISLNRIAAKITLDIK	0	8	8
262	KFSLSVTPPAESKLY	0	8	8
263	KNSIGFEKKIKIRQN	0	8	8
264	KTKFFLLGLAALAMT	0	8	8
265	KTYYPVLVNFNSNNY	0	8	8
266	LRLIYHSNQQRNRYAL	0	8	8
267	LRNMAKFSLSVTPPA	0	8	8
268	LTLVFYKNGTKVWQA	0	8	8
269	LVRRAIAKVELNISLS	6	2	8
270	MYGQFNGNNSFKIYL	0	8	8
271	NIYTFVPEKIYGLIA	2	6	8
272	NLFFTVDGKKVILDK	0	8	8
273	NVKDLFFRLSSTDGI	0	8	8
274	PLVRAIAKVELNISL	5	3	8
275	PSFELASQLGATLVQ	0	8	8
276	RRIDRLMMDAAQVAA	0	8	8
277	RSVTVLVREKYQYVF	2	6	8
278	SMYGQFNGNNSFKIY	0	8	8
279	SPSFELASQLGATLV	0	8	8
280	THDFLANRLLDNVPL	8	0	8
281	TIKVKALKPNGIGIQ	0	8	8
282	TIVLKAGKNYIGYSG	0	8	8
283	TKFFLLGLAALAMTA	0	8	8

284	TLVVMANTGAMELVG	0	8	8
285	VVLKTSNSNRAFGVG	0	8	8
286	VYTIKVKALKPNGIG	0	8	8
287	YSIRRNHHYKLDGTI	0	8	8
288	YTGLAELIGNAVQYR	0	8	8
289	AAANNIFLSAEVQAL	2	5	7
290	AGLIMTAEPKTIVLK	0	7	7
291	AIKILLPTASGNATE	0	7	7
292	ENSLSFTVRIKGRDG	0	7	7
293	EPKTIVLKAGKNYIG	0	7	7
294	GAMELVGKTLAEVKA	2	5	7
295	GTTVYTIKVKALKPN	0	7	7
296	IKIRQNPSQFIINTF	0	7	7
297	IKVKALKPNGIGIQR	0	7	7
298	IYIDLRGANLNVLS	0	7	7
299	IYTFVPEKIYGLIAK	0	7	7
300	KFFLLGLAALAMTAC	0	7	7
301	KKTKFFLLGLAALAM	0	7	7
302	KPNGIGIQRRTNLFF	0	7	7
303	KQLGSIELKRVAACL	0	7	7
304	LPDKAIKILLPTASG	0	7	7
305	NRLLDNVPLVRAIAK	0	7	7
306	NSLSFTVRIKGRDGS	0	7	7
307	NVVTFENSLSFTVRI	0	7	7
308	PNGIGIQRRTNLFFT	0	7	7
309	PYVAEINPHAVITQD	0	7	7
310	QILRNAKNSRLLEGT	0	7	7
311	QIVPIIVNGSLSEFK	0	7	7
312	RLMMDAAQVAARKPI	0	7	7
313	RRTNLFFTVDGKKVI	0	7	7
314	RTNRILNIICPPILF	0	7	7
315	SFELASQLGATLVQD	0	7	7
316	SLSFTVRIKGRDGSR	0	7	7
317	TGLAELIGNAVQYRP	0	7	7
318	TPGSDVIKITKVQIL	0	7	7
319	TVLVREKYQYVFFKA	7	0	7
320	TYTGLAELIGNAVQY	0	7	7
321	TYYKLDFVDTNKVRY	0	7	7
322	VTVLVREKYQYVFFK	7	0	7
323	VYVVANVDNAVKTAL	0	7	7
324	YTYYKLDFVDTNKVR	0	7	7

325	YYKLDFVDTNKNVRYN	0	7	7
326	YYPVLVNFNSNNYTY	0	7	7
327	ADDLETIRMWARISY	0	6	6
328	AEPKTIVLKAGKNYI	0	6	6
329	ANTKKIKVRSILPIN	0	6	6
330	ATISVVLKTSNSNRA	0	6	6
331	DGTTVYTIKVKALKP	0	6	6
332	DLIKKVRI FVFREGL	0	6	6
333	ENLDYGFLVPYVAEI	0	6	6
334	ESDLQTVKR TTAMPW	0	6	6
335	FELASQLGATLVQDH	0	6	6
336	FENSLSFTVRIKGRD	0	6	6
337	GDFISPIIRVYPTLD	0	6	6
338	GGKTLYKYVLTTMPQ	0	6	6
339	GLIMTAEPKTIVLKA	0	6	6
340	IFLSAEVQALPAFSD	0	6	6
341	IPVIGKMLNIYIDLR	0	6	6
342	KELQFRFKSNKVNSA	0	6	6
343	KTLAEVKALTTELTA	0	6	6
344	KVKALKPNGIGIQRR	0	6	6
345	LDYGFLVPYVAEINP	0	6	6
346	LLLFDQSGANPAKYY	0	6	6
347	LLRNMAKFSLSVTPP	0	6	6
348	LVVMANTGAMELVGK	0	6	6
349	MKKTKFFLLGLAALA	0	6	6
350	NGDFISPIIRVYPTL	0	6	6
351	NLDYGFLVPYVAEIN	0	6	6
352	NQNLGQIQLLRNMAK	0	6	6
353	PVIGKMLNIYIDLRG	0	6	6
354	QFNGNNSFKIYLVAN	0	6	6
355	QRVVIFVFDETGRRRI	0	6	6
356	RQIYVIANEPDALTT	0	6	6
357	SDLQTVKR TTAMPWS	0	6	6
358	TGAMELVGKTLAEVK	0	6	6
359	TNKNVRYNITRNHFYK	0	6	6
360	TTVYTIKVKALKPNG	0	6	6
361	VIFVFDETGRRIDRL	0	6	6
362	VRSILPINNIPKDIS	0	6	6
363	VVIFVFDETGRRIDR	0	6	6
364	YGFLVPYVAEINPHA	0	6	6
365	YNITRNHFYKMILKK	2	4	6

366	AAGLIMTAEPKTIVL	0	5	5
367	ADGTTVYTIKVKALK	0	5	5
368	ANPAKYIAGNTFSG	0	5	5
369	APQGFYVLENDYSAN	0	5	5
370	ASETSLKTLVPNSI	0	5	5
371	DKKIRSNHLYDMAVT	0	5	5
372	DNIYTFVPEKIYGLI	2	3	5
373	DNVVTFENSLSFTVR	0	5	5
374	DPVTINGSLSVIEWT	0	5	5
375	DTYTGLAELIGNAVQ	0	5	5
376	DYELVGDPKAKFRNC	0	5	5
377	EDPVTINGSLSVIEW	0	5	5
378	EEDPVTINGSLSVIE	0	5	5
379	EGKTYYPVLVNFNSN	0	5	5
380	EGNLAPNLNNKAIYQ	0	5	5
381	ELVGDPKAKFRNCMP	0	5	5
382	ESDMNETSSLFLQVQ	5	0	5
383	FLLGLAALAMTACN	0	5	5
384	FIPVIGKMLNIYIDL	0	5	5
385	FISPIIRVYPTLDTT	0	5	5
386	GKVTALRIVTYLNER	2	3	5
387	GNELLISAKLPDVLN	0	5	5
388	ISDYELVGDPKAKFR	0	5	5
389	ISLSEKFQIVPIIVN	4	1	5
390	IVPIIVNGSLSEFKF	0	5	5
391	IYLVANVNFGSFEF	0	5	5
392	KIRQNPSQFIINTFG	0	5	5
393	KKIRSNHLYDMAVTI	0	5	5
394	KYLLYASLLTSVLLF	2	3	5
395	KYYIAGNTFSGGIWL	0	5	5
396	LDNVPLVRAIAKVEL	0	5	5
397	LKTLVPNSILLQNDG	0	5	5
398	LNPLRLIYHSNQQR	0	5	5
399	LPTRAEIQLVDKLQR	0	5	5
400	LSEKFQIVPIIVNGS	0	5	5
401	NATISVVLKTSNSNR	0	5	5
402	NEEDPVTINGSLSVI	0	5	5
403	NNSEFKIYLVANVNF	0	5	5
404	NPAKYIAGNTFSGG	0	5	5
405	NPLRLIYHSNQQRNRY	0	5	5
406	NRILNIICPPILFLL	0	5	5

407	NTGAMELVGKTLAEV	0	5	5
408	PEGNLAPNLNNKAIY	0	5	5
409	PGDLFSGVLTCPIEY	0	5	5
410	PIIRVYPTLDTTPLH	0	5	5
411	PIIVNGSLSEFKFRY	0	5	5
412	PQGFYVLENDYSANG	0	5	5
413	PVTINGSLSVIEWTS	0	5	5
414	QGFYVLENDYSANGG	0	5	5
415	QGNELLISAKLPDVL	0	5	5
416	QGTVQANISLNRIAA	0	5	5
417	QNGDFISPIIRVYPT	0	5	5
418	QVHIIIRGYQEWLEA	0	5	5
419	RLLDNVPLVRAIAKV	0	5	5
420	RRTAQVHIIIRGYQE	0	5	5
421	RVVIFVDETGRRID	0	5	5
422	SDKKIRSNHLYDMAV	0	5	5
423	SDYELVGDPKAKFRN	0	5	5
424	SEVERRIHFIANYEL	0	5	5
425	SPIIRVYPTLDTTPL	0	5	5
426	TAKIIPSEVERRIHF	0	5	5
427	TEIELDYFSSHSLLP	0	5	5
428	TLNPLRLIYHSNQON	0	5	5
429	TVYTIKVKALKPNGI	0	5	5
430	TYYPVLVNFNSNNYT	0	5	5
431	VIGKMLNIYIDLRGA	0	5	5
432	VPIIVNGSLSEFKFR	0	5	5
433	VQGNPDLKRSVTVLV	0	5	5
434	YDNIYTFVPEKIYGL	2	3	5
435	YELVGDPKAKFRNCM	0	5	5
436	YRRTAQVHIIIRGYQ	0	5	5
437	YTLNPLRLIYHSNQO	0	5	5
438	AAKITLDIKQVTPGS	0	4	4
439	AEVKALTTELTAEHQ	0	4	4
440	AKITLDIKQVTPGSD	0	4	4
441	ANGKVTALRIVTYLN	0	4	4
442	ANVPWLSRNYVAPAA	0	4	4
443	ATVKMSLDDVEMRGG	0	4	4
444	DFLANRLLDNVPLVR	2	2	4
445	DGSGMLTVDH TYMVF	0	4	4
446	DVLNAAALLPITFKVY	2	2	4
447	DYGFLVPYVAEINPH	0	4	4

448	DYSKLTVSVSTPTGQ	0	4	4
449	EALYNGIKTRYAYV	0	4	4
450	EIKVQMSAAYDNIYT	0	4	4
451	EQAGVVRDIMGYY	0	4	4
452	ESKLYDASYALNSW	2	2	4
453	ESMYGQFNGNNSFKI	0	4	4
454	EVGFYKKSGSSYTLK	0	4	4
455	FKSNKVNSEAENIAVK	0	4	4
456	FLANRLLDNVPLVRA	0	4	4
457	FLLGLAALAMTACNK	0	4	4
458	GDLFSGVLTCPIEYG	0	4	4
459	GGMILGIEGGKTLYK	0	4	4
460	GKTLAEVKALTTTLT	0	4	4
461	GKTYYPVLVNFNSNN	0	4	4
462	GLAELIGNAVQYRPD	0	4	4
463	GLPDKAIKILLPTAS	0	4	4
464	GMLTVDHTYMFVQVG	0	4	4
465	GNLAPNLNNKAIYQI	0	4	4
466	HARMAFTEIKVQMSA	0	4	4
467	HAVITQDNVVTFENS	0	4	4
468	HTYMFVQGEPSGTF	0	4	4
469	IAAKITLDIKQVTPG	0	4	4
470	IDLRGANLNVLSVT	0	4	4
471	IIRVYPTLDTTPLHL	0	4	4
472	IVRPFTMTGMATATL	0	4	4
473	IYQIVVLSPPADGNM	0	4	4
474	KITLDIKQVTPGSDV	0	4	4
475	LAEVKALTTTELTAEN	0	4	4
476	LNEEDPVTINGSLSV	0	4	4
477	LNVLVSVTPWDVVQQ	0	4	4
478	LPDVLNAALLPITFK	2	2	4
479	NGKVTALRIVTYLNE	2	2	4
480	NISDYELVGDPKAKF	0	4	4
481	NLAPNLNNKAIYQIV	0	4	4
482	NLNVLSVTPWDVVQ	0	4	4
483	NRIAAKITLDIKQVT	0	4	4
484	NVPWLSRNYVAPAAD	0	4	4
485	PFTMTGMATATLNPQ	0	4	4
486	PLRLIYHSNQONRYA	0	4	4
487	PVLVNFNSNNYTYDS	0	4	4
488	QAGVVRDIMGYYW	0	4	4

489	QDNVVTFENSLSFTV	0	4	4
490	QPEGNLAPNLNNKAI	0	4	4
491	QTVDIYRRTAQVHII	0	4	4
492	RFKSNKVNSAENIAV	0	4	4
493	RIAAKITLDIKQVTP	0	4	4
494	RIHFIANYELADPSV	0	4	4
495	RLIYHSNQQRNRYALM	0	4	4
496	RLTLVFYKNGTKVWQ	0	4	4
497	RPFTMTGMATATLNP	0	4	4
498	SAGQRTLVMANTGA	0	4	4
499	TIKNSIGFEKKIKIR	0	4	4
500	TLAEVKALTTELTAE	0	4	4
501	TTEIELDYFSSHSL	0	4	4
502	TYMVVFVQGEPSGTFQ	0	4	4
503	VATVKMSLDDVEMRG	0	4	4
504	VDIYRRTAQVHIIIR	0	4	4
505	VENLDYGFVLPYVAE	0	4	4
506	VPTVTIDANTKKIKV	0	4	4
507	VPWLSRNYVAPAADA	0	4	4
508	VRPFTMTGMATATLN	0	4	4
509	YLLYASLLTSVLLFS	0	4	4
510	YLVANVNFSGSFEPN	0	4	4
511	YPVLVNFNSNNYTYD	0	4	4
512	YTFVPEKIYGLIAKK	0	4	4
513	YVVANVDNAVKTALD	0	4	4
514	AIYQIVVLSPPADGN	0	3	3
515	ATLVNADANYLTGSL	0	3	3
516	DANGKVTALRIVTYL	0	3	3
517	DANTKKIKVRSILPI	0	3	3
518	DHTYMFVQGEPSGT	0	3	3
519	DIYRRTAQVHIIIRG	0	3	3
520	DKFAMIGSVEKQINM	0	3	3
521	DLFSGVLTCPIEYGS	0	3	3
522	DYTTYKLDFVDTNKV	2	1	3
523	EDKFAMIGSVEKQIN	0	3	3
524	EIELDYFSSHSLPP	0	3	3
525	ELASQLGATLVQDHW	0	3	3
526	ERLTLVFYKNGTKVW	0	3	3
527	EVKALTTELTAENQE	0	3	3
528	FGATLVNADANYLTG	0	3	3
529	GATLVNADANYLTGS	0	3	3

530	GEFSSLLLLTTTVLPW	0	3	3
531	GLNGLWVLDKQKLFA	0	3	3
532	GMILGIEGGKTLYKY	0	3	3
533	HDFLANRLLDNVPLV	2	1	3
534	HLKLYAYGQELLNIS	2	1	3
535	IGKMLNIYIDLRGAN	0	3	3
536	IKILLPTASGNATEQ	0	3	3
537	IYRRTAQVHIIIRGY	0	3	3
538	KAIYQIVVLSPPADG	0	3	3
539	KVTALRIVTYLNERD	2	1	3
540	KYFHHPSGLLPRLLL	0	3	3
541	LFFTVDGKKVILDKN	0	3	3
542	LKRSVTVLVREKYQY	0	3	3
543	LLLLLTMGAVACTKE	0	3	3
544	LLLLTMGAVACTKED	0	3	3
545	LLYASLLTSVLLFSC	0	3	3
546	LNGLWVLDKQKLFAS	0	3	3
547	LYASLLTSVLLFSCS	0	3	3
548	LYLLLFQSGANPAK	0	3	3
549	MGEFSSLLLLTTTVLP	0	3	3
550	MILGIEGGKTLYKYV	0	3	3
551	NELLISAKLPDVLNA	0	3	3
552	NGLWVLDKQKLFASG	0	3	3
553	NPDYSKLTVSSTPT	0	3	3
554	NVLVSVTPWDVVQQY	0	3	3
555	PDTYTGLAELIGNAV	0	3	3
556	PDVLNAALLPITFKV	0	3	3
557	PDYSKLTVSSTPTG	0	3	3
558	PEDKFAMIGSVEKQI	0	3	3
559	PIVRPFTMTGMATAT	0	3	3
560	PRQIYVIANEPDALT	0	3	3
561	PSQFIINTFGTKSSW	0	3	3
562	QNVKDLFFRLSSTDG	0	3	3
563	QRRTNLFFTVDGKKV	0	3	3
564	RILNIICPPILFLLV	0	3	3
565	SDMNETSSLFLQVQP	3	0	3
566	SGSIVSLEHHGLRGA	0	3	3
567	SPGDLFSGVLTCPIE	0	3	3
568	SQFIINTFGTKSSWQ	0	3	3
569	TFVPEKIYGLIAKKQ	0	3	3
570	TGGMILGIEGGKTLY	0	3	3

571	TVDIYRRTAQVHIII	0	3	3
572	TVENLDYGFLVPYVA	0	3	3
573	VEALYNGIKTRYAY	0	3	3
574	VFFKANTSSAENNQV	0	3	3
575	VGFYKKS GSSYTLKH	0	3	3
576	VHFYSYNEWALNNE	0	3	3
577	VQYLEVIPQETVMNM	0	3	3
578	VRAIAKVELNISLSE	3	0	3
579	VSPSFELASQLGATL	0	3	3
580	YGLIAKKQSNLFGAT	0	3	3
581	YKLDFVD TNKVRYN I	0	3	3
582	YKYVLTTMPQNKELQ	0	3	3
583	YLLLFDQSGANPAKY	0	3	3
584	YMFVQGEPSGTFQA	0	3	3
585	YQIVVLSPPADGNMI	0	3	3
586	YSKLT VSVSTPTGQQ	0	3	3
587	YVLIAFMAVSCVADK	0	3	3
588	AALLPITFKVYTEHF	2	0	2
589	AEGKTYYPVLVNFS	0	2	2
590	AKIIPSEVERRIHFI	0	2	2
591	ASAPLYVYENIGSDS	0	2	2
592	ASPFLMSGNKTHDFL	0	2	2
593	AYDNIYTFVPEKIYG	0	2	2
594	DAPQGFYVLENDYSA	0	2	2
595	EHFYPKTGGMILGIE	0	2	2
596	ETSSLFLQVQPYNQR	0	2	2
597	FFYGFERDQSNIGTG	0	2	2
598	FHHPSG LLPRLLLLL	0	2	2
599	FLLVGFLFGCVREDI	2	0	2
600	FTAKIIPSEVERRIH	0	2	2
601	FYGFERDQSNIGTGA	0	2	2
602	GFYKKS GSSYTLKHT	0	2	2
603	GFYVLENDYSANGGT	0	2	2
604	GIQRRTNLFFTVDGK	2	0	2
605	GNNSFKIYLVANVNF	0	2	2
606	GPRQIYVIANEPDAL	0	2	2
607	GQGNELLISAKLPDV	0	2	2
608	GRRIDRLMMDAAQVA	0	2	2
609	GSLSEFKFRYVNFDK	2	0	2
610	GTGYTLDANGKVTAL	0	2	2
611	HLYDMAVTIEVLGSL	0	2	2

612	IAKVELNISLSEKFQ	0	2	2
613	IASPFLMSGNKTHDF	0	2	2
614	IERLTLVFYKNGTKV	0	2	2
615	IESDMNETSSLFLQV	2	0	2
616	IGIQRRTNLFFTVDG	2	0	2
617	IIVNGSLSEFKFRYV	2	0	2
618	IKRVHARMAFTEIKV	0	2	2
619	ILFLLVGFLFGCVRE	2	0	2
620	IPKDISFTIKNSIGF	0	2	2
621	IQRRTNLFFTVDGKK	2	0	2
622	ISPIIRVYPTLDTP	0	2	2
623	IVNGSLSEFKFRYVN	2	0	2
624	KDISFTIKNSIGFEK	0	2	2
625	KEVGfYKKSGSSYTL	0	2	2
626	KFAMIGSVEKQINMA	0	2	2
627	KKPVLNISDYELVGD	2	0	2
628	KPEDKFAMIGSVEKQ	0	2	2
629	KTHDFLANRLLDNVP	2	0	2
630	KVRIFVFREGLNGLW	0	2	2
631	LFGATLVNADANYLT	0	2	2
632	LFLLVGFLFGCVRED	2	0	2
633	LKKPVLNISDYELVG	2	0	2
634	LLFDQSGANPAKYI	0	2	2
635	LLLLLLTMGAVACTK	0	2	2
636	LLLTMGAVACTKEDN	0	2	2
637	LLVGFLFGCVREDIE	2	0	2
638	LNAALLPITFKVYTE	2	0	2
639	LVQDHWEYYTLNPLR	2	0	2
640	MELVGKTLAEVKALT	2	0	2
641	MKSKSIIAQLLYVLI	0	2	2
642	NAALLPITFKVYTEH	2	0	2
643	NETSSLFLQVQPYNQ	2	0	2
644	NGSLSEFKFRYVNFD	2	0	2
645	NHLYDMAVTIEVLGS	0	2	2
646	NKTHDFLANRLLDNV	2	0	2
647	NSIGFEKKIKIRQNP	0	2	2
648	PFRLTVRAWDADMQD	0	2	2
649	PKDISFTIKNSIGFE	0	2	2
650	QIYVIANEPDALTTK	0	2	2
651	RLITNLYLLLFDQSG	2	0	2
652	RLKKPVLNISDYELV	2	0	2

653	RSNHLYDMAVTIEVL	0	2	2
654	RYYAYVNDKTTTANH	0	2	2
655	SDCPRPFRLTVRAWD	0	2	2
656	SKLYDASYALYNSWN	0	2	2
657	SLNRIAAKITLDIKQ	0	2	2
658	SLSEKFQIVPIIVNG	0	2	2
659	SNHLYDMAVTIEVLG	0	2	2
660	SSLFLQVQPYNQORSE	0	2	2
661	SSVHFYSYNEWALN	0	2	2
662	SVHFYSYNEWALNN	0	2	2
663	TALRIVTYLNERDSK	2	0	2
664	TEHFYPKTGGMILGI	0	2	2
665	TLVQDHWEEYTLNPL	2	0	2
666	TRYAYVNDKTTTAN	0	2	2
667	TSSLFLQVQPYNQORS	0	2	2
668	VDKLQREQAGVVRDI	0	2	2
669	VEDIKCSAGQRTLTVV	0	2	2
670	VGKTLAEVKALTTEL	0	2	2
671	VLNAALLPITFKVYT	2	0	2
672	VNGSLSEFKFRYVNF	2	0	2
673	VTALRIVTYLNERDS	2	0	2
674	YFHHPSGLLPRLLLL	0	2	2
675	YTEHFYPKTGGMILG	0	2	2
676	YYAYVNDKTTTANHH	0	2	2
677	AAYDNIYTFVPEKIY	0	1	1
678	AESKLYDASYALYNS	0	1	1
679	AGERKVYVVANVDNA	0	1	1
680	AGVVRDIMGTRYYS	0	1	1
681	AIKVELNISLSEKF	0	1	1
682	AIDYRPMTEANSSVH	0	1	1
683	AKKQSNLFGATLVNA	0	1	1
684	AKLRLKKPVLNISDY	0	1	1
685	ALYNGIKTRYAYVN	0	1	1
686	ANESDLQTVKRTTAM	0	1	1
687	ANLNLVSVTPWDVV	0	1	1
688	ANVPTVTIDANTKKI	0	1	1
689	AVITQDNVVTFENSL	0	1	1
690	DAEGKTYYPVLVNFN	0	1	1
691	DDESKVAKLTVMVYN	0	1	1
692	DESKVAKLTVMVYNG	0	1	1
693	DGKKVILDKNINQP	0	1	1

694	DLQTVKRTTAMPWST	0	1	1
695	DQTVDIYRRTAQVHI	0	1	1
696	DTNKVRYNITRNHFY	0	1	1
697	DVQYLEVIPQETVMN	0	1	1
698	EAAGLIMTAEPKTIV	0	1	1
699	EAIDYRPMTEANSSV	0	1	1
700	EDIKCSAGQRTLIVM	0	1	1
701	EGGKTLYKYVLTTMP	0	1	1
702	EGLNGLWVLDKQKLF	0	1	1
703	ELDYFSSHSLLPAD	0	1	1
704	FTMTGMATATLNPQG	0	1	1
705	FYSYYNEWALNNEGR	0	1	1
706	GANPAKYIAGNTFS	0	1	1
707	GKIKLTLAQQENLTK	0	1	1
708	GKKVILDKNINPQPT	0	1	1
709	GKQLGSIELKRVAAK	0	1	1
710	GLWVLDKQKLFASGQ	0	1	1
711	GNATISVVLKTSNSN	0	1	1
712	GQNNPDYSKLTVSVS	0	1	1
713	GSIVSLEHHGLRGAS	0	1	1
714	GSLTTFNGAYTPANY	0	1	1
715	HFFYGFERDQSNIGT	0	1	1
716	HFYSYYNEWALNNEG	0	1	1
717	IENDPLKIKRVHARM	0	1	1
718	IFVFDETGRRIDRLM	0	1	1
719	ILLVAGMFGGCIKED	0	1	1
720	ILPINNIPKDISFTI	0	1	1
721	IQLVDKLQREQAGVV	0	1	1
722	ITNLYLLLFQSGAN	0	1	1
723	IVLKAGKNYIGYSGT	0	1	1
724	KIIPSEVERRIHFA	0	1	1
725	KIKLTLAQQENLTKR	0	1	1
726	KKVILDKNINPQPTD	0	1	1
727	KKVRIFVFREGLNGL	0	1	1
728	KLPDVLNAALLPITF	0	1	1
729	KLYDASYALNSWNK	0	1	1
730	KMGEFSSLLLTTLVL	0	1	1
731	KPYYYRIPVDGSDKK	0	1	1
732	KSKSIIAQLLYVLIA	0	1	1
733	KTGGMILGIEGGKTL	0	1	1
734	KTRYAYVNDKTTTA	0	1	1

735	KYVLTTMPQNKELQF	0	1	1
736	LDANGKVTALRIVTY	0	1	1
737	LDYFSSHSLPADV	0	1	1
738	LIAFMAVSCVADKSE	0	1	1
739	LIKKVRIFVFREGLN	0	1	1
740	LILLVAGMFGGCIKE	0	1	1
741	LIMTAEPKTIVLKAG	0	1	1
742	LKLYAYGQELLNIST	0	1	1
743	LPDVQYLEVIPQETV	0	1	1
744	LSFTVRIKGRDGSRW	0	1	1
745	LTTFNGAYTPANYAN	0	1	1
746	MILKKAKAPGRPTLQ	0	1	1
747	MLTVDHXYMVVFVQGE	0	1	1
748	MRTNRILNIICPPIL	0	1	1
749	NGNNSFKIYLVANVN	0	1	1
750	NGSAQSIIQASAPLY	0	1	1
751	NIPKDISFTIKNSIG	0	1	1
752	NITRNHFYKMILKKA	0	1	1
753	NKAIYQIVVLSPPAD	0	1	1
754	NLYLLLFDQSGANPA	0	1	1
755	NNIPKDISFTIKNSI	0	1	1
756	NNKAIYQIVVLSPPA	0	1	1
757	NNPDYSKLTVSVSTP	0	1	1
758	NPHAVITQDNVVTFE	0	1	1
759	NPQGTVQANISLNRI	0	1	1
760	NSSVHFYSYYNEWAL	0	1	1
761	NVPTVTIDANTKKIK	0	1	1
762	PDVQYLEVIPQETVM	0	1	1
763	PHAVITQDNVVTFEN	0	1	1
764	PQGTVQANISLNRIA	0	1	1
765	PTVTIDANTKKIKVR	0	1	1
766	QFIINTFGTKSSWQP	0	1	1
767	QNNPDYSKLTVSVST	0	1	1
768	QSPGDLFSGVLTCPPI	0	1	1
769	QYLEVIPQETVMNMT	0	1	1
770	REQAGVVRDIMTGRY	0	1	1
771	RIFVFREGLNGLWVL	0	1	1
772	RSILPINNIPKDISF	0	1	1
773	RVSGSIVSLEHHGLR	0	1	1
774	SDGSGMLTVDHXYMV	0	1	1
775	SILPINNIPKDISFT	0	1	1

776	SLFLQVQPYNQORSEE	0	1	1
777	SLTTFNGAYTPANYA	0	1	1
778	TFTAKIIPSEVERRI	0	1	1
779	TKMGEFSSLLLTDTV	0	1	1
780	TNLYLLLFQSGANP	0	1	1
781	TTFNGAYTPANYANV	0	1	1
782	TVKMSLDDVEMRGGD	0	1	1
783	TVSFVAWANPDDHML	0	1	1
784	TVTIDANTKKIKVRS	0	1	1
785	VDGKKVILDKNINPQ	0	1	1
786	VDHTYMFVQGEPSG	0	1	1
787	VHARMAFTEIKVQMS	0	1	1
788	VKMSLDDVEMRGGDL	0	1	1
789	VLIAFMAVSCVADKS	0	1	1
790	VLLFSCSKNNPSEPV	0	1	1
791	VQRVVIFVFDETGRR	0	1	1
792	VRIFVFREGLNGLWV	0	1	1
793	VTPGSDVIKIKVQI	0	1	1
794	VYTEHFYPKTGGMIL	0	1	1
795	YAYVNDKTTTANHHY	0	1	1
796	YGFERDQSNIGTGAG	0	1	1
797	YLEVIPQETVMNMTT	0	1	1
798	YSGEDLIKKVRIFVF	0	1	1
	Total	545	5798	6343

Table S6. All cases of allele-protein-peptide combinations with predicted high affinity binding ($IC_{50} < 50$ nM).

Index	Allele	Protein	Start	End	Peptide	IC_{50}
1	DPB1*01:01	B2RHG4	207	221	EFKFRYVNFDKETVYV	24.54
2	DPB1*01:01	B2RHG4	206	220	SEFKFRYVNFDKETY	28.19
3	DPB1*01:01	B2RHG4	208	222	FKFRYVNFDKETVYV	28.21
4	DPB1*01:01	B2RHG4	205	219	LSEFKFRYVNFDKET	33.21
5	DPB1*01:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	37.62
6	DPB1*01:01	B2RHG4	209	223	KFRYVNFDKETVYVK	48.58
7	DPB1*02:01	B2RH54	102	116	AMELVGKTLAEVKAL	49.18
8	DPB1*02:01	B2RH58	34	48	MNETSSLFLQVQPYN	40.38
9	DPB1*02:01	B2RH58	545	559	DHWEYYTLNPLRLIY	48.60
10	DPB1*02:01	B2RH58	546	560	HWEYYTLNPLRLIYH	48.99
11	DPB1*02:01	B2RH59	427	441	VLVREKYQYVFFKAN	15.24
12	DPB1*02:01	B2RH59	428	442	LVREKYQYVFFKANT	15.35
13	DPB1*02:01	B2RH59	429	443	VREKYQYVFFKANTS	15.75
14	DPB1*02:01	B2RH59	430	444	REKYQYVFFKANTSS	16.22
15	DPB1*02:01	B2RH59	431	445	EKYQYVFFKANTSSA	21.06
16	DPB1*02:01	B2RH59	432	446	KYQYVFFKANTSSAE	29.48
17	DPB1*02:01	B2RH59	425	439	VTVLVREKYQYVFFK	32.92
18	DPB1*02:01	B2RH59	426	440	TVLVREKYQYVFFKA	35.79
19	DPB1*02:01	B2RH59	424	438	SVTVLVREKYQYVFF	41.96
20	DPB1*02:01	B2RHG4	207	221	EFKFRYVNFDKETVYV	19.77
21	DPB1*02:01	B2RHG4	208	222	FKFRYVNFDKETVYV	23.31
22	DPB1*02:01	B2RHG4	206	220	SEFKFRYVNFDKETY	25.38
23	DPB1*02:01	B2RHG4	59	73	AERLITNLYLLLFQDQ	29.33
24	DPB1*02:01	B2RHG4	205	219	LSEFKFRYVNFDKET	32.69
25	DPB1*02:01	B2RHG4	186	200	LNISLSEKFQIVPII	35.60
26	DPB1*02:01	B2RHG4	58	72	AAERLITNLYLLLFQD	36.23
27	DPB1*02:01	B2RHG4	60	74	ERLITNLYLLLFQDQS	36.27
28	DPB1*02:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	39.39
29	DPB1*02:01	B2RHG4	185	199	ELNISLSEKFQIVPI	40.61
30	DPB1*02:01	B2RHG4	1	15	MKKYLLYASLLTSVL	41.68
31	DPB1*02:01	B2RHG4	163	177	THDFLANRLLDNVPL	42.83
32	DPB1*02:01	B2RHG4	56	70	GSAAERLITNLYLLL	44.85
33	DPB1*02:01	B2RHG4	209	223	KFRYVNFDKETVYVK	46.86
34	DPB1*02:01	B2RHG4	187	201	NISLSEKFQIVPIIV	48.10
35	DPB1*02:01	B2RHG4	57	71	SAAERLITNLYLLLF	49.27
36	DPB1*02:02	B2RH54	102	116	AMELVGKTLAEVKAL	48.36
37	DPB1*02:02	B2RH58	34	48	MNETSSLFLQVQPYN	37.66
38	DPB1*02:02	B2RH58	545	559	DHWEYYTLNPLRLIY	38.19
39	DPB1*02:02	B2RH58	544	558	QDHWEYYTLNPLRLI	39.25

40	DPB1*02:02	B2RH58	546	560	HWEYYTLNPLRLIYH	41.48
41	DPB1*02:02	B2RH58	33	47	DMNETSSLFLQVQPY	41.57
42	DPB1*02:02	B2RH58	31	45	ESDMNETSSLFLQVQ	49.76
43	DPB1*02:02	B2RH59	427	441	VLVREKYQYVFFKAN	14.52
44	DPB1*02:02	B2RH59	428	442	LVREKYQYVFFKANT	14.68
45	DPB1*02:02	B2RH59	429	443	VREKYQYVFFKANTS	14.91
46	DPB1*02:02	B2RH59	430	444	REKYQYVFFKANTSS	15.42
47	DPB1*02:02	B2RH59	431	445	EKYQYVFFKANTSSA	21.18
48	DPB1*02:02	B2RH59	432	446	KYQYVFFKANTSSAE	32.05
49	DPB1*02:02	B2RH59	425	439	VTVLVREKYQYVFFK	35.58
50	DPB1*02:02	B2RH59	426	440	TVLVREKYQYVFFKA	38.34
51	DPB1*02:02	B2RH59	424	438	SVTVLVREKYQYVFF	44.93
52	DPB1*02:02	B2RHG4	207	221	EFKFRYVNFDKETV	17.81
53	DPB1*02:02	B2RHG4	206	220	SEFKFRYVNFDKET	22.16
54	DPB1*02:02	B2RHG4	208	222	FKFRYVNFDKETV	22.59
55	DPB1*02:02	B2RHG4	205	219	LSEFKFRYVNFDKET	26.68
56	DPB1*02:02	B2RHG4	59	73	AERLITNLYLLLLFDQ	26.76
57	DPB1*02:02	B2RHG4	186	200	LNISLSEKFQIVPII	29.26
58	DPB1*02:02	B2RHG4	204	218	SLSEFKFRYVNFDKE	31.12
59	DPB1*02:02	B2RHG4	60	74	ERLITNLYLLLLFDQS	32.33
60	DPB1*02:02	B2RHG4	58	72	AAERLITNLYLLLLFD	32.46
61	DPB1*02:02	B2RHG4	185	199	ELNISLSEKFQIVPI	32.77
62	DPB1*02:02	B2RHG4	1	15	MKKYLLYASLLTSVL	39.07
63	DPB1*02:02	B2RHG4	56	70	GSAAERLITNLYLLL	39.46
64	DPB1*02:02	B2RHG4	187	201	NISLSEKFQIVPIIV	40.04
65	DPB1*02:02	B2RHG4	57	71	SAAERLITNLYLLLF	41.94
66	DPB1*02:02	B2RHG4	184	198	VELNISLSEKFQIVP	44.77
67	DPB1*02:02	B2RHG4	163	177	THDFLANRLLDNVPL	45.89
68	DPB1*02:02	B2RHG4	209	223	KFRYVNFDKETVVK	46.01
69	DPB1*02:02	B2RHG4	188	202	ISLSEKFQIVPIIVN	47.30
70	DPB1*03:01	B2RH54	165	179	KIKRVHARMAFTEIK	40.88
71	DPB1*03:01	B2RH54	164	178	LKIKRVHARMAFTEI	44.33
72	DPB1*03:01	B2RH58	410	424	KIKVRSILPINNIPK	49.91
73	DPB1*03:01	B2RHG4	177	191	LVRAIAKVELNISLS	26.70
74	DPB1*03:01	B2RHG4	176	190	PLVRAIAKVELNISL	32.04
75	DPB1*03:01	B2RHG4	178	192	VRAIAKVELNISLSE	43.93
76	DPB1*03:01	B2RHG4	175	189	VPLVRAIAKVELNIS	44.88
77	DPB1*03:01	B2RHG4	174	188	NVPLVRAIAKVELNI	45.27
78	DPB1*04:01	B2RH58	34	48	MNETSSLFLQVQPYN	38.58
79	DPB1*04:01	B2RH58	33	47	DMNETSSLFLQVQPY	43.05
80	DPB1*04:01	B2RH59	427	441	VLVREKYQYVFFKAN	21.05
81	DPB1*04:01	B2RH59	428	442	LVREKYQYVFFKANT	22.17
82	DPB1*04:01	B2RH59	429	443	VREKYQYVFFKANTS	22.28

83	DPB1*04:01	B2RH59	430	444	REKYQYVFFKANTSS	23.94
84	DPB1*04:01	B2RH59	431	445	EKYQYVFFKANTSSA	35.85
85	DPB1*04:01	B2RHG4	207	221	EFKFRYVNFDKETVYV	12.64
86	DPB1*04:01	B2RHG4	208	222	FKFRYVNFDKETVYV	15.05
87	DPB1*04:01	B2RHG4	206	220	SEFKFRYVNFDKET	15.20
88	DPB1*04:01	B2RHG4	205	219	LSEFKFRYVNFDKET	18.58
89	DPB1*04:01	B2RHG4	59	73	AERLITNLYLLLLFDQ	22.20
90	DPB1*04:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	23.61
91	DPB1*04:01	B2RHG4	186	200	LNISLSEKFQIVPII	26.15
92	DPB1*04:01	B2RHG4	58	72	AAERLITNLYLLLLFD	26.31
93	DPB1*04:01	B2RHG4	60	74	ERLITNLYLLLLFDQS	27.98
94	DPB1*04:01	B2RHG4	185	199	ELNISLSEKFQIVPI	28.95
95	DPB1*04:01	B2RHG4	56	70	GSAAERLITNLYLLL	29.58
96	DPB1*04:01	B2RHG4	209	223	KFRYVNFDKETVYVVK	31.95
97	DPB1*04:01	B2RHG4	57	71	SAAERLITNLYLLLF	34.51
98	DPB1*04:01	B2RHG4	184	198	VELNISLSEKFQIVP	37.16
99	DPB1*04:01	B2RHG4	187	201	NISLSEKFQIVPIIV	38.59
100	DPB1*04:01	B2RHG4	183	197	KVELNISLSEKFQIV	48.69
101	DPB1*104:01	B2RH54	165	179	KIKRVHARMAFTEIK	40.88
102	DPB1*104:01	B2RH54	164	178	LKIKRVHARMAFTEI	44.33
103	DPB1*104:01	B2RH58	410	424	KIKVRSILPINNIPK	49.91
104	DPB1*104:01	B2RHG4	177	191	LVRAIAKVELNISLS	26.70
105	DPB1*104:01	B2RHG4	176	190	PLVRAIAKVELNISL	32.04
106	DPB1*104:01	B2RHG4	178	192	VRAIAKVELNISLSE	43.93
107	DPB1*104:01	B2RHG4	175	189	VPLVRAIAKVELNIS	44.88
108	DPB1*104:01	B2RHG4	174	188	NVPLVRAIAKVELNI	45.27
109	DPB1*124:01	B2RH54	165	179	KIKRVHARMAFTEIK	40.88
110	DPB1*124:01	B2RH54	164	178	LKIKRVHARMAFTEI	44.33
111	DPB1*124:01	B2RH58	410	424	KIKVRSILPINNIPK	49.91
112	DPB1*124:01	B2RHG4	177	191	LVRAIAKVELNISLS	26.70
113	DPB1*124:01	B2RHG4	176	190	PLVRAIAKVELNISL	32.04
114	DPB1*124:01	B2RHG4	178	192	VRAIAKVELNISLSE	43.93
115	DPB1*124:01	B2RHG4	175	189	VPLVRAIAKVELNIS	44.88
116	DPB1*124:01	B2RHG4	174	188	NVPLVRAIAKVELNI	45.27
117	DPB1*126:01	B2RH58	34	48	MNETSSLFLQVQPYN	38.58
118	DPB1*126:01	B2RH58	33	47	DMNETSSLFLQVQPY	43.05
119	DPB1*126:01	B2RH59	427	441	VLVREKYQYVFFKAN	21.05
120	DPB1*126:01	B2RH59	428	442	LVREKYQYVFFKANT	22.17
121	DPB1*126:01	B2RH59	429	443	VREKYQYVFFKANTS	22.28
122	DPB1*126:01	B2RH59	430	444	REKYQYVFFKANTSS	23.94
123	DPB1*126:01	B2RH59	431	445	EKYQYVFFKANTSSA	35.85
124	DPB1*126:01	B2RHG4	207	221	EFKFRYVNFDKETVYV	12.64
125	DPB1*126:01	B2RHG4	208	222	FKFRYVNFDKETVYV	15.05

126	DPB1*126:01	B2RHG4	206	220	SEFKFRYVNFDKETY	15.20
127	DPB1*126:01	B2RHG4	205	219	LSEFKFRYVNFDKET	18.58
128	DPB1*126:01	B2RHG4	59	73	AERLITNLYLLLFDQ	22.20
129	DPB1*126:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	23.61
130	DPB1*126:01	B2RHG4	186	200	LNISLSEKFQIVPII	26.15
131	DPB1*126:01	B2RHG4	58	72	AAERLITNLYLLLFD	26.31
132	DPB1*126:01	B2RHG4	60	74	ERLITNLYLLLFDQS	27.98
133	DPB1*126:01	B2RHG4	185	199	ELNISLSEKFQIVPI	28.95
134	DPB1*126:01	B2RHG4	56	70	GSAAERLITNLYLLL	29.58
135	DPB1*126:01	B2RHG4	209	223	KFRYVNFDKETVVK	31.95
136	DPB1*126:01	B2RHG4	57	71	SAAERLITNLYLLLF	34.51
137	DPB1*126:01	B2RHG4	184	198	VELNISLSEKFQIVP	37.16
138	DPB1*126:01	B2RHG4	187	201	NISLSEKFQIVPIIV	38.59
139	DPB1*126:01	B2RHG4	183	197	KVELNISLSEKFQIV	48.69
140	DPB1*14:01	B2RHG4	177	191	LVRAIAKVELNISLS	45.24
141	DPB1*15:01	B2RH58	33	47	DMNETSSLFLQVQPY	49.81
142	DPB1*15:01	B2RH59	429	443	VREKYQYVFFKANTS	32.36
143	DPB1*15:01	B2RH59	427	441	VLVREKYQYVFFKAN	33.07
144	DPB1*15:01	B2RH59	428	442	LVREKYQYVFFKANT	34.02
145	DPB1*15:01	B2RH59	430	444	REKYQYVFFKANTSS	34.30
146	DPB1*15:01	B2RH59	431	445	EKYQYVFFKANTSSA	47.93
147	DPB1*15:01	B2RHG4	207	221	EFKFRYVNFDKETV	24.90
148	DPB1*15:01	B2RHG4	206	220	SEFKFRYVNFDKETY	29.11
149	DPB1*15:01	B2RHG4	59	73	AERLITNLYLLLFDQ	29.51
150	DPB1*15:01	B2RHG4	60	74	ERLITNLYLLLFDQS	31.83
151	DPB1*15:01	B2RHG4	208	222	FKFRYVNFDKETV	32.36
152	DPB1*15:01	B2RHG4	205	219	LSEFKFRYVNFDKET	34.32
153	DPB1*15:01	B2RHG4	58	72	AAERLITNLYLLLFD	34.88
154	DPB1*15:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	38.10
155	DPB1*15:01	B2RHG4	1	15	MKKYLLYASLLTSVL	42.93
156	DPB1*15:01	B2RHG4	57	71	SAAERLITNLYLLLF	44.99
157	DPB1*16:01	B2RH59	429	443	VREKYQYVFFKANTS	42.17
158	DPB1*16:01	B2RH59	430	444	REKYQYVFFKANTSS	43.83
159	DPB1*16:01	B2RH59	428	442	LVREKYQYVFFKANT	45.86
160	DPB1*16:01	B2RH59	427	441	VLVREKYQYVFFKAN	46.92
161	DPB1*16:01	B2RHG4	207	221	EFKFRYVNFDKETV	39.64
162	DPB1*16:01	B2RHG4	208	222	FKFRYVNFDKETV	45.65
163	DPB1*16:01	B2RHG4	206	220	SEFKFRYVNFDKETY	48.79
164	DPB1*20:01	B2RHG4	177	191	LVRAIAKVELNISLS	41.72
165	DPB1*20:01	B2RHG4	176	190	PLVRAIAKVELNISL	47.76
166	DPB1*23:01	B2RH58	34	48	MNETSSLFLQVQPYN	38.58
167	DPB1*23:01	B2RH58	33	47	DMNETSSLFLQVQPY	43.05
168	DPB1*23:01	B2RH59	427	441	VLVREKYQYVFFKAN	21.05

169	DPB1*23:01	B2RH59	428	442	LVREKYQYVFFKANT	22.17
170	DPB1*23:01	B2RH59	429	443	VREKYQYVFFKANTS	22.28
171	DPB1*23:01	B2RH59	430	444	REKYQYVFFKANTSS	23.94
172	DPB1*23:01	B2RH59	431	445	EKYQYVFFKANTSSA	35.85
173	DPB1*23:01	B2RHG4	207	221	EFKFRYVNFDKETV	12.64
174	DPB1*23:01	B2RHG4	208	222	FKFRYVNFDKETVV	15.05
175	DPB1*23:01	B2RHG4	206	220	SEFKFRYVNFDKET	15.20
176	DPB1*23:01	B2RHG4	205	219	LSEFKFRYVNFDKET	18.58
177	DPB1*23:01	B2RHG4	59	73	AERLITNLYLLLLFDQ	22.20
178	DPB1*23:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	23.61
179	DPB1*23:01	B2RHG4	186	200	LNISLSEKFQIVPII	26.15
180	DPB1*23:01	B2RHG4	58	72	AAERLITNLYLLLLFD	26.31
181	DPB1*23:01	B2RHG4	60	74	ERLITNLYLLLLFDQS	27.98
182	DPB1*23:01	B2RHG4	185	199	ELNISLSEKFQIVPI	28.95
183	DPB1*23:01	B2RHG4	56	70	GSAAERLITNLYLLL	29.58
184	DPB1*23:01	B2RHG4	209	223	KFRYVNFDKETVVK	31.95
185	DPB1*23:01	B2RHG4	57	71	SAAERLITNLYLLLF	34.51
186	DPB1*23:01	B2RHG4	184	198	VELNISLSEKFQIVP	37.16
187	DPB1*23:01	B2RHG4	187	201	NISLSEKFQIVPIIV	38.59
188	DPB1*23:01	B2RHG4	183	197	KVELNISLSEKFQIV	48.69
189	DPB1*33:01	A0PA81	277	291	YIDLRGANLNVLSV	42.13
190	DPB1*33:01	A0PA81	244	258	HLKLYAYGQELNIS	48.88
191	DPB1*33:01	B2RH54	102	116	AMELVGKTLAEVKAL	32.03
192	DPB1*33:01	B2RH54	186	200	YDNIYTFVPEKIYGL	37.99
193	DPB1*33:01	B2RH54	103	117	MELVGKTLAEVKALT	39.06
194	DPB1*33:01	B2RH54	187	201	DNIYTFVPEKIYGLI	41.19
195	DPB1*33:01	B2RH54	188	202	NIYTFVPEKIYGLIA	42.38
196	DPB1*33:01	B2RH54	101	115	GAMELVGKTLAEVKA	47.55
197	DPB1*33:01	B2RH57	414	428	NGIGIQRRTNLFFTV	32.87
198	DPB1*33:01	B2RH57	415	429	GIGIQRRTNLFFTV	34.42
199	DPB1*33:01	B2RH57	416	430	IGIQRRTNLFFTV	44.27
200	DPB1*33:01	B2RH57	418	432	IQRRTNLFFTV	44.44
201	DPB1*33:01	B2RH57	417	431	GIQRRTNLFFTV	45.97
202	DPB1*33:01	B2RH58	544	558	QDHWEEYTLNPLRLI	14.96
203	DPB1*33:01	B2RH58	545	559	DHWEEYTLNPLRLIY	15.19
204	DPB1*33:01	B2RH58	546	560	HWEYTLNPLRLIYH	16.47
205	DPB1*33:01	B2RH58	34	48	MNETSSLFLQVQPN	17.73
206	DPB1*33:01	B2RH58	33	47	DMNETSSLFLQVQPY	20.13
207	DPB1*33:01	B2RH58	543	557	VQDHWEEYTLNPLRL	20.99
208	DPB1*33:01	B2RH58	31	45	ESDMNETSSLFLQVQ	22.80
209	DPB1*33:01	B2RH58	547	561	WEYTLNPLRLIYHS	23.90
210	DPB1*33:01	B2RH58	32	46	SDMNETSSLFLQVQP	24.80
211	DPB1*33:01	B2RH58	35	49	NETSSLFLQVQPNQ	29.81

212	DPB1*33:01	B2RH58	30	44	IESDMNETSSLFLQV	30.00
213	DPB1*33:01	B2RH58	16	30	FLLVGFLFGCVREDI	30.11
214	DPB1*33:01	B2RH58	15	29	LFLLVGFLFGCVRED	32.57
215	DPB1*33:01	B2RH58	542	556	LVQDHWEYYTLNPLR	37.31
216	DPB1*33:01	B2RH58	189	203	LKKPVLNISDYELVG	37.43
217	DPB1*33:01	B2RH58	17	31	LLVGFLFGCVREDIE	38.43
218	DPB1*33:01	B2RH58	548	562	EYYTLNPLRLIYHSN	42.13
219	DPB1*33:01	B2RH58	188	202	RLKKPVLNISDYELV	44.57
220	DPB1*33:01	B2RH58	14	28	ILFLLVGFLFGCVRE	46.04
221	DPB1*33:01	B2RH58	360	374	IELDYFSSSHSLPPA	46.66
222	DPB1*33:01	B2RH58	541	555	TLVQDHWEYYTLNPL	46.99
223	DPB1*33:01	B2RH58	190	204	KKPVLNISDYELVGD	48.96
224	DPB1*33:01	B2RH59	427	441	VLVREKYQYVFFKAN	8.33
225	DPB1*33:01	B2RH59	428	442	LVREKYQYVFFKANT	9.82
226	DPB1*33:01	B2RH59	429	443	VREKYQYVFFKANTS	10.26
227	DPB1*33:01	B2RH59	430	444	REKYQYVFFKANTSS	10.93
228	DPB1*33:01	B2RH59	431	445	EKYQYVFFKANTSSA	13.49
229	DPB1*33:01	B2RH59	425	439	VTVLVREKYQYVFFK	16.13
230	DPB1*33:01	B2RH59	426	440	TVLVREKYQYVFFKA	17.30
231	DPB1*33:01	B2RH59	424	438	SVTVLVREKYQYVFF	18.00
232	DPB1*33:01	B2RH59	432	446	KYQYVFFKANTSSAE	19.71
233	DPB1*33:01	B2RH59	423	437	RSVTVLVREKYQYVF	21.87
234	DPB1*33:01	B2RH59	314	328	NNIFLSAEVQALPAF	24.11
235	DPB1*33:01	B2RH59	280	294	RYNITRNHFYKMILK	29.15
236	DPB1*33:01	B2RH59	315	329	NIFLSAEVQALPAFS	31.06
237	DPB1*33:01	B2RH59	470	484	DVLNAALLPITFKVY	31.24
238	DPB1*33:01	B2RH59	313	327	ANNIFLSAEVQALPA	31.68
239	DPB1*33:01	B2RH59	279	293	VRYNITRNHFYKMIL	31.94
240	DPB1*33:01	B2RH59	422	436	KRSVTVLVREKYQYV	32.96
241	DPB1*33:01	B2RH59	281	295	YNITRNHFYKMILKK	34.49
242	DPB1*33:01	B2RH59	471	485	VLNAALLPITFKVYT	35.75
243	DPB1*33:01	B2RH59	312	326	AANNIFLSAEVQALP	38.04
244	DPB1*33:01	B2RH59	474	488	AALLPITFKVYTEHF	38.23
245	DPB1*33:01	B2RH59	278	292	KVRYNITRNHFYKMI	39.37
246	DPB1*33:01	B2RH59	473	487	NAALLPITFKVYTEH	40.14
247	DPB1*33:01	B2RH59	472	486	LNAALLPITFKVYTE	42.01
248	DPB1*33:01	B2RH59	311	325	AAANNIFLSAEVQAL	42.67
249	DPB1*33:01	B2RH59	468	482	LPDVLNAALLPITFK	43.23
250	DPB1*33:01	B2RH59	174	188	ESKLYDASYALYNSW	43.37
251	DPB1*33:01	B2RH59	265	279	DYTYYKLDVFDTNKV	46.05
252	DPB1*33:01	B2RHG4	207	221	EFKFRYVNFDKETVY	7.66
253	DPB1*33:01	B2RHG4	208	222	FKFRYVNFDKETVYV	8.76
254	DPB1*33:01	B2RHG4	206	220	SEFKFRYVNFDKETY	9.12

255	DPB1*33:01	B2RHG4	205	219	LSEFKFRYVNFDKET	10.93
256	DPB1*33:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	11.76
257	DPB1*33:01	B2RHG4	59	73	AERLITNLYLLLFDQ	13.89
258	DPB1*33:01	B2RHG4	209	223	KFRYVNFDKETVVK	15.00
259	DPB1*33:01	B2RHG4	58	72	AAERLITNLYLLLFD	15.82
260	DPB1*33:01	B2RHG4	60	74	ERLITNLYLLLFDQS	16.13
261	DPB1*33:01	B2RHG4	186	200	LNISLSEKFQIVPII	17.38
262	DPB1*33:01	B2RHG4	1	15	MKKYLLYASLLTSVL	17.70
263	DPB1*33:01	B2RHG4	56	70	GSAAERLITNLYLLL	17.71
264	DPB1*33:01	B2RHG4	185	199	ELNISLSEKFQIVPI	18.88
265	DPB1*33:01	B2RHG4	57	71	SAAERLITNLYLLLF	19.51
266	DPB1*33:01	B2RHG4	184	198	VELNISLSEKFQIVP	22.77
267	DPB1*33:01	B2RHG4	187	201	NISLSEKFQIVPIIV	23.36
268	DPB1*33:01	B2RHG4	188	202	ISLSEKFQIVPIIVN	24.47
269	DPB1*33:01	B2RHG4	183	197	KVELNISLSEKFQIV	25.84
270	DPB1*33:01	B2RHG4	2	16	KKYLLYASLLTSVLL	26.16
271	DPB1*33:01	B2RHG4	163	177	THDFLANRLLDNVPL	26.36
272	DPB1*33:01	B2RHG4	270	284	GKVTALRIVTYLNER	28.20
273	DPB1*33:01	B2RHG4	271	285	KVTALRIVTYLNERD	30.45
274	DPB1*33:01	B2RHG4	61	75	RLITNLYLLLFDQSG	31.03
275	DPB1*33:01	B2RHG4	272	286	VTALRIVTYLNERDS	31.40
276	DPB1*33:01	B2RHG4	201	215	VNGSLSEFKFRYVNF	31.74
277	DPB1*33:01	B2RHG4	164	178	HDFLANRLLDNVPLV	32.03
278	DPB1*33:01	B2RHG4	203	217	GSLSEFKFRYVNFDK	34.83
279	DPB1*33:01	B2RHG4	202	216	NGSLSEFKFRYVNFD	34.94
280	DPB1*33:01	B2RHG4	162	176	KTHDFLANRLLDNVP	35.55
281	DPB1*33:01	B2RHG4	161	175	NKTHDFLANRLLDNV	36.39
282	DPB1*33:01	B2RHG4	273	287	TALRIVTYLNERDSK	40.22
283	DPB1*33:01	B2RHG4	200	214	IVNGSLSEFKFRYVN	43.85
284	DPB1*33:01	B2RHG4	199	213	IIVNGSLSEFKFRYV	44.32
285	DPB1*33:01	B2RHG4	3	17	KYLLYASLLTSVLLF	45.63
286	DPB1*33:01	B2RHG4	269	283	NGKVTALRIVTYLNE	47.82
287	DPB1*33:01	B2RHG4	165	179	DFLANRLLDNVPLVR	48.01
288	DPB1*34:01	B2RH59	427	441	VLVREKYQYVFFKAN	48.16
289	DPB1*34:01	B2RH59	429	443	VREKYQYVFFKANTS	49.90
290	DPB1*34:01	B2RHG4	207	221	EFKFRYVNFDKETV	38.28
291	DPB1*34:01	B2RHG4	206	220	SEFKFRYVNFDKETV	45.20
292	DPB1*34:01	B2RHG4	208	222	FKFRYVNFDKETVV	49.15
293	DPB1*39:01	B2RH58	34	48	MNETSSLFLQVQPYN	38.58
294	DPB1*39:01	B2RH58	33	47	DMNETSSLFLQVQPY	43.05
295	DPB1*39:01	B2RH59	427	441	VLVREKYQYVFFKAN	21.05
296	DPB1*39:01	B2RH59	428	442	LVREKYQYVFFKANT	22.17
297	DPB1*39:01	B2RH59	429	443	VREKYQYVFFKANTS	22.28

298	DPB1*39:01	B2RH59	430	444	REKYQYVFFKANTSS	23.94
299	DPB1*39:01	B2RH59	431	445	EKYQYVFFKANTSSA	35.85
300	DPB1*39:01	B2RHG4	207	221	EFKFRYVNFDKETVYV	12.64
301	DPB1*39:01	B2RHG4	208	222	FKFRYVNFDKETVYV	15.05
302	DPB1*39:01	B2RHG4	206	220	SEFKFRYVNFDKETY	15.20
303	DPB1*39:01	B2RHG4	205	219	LSEFKFRYVNFDKET	18.58
304	DPB1*39:01	B2RHG4	59	73	AERLITNLYLLLLFDQ	22.20
305	DPB1*39:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	23.61
306	DPB1*39:01	B2RHG4	186	200	LNISLSEKFQIVPII	26.15
307	DPB1*39:01	B2RHG4	58	72	AAERLITNLYLLLLFD	26.31
308	DPB1*39:01	B2RHG4	60	74	ERLITNLYLLLLFDQS	27.98
309	DPB1*39:01	B2RHG4	185	199	ELNISLSEKFQIVPI	28.95
310	DPB1*39:01	B2RHG4	56	70	GSAAERLITNLYLLL	29.58
311	DPB1*39:01	B2RHG4	209	223	KFRYVNFDKETVYVK	31.95
312	DPB1*39:01	B2RHG4	57	71	SAAERLITNLYLLLF	34.51
313	DPB1*39:01	B2RHG4	184	198	VELNISLSEKFQIVP	37.16
314	DPB1*39:01	B2RHG4	187	201	NISLSEKFQIVPIIV	38.59
315	DPB1*39:01	B2RHG4	183	197	KVELNISLSEKFQIV	48.69
316	DPB1*40:01	B2RHG4	207	221	EFKFRYVNFDKETVYV	44.36
317	DPB1*41:01	B2RH59	429	443	VREKYQYVFFKANTS	18.55
318	DPB1*41:01	B2RH59	430	444	REKYQYVFFKANTSS	18.91
319	DPB1*41:01	B2RH59	428	442	LVREKYQYVFFKANT	19.99
320	DPB1*41:01	B2RH59	431	445	EKYQYVFFKANTSSA	25.51
321	DPB1*41:01	B2RH59	427	441	VLVREKYQYVFFKAN	26.05
322	DPB1*41:01	B2RH59	432	446	KYQYVFFKANTSSAE	34.81
323	DPB1*41:01	B2RHG4	207	221	EFKFRYVNFDKETVYV	48.33
324	DPB1*46:01	B2RH54	102	116	AMELVGKTLAEVKAL	49.18
325	DPB1*46:01	B2RH58	34	48	MNETSSLFLQVQPN	40.38
326	DPB1*46:01	B2RH58	545	559	DHWEYTLNPLRLIY	48.60
327	DPB1*46:01	B2RH58	546	560	HWEYTLNPLRLIYH	48.99
328	DPB1*46:01	B2RH59	427	441	VLVREKYQYVFFKAN	15.24
329	DPB1*46:01	B2RH59	428	442	LVREKYQYVFFKANT	15.35
330	DPB1*46:01	B2RH59	429	443	VREKYQYVFFKANTS	15.75
331	DPB1*46:01	B2RH59	430	444	REKYQYVFFKANTSS	16.22
332	DPB1*46:01	B2RH59	431	445	EKYQYVFFKANTSSA	21.06
333	DPB1*46:01	B2RH59	432	446	KYQYVFFKANTSSAE	29.48
334	DPB1*46:01	B2RH59	425	439	VTVLVREKYQYVFFK	32.92
335	DPB1*46:01	B2RH59	426	440	TVLVREKYQYVFFKA	35.79
336	DPB1*46:01	B2RH59	424	438	SVTVLVREKYQYVFF	41.96
337	DPB1*46:01	B2RHG4	207	221	EFKFRYVNFDKETVYV	19.77
338	DPB1*46:01	B2RHG4	208	222	FKFRYVNFDKETVYV	23.31
339	DPB1*46:01	B2RHG4	206	220	SEFKFRYVNFDKETY	25.38
340	DPB1*46:01	B2RHG4	59	73	AERLITNLYLLLLFDQ	29.33

341	DPB1*46:01	B2RHG4	205	219	LSEFKFRYVNFDKET	32.69
342	DPB1*46:01	B2RHG4	186	200	LNISLSEKFQIVPII	35.60
343	DPB1*46:01	B2RHG4	58	72	AAERLITNLYLLFLD	36.23
344	DPB1*46:01	B2RHG4	60	74	ERLITNLYLLFLDQS	36.27
345	DPB1*46:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	39.39
346	DPB1*46:01	B2RHG4	185	199	ELNISLSEKFQIVPI	40.61
347	DPB1*46:01	B2RHG4	1	15	MKKYLLYASLLTSVL	41.68
348	DPB1*46:01	B2RHG4	163	177	THDFLANRLLDNVPL	42.83
349	DPB1*46:01	B2RHG4	56	70	GSAAERLITNLYLLL	44.85
350	DPB1*46:01	B2RHG4	209	223	KFRYVNFDKETVVK	46.86
351	DPB1*46:01	B2RHG4	187	201	NISLSEKFQIVPIIV	48.10
352	DPB1*46:01	B2RHG4	57	71	SAAERLITNLYLLLF	49.27
353	DPB1*47:01	B2RH54	102	116	AMELVGKTLAEVKAL	48.36
354	DPB1*47:01	B2RH58	34	48	MNETSSLFLQVQPYN	37.66
355	DPB1*47:01	B2RH58	545	559	DHWEYYTLNPLRLIY	38.19
356	DPB1*47:01	B2RH58	544	558	QDHWEEYTLNPLRLI	39.25
357	DPB1*47:01	B2RH58	546	560	HWEYYTLNPLRLIYH	41.48
358	DPB1*47:01	B2RH58	33	47	DMNETSSLFLQVQPY	41.57
359	DPB1*47:01	B2RH58	31	45	ESDMNETSSLFLQVQ	49.76
360	DPB1*47:01	B2RH59	427	441	VLVREKYQYVFFKAN	14.52
361	DPB1*47:01	B2RH59	428	442	LVREKYQYVFFKANT	14.68
362	DPB1*47:01	B2RH59	429	443	VREKYQYVFFKANTS	14.91
363	DPB1*47:01	B2RH59	430	444	REKYQYVFFKANTSS	15.42
364	DPB1*47:01	B2RH59	431	445	EKYQYVFFKANTSSA	21.18
365	DPB1*47:01	B2RH59	432	446	KYQYVFFKANTSSAE	32.05
366	DPB1*47:01	B2RH59	425	439	VTVLVREKYQYVFFK	35.58
367	DPB1*47:01	B2RH59	426	440	TVLVREKYQYVFFKA	38.34
368	DPB1*47:01	B2RH59	424	438	SVTVLVREKYQYVFF	44.93
369	DPB1*47:01	B2RHG4	207	221	EFKFRYVNFDKETV	17.81
370	DPB1*47:01	B2RHG4	206	220	SEFKFRYVNFDKET	22.16
371	DPB1*47:01	B2RHG4	208	222	FKFRYVNFDKETV	22.59
372	DPB1*47:01	B2RHG4	205	219	LSEFKFRYVNFDKET	26.68
373	DPB1*47:01	B2RHG4	59	73	AERLITNLYLLFLDQ	26.76
374	DPB1*47:01	B2RHG4	186	200	LNISLSEKFQIVPII	29.26
375	DPB1*47:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	31.12
376	DPB1*47:01	B2RHG4	60	74	ERLITNLYLLFLDQS	32.33
377	DPB1*47:01	B2RHG4	58	72	AAERLITNLYLLFLD	32.46
378	DPB1*47:01	B2RHG4	185	199	ELNISLSEKFQIVPI	32.77
379	DPB1*47:01	B2RHG4	1	15	MKKYLLYASLLTSVL	39.07
380	DPB1*47:01	B2RHG4	56	70	GSAAERLITNLYLLL	39.46
381	DPB1*47:01	B2RHG4	187	201	NISLSEKFQIVPIIV	40.04
382	DPB1*47:01	B2RHG4	57	71	SAAERLITNLYLLLF	41.94
383	DPB1*47:01	B2RHG4	184	198	VELNISLSEKFQIVP	44.77

384	DPB1*47:01	B2RHG4	163	177	THDFLANRLLDNVPL	45.89
385	DPB1*47:01	B2RHG4	209	223	KFRYVNFDKETYVVK	46.01
386	DPB1*47:01	B2RHG4	188	202	ISLSEKFQIVPIIVN	47.30
387	DPB1*71:01	A0PA81	277	291	YIDLRGANLNVLVSV	42.13
388	DPB1*71:01	A0PA81	244	258	HLKLYAYGQELLNIS	48.88
389	DPB1*71:01	B2RH54	102	116	AMELVGKTAEVKAL	32.03
390	DPB1*71:01	B2RH54	186	200	YDNIYTFVPEKIYGL	37.99
391	DPB1*71:01	B2RH54	103	117	MELVGKTAEVKALT	39.06
392	DPB1*71:01	B2RH54	187	201	DNIYTFVPEKIYGLI	41.19
393	DPB1*71:01	B2RH54	188	202	NIYTFVPEKIYGLIA	42.38
394	DPB1*71:01	B2RH54	101	115	GAMELVGKTAEVKA	47.55
395	DPB1*71:01	B2RH57	414	428	NGIGIQRRTNLFFTV	32.87
396	DPB1*71:01	B2RH57	415	429	GIGIQRRTNLFFTV	34.42
397	DPB1*71:01	B2RH57	416	430	IGIQRRTNLFFTV	44.27
398	DPB1*71:01	B2RH57	418	432	IQRRTNLFFTV	44.44
399	DPB1*71:01	B2RH57	417	431	GIQRRTNLFFTV	45.97
400	DPB1*71:01	B2RH58	544	558	QDHWEEYTLNPLRLI	14.96
401	DPB1*71:01	B2RH58	545	559	DHWEEYTLNPLRLIY	15.19
402	DPB1*71:01	B2RH58	546	560	HWEYTLNPLRLIYH	16.47
403	DPB1*71:01	B2RH58	34	48	MNETSSLFLQVQPYN	17.73
404	DPB1*71:01	B2RH58	33	47	DMNETSSLFLQVQPY	20.13
405	DPB1*71:01	B2RH58	543	557	VQDHWEEYTLNPLRL	20.99
406	DPB1*71:01	B2RH58	31	45	ESDMNETSSLFLQVQ	22.80
407	DPB1*71:01	B2RH58	547	561	WEYTLNPLRLIYHS	23.90
408	DPB1*71:01	B2RH58	32	46	SDMNETSSLFLQVQP	24.80
409	DPB1*71:01	B2RH58	35	49	NETSSLFLQVQPYNQ	29.81
410	DPB1*71:01	B2RH58	30	44	IESDMNETSSLFLQV	30.00
411	DPB1*71:01	B2RH58	16	30	FLLVGFLFGCVREDI	30.11
412	DPB1*71:01	B2RH58	15	29	LFLVGFLFGCVRED	32.57
413	DPB1*71:01	B2RH58	542	556	LVQDHWEEYTLNPLR	37.31
414	DPB1*71:01	B2RH58	189	203	LKKPVLNISDYELVG	37.43
415	DPB1*71:01	B2RH58	17	31	LLVGFLFGCVREDIE	38.43
416	DPB1*71:01	B2RH58	548	562	EYTLNPLRLIYHSN	42.13
417	DPB1*71:01	B2RH58	188	202	RLKKPVLNISDYELV	44.57
418	DPB1*71:01	B2RH58	14	28	ILFLVGFLFGCVRE	46.04
419	DPB1*71:01	B2RH58	360	374	IELDYFSSHSLPPA	46.66
420	DPB1*71:01	B2RH58	541	555	TLVQDHWEEYTLNPL	46.99
421	DPB1*71:01	B2RH58	190	204	KKPVLNISDYELVGD	48.96
422	DPB1*71:01	B2RH59	427	441	VLVREKYQYVFFKAN	8.33
423	DPB1*71:01	B2RH59	428	442	LVREKYQYVFFKANT	9.82
424	DPB1*71:01	B2RH59	429	443	VREKYQYVFFKANTS	10.26
425	DPB1*71:01	B2RH59	430	444	REKYQYVFFKANTSS	10.93
426	DPB1*71:01	B2RH59	431	445	EKYQYVFFKANTSSA	13.49

427	DPB1*71:01	B2RH59	425	439	VTVLVREKYQYVFFK	16.13
428	DPB1*71:01	B2RH59	426	440	TVLVREKYQYVFFKA	17.30
429	DPB1*71:01	B2RH59	424	438	SVTVLVREKYQYVFF	18.00
430	DPB1*71:01	B2RH59	432	446	KYQYVFFKANTSSAE	19.71
431	DPB1*71:01	B2RH59	423	437	RSVTVLVREKYQYVF	21.87
432	DPB1*71:01	B2RH59	314	328	NNIFLSAEVQALPAF	24.11
433	DPB1*71:01	B2RH59	280	294	RYNITRNHFYKMILK	29.15
434	DPB1*71:01	B2RH59	315	329	NIFLSAEVQALPAFS	31.06
435	DPB1*71:01	B2RH59	470	484	DVLNAALLPITFKVY	31.24
436	DPB1*71:01	B2RH59	313	327	ANNIFLSAEVQALPA	31.68
437	DPB1*71:01	B2RH59	279	293	VRYNITRNHFYKMIL	31.94
438	DPB1*71:01	B2RH59	422	436	KRSVTVLVREKYQYV	32.96
439	DPB1*71:01	B2RH59	281	295	YNITRNHFYKMILKK	34.49
440	DPB1*71:01	B2RH59	471	485	VLNAALLPITFKVYT	35.75
441	DPB1*71:01	B2RH59	312	326	AANNIFLSAEVQALP	38.04
442	DPB1*71:01	B2RH59	474	488	AALLPITFKVYTEHF	38.23
443	DPB1*71:01	B2RH59	278	292	KVRYNITRNHFYKMI	39.37
444	DPB1*71:01	B2RH59	473	487	NAALLPITFKVYTEH	40.14
445	DPB1*71:01	B2RH59	472	486	LNAALLPITFKVYTE	42.01
446	DPB1*71:01	B2RH59	311	325	AAANNIFLSAEVQAL	42.67
447	DPB1*71:01	B2RH59	468	482	LPDVLNAALLPITFK	43.23
448	DPB1*71:01	B2RH59	174	188	ESKLYDASYALYNSW	43.37
449	DPB1*71:01	B2RH59	265	279	DYTTYKLDVFDTNKV	46.05
450	DPB1*71:01	B2RHG4	207	221	EFKFRYVNFDKETVY	7.66
451	DPB1*71:01	B2RHG4	208	222	FKFRYVNFDKETVYV	8.76
452	DPB1*71:01	B2RHG4	206	220	SEFKFRYVNFDKETY	9.12
453	DPB1*71:01	B2RHG4	205	219	LSEFKFRYVNFDKET	10.93
454	DPB1*71:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	11.76
455	DPB1*71:01	B2RHG4	59	73	AERLITNLYLLLFQDQ	13.89
456	DPB1*71:01	B2RHG4	209	223	KFRYVNFDKETVYVK	15.00
457	DPB1*71:01	B2RHG4	58	72	AAERLITNLYLLLFQD	15.82
458	DPB1*71:01	B2RHG4	60	74	ERLITNLYLLLFQDS	16.13
459	DPB1*71:01	B2RHG4	186	200	LNISLSEKFQIVPII	17.38
460	DPB1*71:01	B2RHG4	1	15	MKKYLLYASLLTSVL	17.70
461	DPB1*71:01	B2RHG4	56	70	GSAAERLITNLYLLL	17.71
462	DPB1*71:01	B2RHG4	185	199	ELNISLSEKFQIVPI	18.88
463	DPB1*71:01	B2RHG4	57	71	SAAERLITNLYLLLF	19.51
464	DPB1*71:01	B2RHG4	184	198	VELNISLSEKFQIVP	22.77
465	DPB1*71:01	B2RHG4	187	201	NISLSEKFQIVPIIV	23.36
466	DPB1*71:01	B2RHG4	188	202	ISLSEKFQIVPIIVN	24.47
467	DPB1*71:01	B2RHG4	183	197	KVELNISLSEKFQIV	25.84
468	DPB1*71:01	B2RHG4	2	16	KKYLLYASLLTSVLL	26.16
469	DPB1*71:01	B2RHG4	163	177	THDFLANRLLDNVPL	26.36

470	DPB1*71:01	B2RHG4	270	284	GKVTALRIVTYLNER	28.20
471	DPB1*71:01	B2RHG4	271	285	KVTALRIVTYLNERD	30.45
472	DPB1*71:01	B2RHG4	61	75	RLITNLYLLLFDQSG	31.03
473	DPB1*71:01	B2RHG4	272	286	VTALRIVTYLNERDS	31.40
474	DPB1*71:01	B2RHG4	201	215	VNGSLSEFKFRYVNF	31.74
475	DPB1*71:01	B2RHG4	164	178	HDFLANRLLDNVPLV	32.03
476	DPB1*71:01	B2RHG4	203	217	GSLSEFKFRYVNFDK	34.83
477	DPB1*71:01	B2RHG4	202	216	NGSLSEFKFRYVNFD	34.94
478	DPB1*71:01	B2RHG4	162	176	KTHDFLANRLLDNVP	35.55
479	DPB1*71:01	B2RHG4	161	175	NKTHDFLANRLLDNV	36.39
480	DPB1*71:01	B2RHG4	273	287	TALRIVTYLNERDSK	40.22
481	DPB1*71:01	B2RHG4	200	214	IVNGSLSEFKFRYVN	43.85
482	DPB1*71:01	B2RHG4	199	213	IIVNGSLSEFKFRYV	44.32
483	DPB1*71:01	B2RHG4	3	17	KYLLYASLLTSVLLF	45.63
484	DPB1*71:01	B2RHG4	269	283	NGKVTALRIVTYLNE	47.82
485	DPB1*71:01	B2RHG4	165	179	DFLANRLLDNVPLVR	48.01
486	DPB1*72:01	B2RH58	33	47	DMNETSSLFLQVQPY	26.56
487	DPB1*72:01	B2RH58	34	48	MNETSSLFLQVQPYN	28.94
488	DPB1*72:01	B2RH58	32	46	SDMNETSSLFLQVQP	32.58
489	DPB1*72:01	B2RH58	31	45	ESDMNETSSLFLQVQ	34.92
490	DPB1*72:01	B2RH58	545	559	DHWEYYTLNPLRLIY	44.79
491	DPB1*72:01	B2RH58	546	560	HWEYYTLNPLRLIYH	45.71
492	DPB1*72:01	B2RH58	544	558	QDHWEYYTLNPLRLI	48.51
493	DPB1*72:01	B2RH59	428	442	LVREKYQYVFFKANT	15.34
494	DPB1*72:01	B2RH59	429	443	VREKYQYVFFKANTS	15.34
495	DPB1*72:01	B2RH59	430	444	REKYQYVFFKANTSS	16.19
496	DPB1*72:01	B2RH59	427	441	VLVREKYQYVFFKAN	16.22
497	DPB1*72:01	B2RH59	431	445	EKYQYVFFKANTSSA	24.21
498	DPB1*72:01	B2RH59	432	446	KYQYVFFKANTSSAE	47.34
499	DPB1*72:01	B2RHG4	207	221	EKFRYVNFDKETV	10.42
500	DPB1*72:01	B2RHG4	206	220	SEKFRYVNFDKET	11.84
501	DPB1*72:01	B2RHG4	205	219	LSEKFRYVNFDKET	13.70
502	DPB1*72:01	B2RHG4	208	222	FKFRYVNFDKETV	13.85
503	DPB1*72:01	B2RHG4	204	218	SLSEKFRYVNFDKE	17.56
504	DPB1*72:01	B2RHG4	209	223	KFRYVNFDKETVVK	26.50
505	DPB1*72:01	B2RHG4	185	199	ELNISLSEKFQIVPI	28.32
506	DPB1*72:01	B2RHG4	186	200	LNISLSEKFQIVPII	28.93
507	DPB1*72:01	B2RHG4	184	198	VELNISLSEKFQIVP	33.01
508	DPB1*72:01	B2RHG4	59	73	AERLITNLYLLLFDQ	36.46
509	DPB1*72:01	B2RHG4	187	201	NISLSEKFQIVPIV	37.42
510	DPB1*72:01	B2RHG4	58	72	AAERLITNLYLLLFD	45.17
511	DPB1*72:01	B2RHG4	183	197	KVELNISLSEKFQIV	45.75
512	DPB1*72:01	B2RHG4	60	74	ERLITNLYLLLFDQS	48.11

513	DPB1*72:01	B2RHG4	163	177	THDFLANRLLDNVPL	49.28
514	DPB1*72:01	B2RHG4	56	70	GSAAERLITNLYLLL	49.84
515	DPB1*81:01	B2RH54	102	116	AMELVGKTLAEVKAL	49.18
516	DPB1*81:01	B2RH58	34	48	MNETSSLFLQVQPYN	40.38
517	DPB1*81:01	B2RH58	545	559	DHWEYYTLNPLRLIY	48.60
518	DPB1*81:01	B2RH58	546	560	HWEYYTLNPLRLIYH	48.99
519	DPB1*81:01	B2RH59	427	441	VLVREKYQYVFFKAN	15.24
520	DPB1*81:01	B2RH59	428	442	LVREKYQYVFFKANT	15.35
521	DPB1*81:01	B2RH59	429	443	VREKYQYVFFKANTS	15.75
522	DPB1*81:01	B2RH59	430	444	REKYQYVFFKANTSS	16.22
523	DPB1*81:01	B2RH59	431	445	EKYQYVFFKANTSSA	21.06
524	DPB1*81:01	B2RH59	432	446	KYQYVFFKANTSSAE	29.48
525	DPB1*81:01	B2RH59	425	439	VTVLVREKYQYVFFK	32.92
526	DPB1*81:01	B2RH59	426	440	TVLVREKYQYVFFKA	35.79
527	DPB1*81:01	B2RH59	424	438	SVTVLVREKYQYVFF	41.96
528	DPB1*81:01	B2RHG4	207	221	EFKFRYVNFDKETVY	19.77
529	DPB1*81:01	B2RHG4	208	222	FKFRYVNFDKETVYV	23.31
530	DPB1*81:01	B2RHG4	206	220	SEFKFRYVNFDKETV	25.38
531	DPB1*81:01	B2RHG4	59	73	AERLITNLYLLLLFDQ	29.33
532	DPB1*81:01	B2RHG4	205	219	LSEFKFRYVNFDKET	32.69
533	DPB1*81:01	B2RHG4	186	200	LNISLSEKFQIVPII	35.60
534	DPB1*81:01	B2RHG4	58	72	AAERLITNLYLLLLFD	36.23
535	DPB1*81:01	B2RHG4	60	74	ERLITNLYLLLLFDQS	36.27
536	DPB1*81:01	B2RHG4	204	218	SLSEFKFRYVNFDKE	39.39
537	DPB1*81:01	B2RHG4	185	199	ELNISLSEKFQIVPI	40.61
538	DPB1*81:01	B2RHG4	1	15	MKKYLLYASLLTSVL	41.68
539	DPB1*81:01	B2RHG4	163	177	THDFLANRLLDNVPL	42.83
540	DPB1*81:01	B2RHG4	56	70	GSAAERLITNLYLLL	44.85
541	DPB1*81:01	B2RHG4	209	223	KFRYVNFDKETVVK	46.86
542	DPB1*81:01	B2RHG4	187	201	NISLSEKFQIVPIIV	48.10
543	DPB1*81:01	B2RHG4	57	71	SAAERLITNLYLLLF	49.27
544	DPB1*91:01	B2RHG4	177	191	LVRAIAKVELNISLS	41.72
545	DPB1*91:01	B2RHG4	176	190	PLVRAIAKVELNISL	47.76
546	DRB1*01:01	A0PA81	263	277	GVPFIPVIGKMLNIY	4.38
547	DRB1*01:01	A0PA81	274	288	LNIIYIDLRGANLNV	4.40
548	DRB1*01:01	A0PA81	262	276	DGVPFIPVIGKMLNI	4.80
549	DRB1*01:01	A0PA81	273	287	MLNIYIDLRGANLNV	4.83
550	DRB1*01:01	A0PA81	275	289	NIYIDLRGANLNLV	4.90
551	DRB1*01:01	A0PA81	264	278	VFPFIPVIGKMLNIYI	5.08
552	DRB1*01:01	A0PA81	261	275	SDGVPFIPVIGKMLN	5.66
553	DRB1*01:01	A0PA81	272	286	KMLNIYIDLRGANLN	5.75
554	DRB1*01:01	A0PA81	276	290	IYIDLRGANLNLVLS	6.41
555	DRB1*01:01	A0PA81	119	133	KDLFFRLSSTDGIAQ	7.14

556	DRB1*01:01	AOPA81	265	279	PFIPVIGKMLNIYID	7.41
557	DRB1*01:01	AOPA81	118	132	VKDLFFRLSSTDGIA	7.92
558	DRB1*01:01	AOPA81	203	217	YTGLAELIGNAVQYR	8.40
559	DRB1*01:01	AOPA81	271	285	GKMLNIYIDLRGANL	9.44
560	DRB1*01:01	AOPA81	120	134	DLFFRLSSTDGIAQS	10.07
561	DRB1*01:01	AOPA81	260	274	GSDGVPFIPVIGKML	10.27
562	DRB1*01:01	AOPA81	202	216	TYTGLAELIGNAVQY	11.37
563	DRB1*01:01	AOPA81	204	218	TGLAELIGNAVQYRP	11.53
564	DRB1*01:01	AOPA81	117	131	NVKDLFFRLSSTDGI	12.21
565	DRB1*01:01	AOPA81	121	135	LFFRLSSTDGIAQSP	14.67
566	DRB1*01:01	AOPA81	201	215	DTYTGLAELIGNAVQ	16.98
567	DRB1*01:01	AOPA81	205	219	GLAELIGNAVQYRPD	18.00
568	DRB1*01:01	AOPA81	267	281	IPVIGKMLNIYIDLR	20.45
569	DRB1*01:01	AOPA81	266	280	FIPVIGKMLNIYIDL	20.79
570	DRB1*01:01	AOPA81	70	84	IDRLMDAAQVAARK	22.18
571	DRB1*01:01	AOPA81	268	282	PVIGKMLNIYIDLRG	23.63
572	DRB1*01:01	AOPA81	277	291	YIDLRGANLNVLVSV	25.87
573	DRB1*01:01	AOPA81	69	83	RIDRLMDAAQVAAR	26.64
574	DRB1*01:01	AOPA81	285	299	LNVLVSVPWDVVQQ	26.72
575	DRB1*01:01	AOPA81	136	150	GDLFSGVLTCPIEYG	27.61
576	DRB1*01:01	AOPA81	160	174	VDIYRRTAQVHIIIR	29.19
577	DRB1*01:01	AOPA81	135	149	PGDLFSGVLTCPIEY	29.59
578	DRB1*01:01	AOPA81	286	300	NVLVSVPWDVVQQY	32.64
579	DRB1*01:01	AOPA81	71	85	DRLMDAAQVAARKP	33.55
580	DRB1*01:01	AOPA81	159	173	TVDIYRRTAQVHIII	35.65
581	DRB1*01:01	AOPA81	137	151	DLFSGVLTCPIEYGS	36.78
582	DRB1*01:01	AOPA81	116	130	QNVKDLFFRLSSTDG	36.79
583	DRB1*01:01	AOPA81	284	298	NLNVLSVPWDVVQ	37.32
584	DRB1*01:01	AOPA81	161	175	DIYRRTAQVHIIIRG	38.21
585	DRB1*01:01	AOPA81	68	82	RRIDRLMDAAQVAA	38.98
586	DRB1*01:01	AOPA81	72	86	RLMDAAQVAARKPI	42.12
587	DRB1*01:01	AOPA81	200	214	PDTYTGLAELIGNAV	45.96
588	DRB1*01:01	AOPA81	269	283	VIGKMLNIYIDLRGA	46.16
589	DRB1*01:01	AOPA81	134	148	SPGDLFSGVLTCPIE	48.20
590	DRB1*01:01	AOPA81	162	176	IYRRTAQVHIIIRGY	48.86
591	DRB1*01:01	AOPA81	158	172	QTVDIYRRTAQVHII	49.84
592	DRB1*01:01	B2RH54	4	18	TKFFLLGLAALAMTA	7.71
593	DRB1*01:01	B2RH54	163	177	PLKIKRVHARMAFTE	8.54
594	DRB1*01:01	B2RH54	3	17	KTKFFLLGLAALAMT	8.94
595	DRB1*01:01	B2RH54	162	176	DPLKIKRVHARMAFT	9.12
596	DRB1*01:01	B2RH54	164	178	LKIKRVHARMAFTEI	10.04
597	DRB1*01:01	B2RH54	2	16	KKTKFFLLGLAALAM	11.39
598	DRB1*01:01	B2RH54	5	19	KFFLLGLAALAMTAC	11.66

599	DRB1*01:01	B2RH54	161	175	NDPLKIKRVHARMAF	11.87
600	DRB1*01:01	B2RH54	91	105	QRTLVMANTGAMEL	12.44
601	DRB1*01:01	B2RH54	92	106	RTLVMANTGAMELV	14.37
602	DRB1*01:01	B2RH54	172	186	RMAFTEIKVQMSAAY	14.39
603	DRB1*01:01	B2RH54	1	15	MKKTKFFLLGLAALA	14.55
604	DRB1*01:01	B2RH54	90	104	GQRTLVMANTGAME	14.91
605	DRB1*01:01	B2RH54	189	203	IYTFVPEKIYGLIAK	16.61
606	DRB1*01:01	B2RH54	165	179	KIKRVHARMAFTEIK	16.70
607	DRB1*01:01	B2RH54	89	103	AGQRTLVMANTGAM	17.19
608	DRB1*01:01	B2RH54	171	185	ARMAFTEIKVQMSAA	19.55
609	DRB1*01:01	B2RH54	108	122	KTAEVKALTTELTA	21.05
610	DRB1*01:01	B2RH54	109	123	TLAEVKALTTELTAE	21.18
611	DRB1*01:01	B2RH54	173	187	MAFTEIKVQMSAAYD	21.19
612	DRB1*01:01	B2RH54	188	202	NIYTFVPEKIYGLIA	21.45
613	DRB1*01:01	B2RH54	110	124	LAEVKALTTELTAEN	21.75
614	DRB1*01:01	B2RH54	190	204	YTFVPEKIYGLIAKK	22.31
615	DRB1*01:01	B2RH54	174	188	AFTEIKVQMSAAYDN	28.05
616	DRB1*01:01	B2RH54	93	107	TLVMANTGAMELVG	30.10
617	DRB1*01:01	B2RH54	170	184	HARMAFTEIKVQMSA	30.10
618	DRB1*01:01	B2RH54	128	142	AGLIMTAEPKTIVLK	31.11
619	DRB1*01:01	B2RH54	210	224	GATLVNADANYLTGS	31.24
620	DRB1*01:01	B2RH54	187	201	DNIYTFVPEKIYGLI	31.49
621	DRB1*01:01	B2RH54	36	50	SVVLKTSNSNRAFGV	31.98
622	DRB1*01:01	B2RH54	160	174	ENDPLKIKRVHARMA	32.17
623	DRB1*01:01	B2RH54	111	125	AEVKALTTELTAENQ	33.26
624	DRB1*01:01	B2RH54	6	20	FFLLGLAALAMTACN	34.22
625	DRB1*01:01	B2RH54	175	189	FTEIKVQMSAAYDNI	35.11
626	DRB1*01:01	B2RH54	211	225	ATLVNADANYLTGSL	35.65
627	DRB1*01:01	B2RH54	7	21	FLLGLAALAMTACNK	36.53
628	DRB1*01:01	B2RH54	309	323	KTYYPVLVNFNSNNY	36.56
629	DRB1*01:01	B2RH54	209	223	FGATLVNADANYLTG	36.97
630	DRB1*01:01	B2RH54	107	121	GKTLAEVKALTTELT	38.04
631	DRB1*01:01	B2RH54	127	141	AAGLIMTAEPKTIVL	38.39
632	DRB1*01:01	B2RH54	191	205	TFVPEKIYGLIAKKQ	39.82
633	DRB1*01:01	B2RH54	129	143	GLIMTAEPKTIVLKA	40.22
634	DRB1*01:01	B2RH54	308	322	GKTYYPVLVNFNSNN	40.22
635	DRB1*01:01	B2RH54	88	102	SAGQRTLVMANTGA	42.86
636	DRB1*01:01	B2RH54	137	151	KTIVLKAGKNYIGYS	43.38
637	DRB1*01:01	B2RH54	256	270	QGFYVLENDYSANGG	43.58
638	DRB1*01:01	B2RH54	35	49	ISVVLKTSNSNRAFG	44.15
639	DRB1*01:01	B2RH54	307	321	EGKTYYPVLVNFNSN	45.07
640	DRB1*01:01	B2RH54	255	269	PQGFYVLENDYSANG	45.33
641	DRB1*01:01	B2RH54	254	268	APQGFYVLENDYSAN	45.39

642	DRB1*01:01	B2RH54	195	209	EKIYGLIAKKQSNLF	45.67
643	DRB1*01:01	B2RH54	186	200	YDNIYTFVPEKIYGL	47.16
644	DRB1*01:01	B2RH54	208	222	LFGATLVNADANYLT	47.54
645	DRB1*01:01	B2RH54	82	96	VEDIKCSAGQRTLTVV	47.95
646	DRB1*01:01	B2RH54	194	208	PEKIYGLIAKKQSNL	48.06
647	DRB1*01:01	B2RH54	37	51	VVLKTSNSNRAFGVG	48.62
648	DRB1*01:01	B2RH57	405	419	TIKVKALKPNGIGIQ	8.11
649	DRB1*01:01	B2RH57	404	418	YTIKVKALKPNGIGI	8.36
650	DRB1*01:01	B2RH57	337	351	LVPYVAEINPHAVIT	8.46
651	DRB1*01:01	B2RH57	336	350	FLVPYVAEINPHAVI	8.91
652	DRB1*01:01	B2RH57	406	420	IKVKALKPNGIGIQR	9.19
653	DRB1*01:01	B2RH57	421	435	RTNLFFTVDGKKVIL	9.51
654	DRB1*01:01	B2RH57	338	352	VPYVAEINPHAVITQ	10.54
655	DRB1*01:01	B2RH57	422	436	TNLFFTVDGKKVILD	10.93
656	DRB1*01:01	B2RH57	403	417	VYTIKVKALKPNGIG	11.72
657	DRB1*01:01	B2RH57	335	349	GFLVPYVAEINPHAV	11.95
658	DRB1*01:01	B2RH57	355	369	VVTFENSLSFTVRIK	12.12
659	DRB1*01:01	B2RH57	423	437	NLFFTVDGKKVILDK	12.99
660	DRB1*01:01	B2RH57	239	253	QSIIQASAPLYVYEN	13.00
661	DRB1*01:01	B2RH57	238	252	AQSIIQASAPLYVYE	13.09
662	DRB1*01:01	B2RH57	420	434	RRTNLFFTVDGKKVI	13.17
663	DRB1*01:01	B2RH57	331	345	NLDYGFLVPYVAEIN	14.02
664	DRB1*01:01	B2RH57	237	251	SAQSIIQASAPLYVY	14.18
665	DRB1*01:01	B2RH57	2	16	KMKYFHHPSGLLPRL	14.46
666	DRB1*01:01	B2RH57	330	344	ENLDYGFLVPYVAEI	15.46
667	DRB1*01:01	B2RH57	332	346	LDYGFLVPYVAEINP	15.74
668	DRB1*01:01	B2RH57	407	421	KVKALKPNGIGIQRR	15.75
669	DRB1*01:01	B2RH57	356	370	VTFENSLSFTVRIKG	15.84
670	DRB1*01:01	B2RH57	339	353	PYVAEINPHAVITQD	16.39
671	DRB1*01:01	B2RH57	198	212	TKVQILRNAKNSRLL	17.49
672	DRB1*01:01	B2RH57	199	213	KVQILRNAKNSRLL	17.53
673	DRB1*01:01	B2RH57	1	15	MKMKYFHHPSGLLPRL	18.33
674	DRB1*01:01	B2RH57	200	214	VQILRNAKNSRLL	18.44
675	DRB1*01:01	B2RH57	3	17	MKYFHHPSGLLPRL	18.76
676	DRB1*01:01	B2RH57	240	254	SIIQASAPLYVYENI	18.85
677	DRB1*01:01	B2RH57	197	211	ITKVQILRNAKNSRL	19.51
678	DRB1*01:01	B2RH57	329	343	VENLDYGFLVPYVAE	19.52
679	DRB1*01:01	B2RH57	354	368	NVVTFENSLSFTVRI	20.34
680	DRB1*01:01	B2RH57	402	416	TVYTIKVKALKPNGI	21.39
681	DRB1*01:01	B2RH57	424	438	LFFTVDGKKVILDKN	21.54
682	DRB1*01:01	B2RH57	334	348	YGFLVPYVAEINPHA	21.61
683	DRB1*01:01	B2RH57	333	347	DYGFLVPYVAEINPH	22.59
684	DRB1*01:01	B2RH57	236	250	GSAQSIIQASAPLYV	22.95

685	DRB1*01:01	B2RH57	171	185	NISLNRIA AKITLDI	23.77
686	DRB1*01:01	B2RH57	353	367	DNVVTFENSLSFTVR	24.55
687	DRB1*01:01	B2RH57	149	163	VRPFTMTGMATATLN	25.86
688	DRB1*01:01	B2RH57	4	18	KYFHHPSGLLPRLLL	27.01
689	DRB1*01:01	B2RH57	196	210	KITKVQILRNAKNSR	27.12
690	DRB1*01:01	B2RH57	192	206	SDVIKITKVQILRNA	27.19
691	DRB1*01:01	B2RH57	170	184	ANISLNRIA AKITLD	28.79
692	DRB1*01:01	B2RH57	201	215	QILRNAKNSRLLEGT	29.77
693	DRB1*01:01	B2RH57	357	371	TFENSLSFTVRIKGR	29.84
694	DRB1*01:01	B2RH57	150	164	RPFTMTGMATATLNP	30.45
695	DRB1*01:01	B2RH57	169	183	QANISLNRIA AKITL	30.64
696	DRB1*01:01	B2RH57	193	207	DVIKITKVQILRNAK	30.85
697	DRB1*01:01	B2RH57	148	162	IVRPFTMTGMATATL	31.04
698	DRB1*01:01	B2RH57	172	186	ISLNRIA AKITLDIK	32.00
699	DRB1*01:01	B2RH57	419	433	QRRTNLFFTVDGKKV	32.21
700	DRB1*01:01	B2RH57	195	209	IKITKVQILRNAKNS	34.02
701	DRB1*01:01	B2RH57	194	208	VIKITKVQILRNAKN	34.14
702	DRB1*01:01	B2RH57	328	342	TVENLDYGFLVPYVA	35.32
703	DRB1*01:01	B2RH57	191	205	GSDVIKITKVQILRN	36.21
704	DRB1*01:01	B2RH57	241	255	IIQASAPLYVYENIG	37.99
705	DRB1*01:01	B2RH57	151	165	PFTMTGMATATLNPQ	38.95
706	DRB1*01:01	B2RH57	19	33	LLLLTMGAVACTKED	40.11
707	DRB1*01:01	B2RH57	18	32	LLLLTMGAVACTKE	43.26
708	DRB1*01:01	B2RH57	312	326	MGEFSSLLLT TTVLP	43.28
709	DRB1*01:01	B2RH57	147	161	PIVRPFTMTGMATAT	43.35
710	DRB1*01:01	B2RH57	270	284	EALYNGIKTRYAYV	43.65
711	DRB1*01:01	B2RH57	111	125	RQIYVIANEPDALTT	45.82
712	DRB1*01:01	B2RH57	313	327	GEFSSLLLT TTVLPW	46.66
713	DRB1*01:01	B2RH57	5	19	YFHHPSGLLPRLLLL	47.94
714	DRB1*01:01	B2RH57	190	204	PGSDVIKITKVQILR	48.82
715	DRB1*01:01	B2RH58	546	560	HWEYYTLNPLRLIYH	4.28
716	DRB1*01:01	B2RH58	545	559	DHWEYYTLNPLRLIY	4.58
717	DRB1*01:01	B2RH58	547	561	WEYYTLNPLRLIYHS	4.90
718	DRB1*01:01	B2RH58	544	558	QDHWEEYTLNPLRLI	5.47
719	DRB1*01:01	B2RH58	548	562	EYYTLNPLRLIYHSN	6.55
720	DRB1*01:01	B2RH58	132	146	TSFLKTLVPNSILLQ	9.20
721	DRB1*01:01	B2RH58	131	145	ETSFLKTLVPNSILL	10.18
722	DRB1*01:01	B2RH58	543	557	VQDHWEEYTLNPLRL	10.18
723	DRB1*01:01	B2RH58	630	644	KAIKILLPTASGNAT	10.34
724	DRB1*01:01	B2RH58	629	643	DKAIKILLPTASGNA	11.33
725	DRB1*01:01	B2RH58	530	544	PSFELASQLGATLVQ	11.76
726	DRB1*01:01	B2RH58	133	147	SFLKTLVPNSILLQN	12.11
727	DRB1*01:01	B2RH58	531	545	SFELASQLGATLVQD	12.68

728	DRB1*01:01	B2RH58	130	144	SETSFLKTLVPNSIL	13.06
729	DRB1*01:01	B2RH58	628	642	PDKAIKILLPTASGN	13.17
730	DRB1*01:01	B2RH58	532	546	FELASQLGATLVQDH	15.47
731	DRB1*01:01	B2RH58	627	641	LPDKAIKILLPTASG	15.69
732	DRB1*01:01	B2RH58	529	543	SPSFELASQLGATLV	15.85
733	DRB1*01:01	B2RH58	631	645	AIKILLPTASGNATE	17.37
734	DRB1*01:01	B2RH58	499	513	VGIFYKKSGSSYTLKH	20.01
735	DRB1*01:01	B2RH58	549	563	YYTLNPLRLIYHSNQ	21.60
736	DRB1*01:01	B2RH58	102	116	YGQFNGNNSFKIYLV	21.89
737	DRB1*01:01	B2RH58	134	148	FLKTLVPNSILLQND	22.04
738	DRB1*01:01	B2RH58	110	124	SFKIYLVANVNFSGS	22.63
739	DRB1*01:01	B2RH58	111	125	FKIYLVANVNFSGSF	22.96
740	DRB1*01:01	B2RH58	112	126	KIYLVANVNFSGSFE	23.71
741	DRB1*01:01	B2RH58	498	512	EVGFYKKSGSSYTLK	23.92
742	DRB1*01:01	B2RH58	410	424	KIKVRSILPINNIPK	24.71
743	DRB1*01:01	B2RH58	129	143	ASETSFLKTLVPNSI	26.23
744	DRB1*01:01	B2RH58	298	312	NHLYDMAVTIEVLGS	26.68
745	DRB1*01:01	B2RH58	3	17	TNRILNIICPPILFL	27.03
746	DRB1*01:01	B2RH58	4	18	NRILNIICPPILFLL	27.51
747	DRB1*01:01	B2RH58	101	115	MYGQFNGNNSFKIYL	29.15
748	DRB1*01:01	B2RH58	109	123	NSFKIYLVANVNFSG	29.21
749	DRB1*01:01	B2RH58	409	423	KKIKVRSILPINNIP	29.62
750	DRB1*01:01	B2RH58	626	640	GLPDKAIKILLPTAS	29.71
751	DRB1*01:01	B2RH58	297	311	SNHLYDMAVTIEVLG	30.58
752	DRB1*01:01	B2RH58	408	422	TKKIKVRSILPINNI	30.95
753	DRB1*01:01	B2RH58	151	165	PEDKFAMIGSVEKQI	32.27
754	DRB1*01:01	B2RH58	528	542	VSPSFELASQLGATL	33.55
755	DRB1*01:01	B2RH58	296	310	RSNHLYDMAVTIEVL	33.69
756	DRB1*01:01	B2RH58	533	547	ELASQLGATLVQDHW	33.83
757	DRB1*01:01	B2RH58	152	166	EDKFAMIGSVEKQIN	34.04
758	DRB1*01:01	B2RH58	411	425	IKVRSILPINNIPKD	34.37
759	DRB1*01:01	B2RH58	500	514	GFYKKSGSSYTLKHT	34.51
760	DRB1*01:01	B2RH58	439	453	KIKIRQNPSQFIINT	34.57
761	DRB1*01:01	B2RH58	153	167	DKFAMIGSVEKQINM	34.70
762	DRB1*01:01	B2RH58	103	117	GQFNGNNSFKIYLVA	35.05
763	DRB1*01:01	B2RH58	2	16	RTNRILNIICPPILF	35.25
764	DRB1*01:01	B2RH58	438	452	KKIKIRQNPSQFIIN	35.76
765	DRB1*01:01	B2RH58	299	313	HLYDMAVTIEVLGSL	37.77
766	DRB1*01:01	B2RH58	447	461	SQFIINTFGTKSSWQ	39.99
767	DRB1*01:01	B2RH58	108	122	NNSFKIYLVANVNFS	40.35
768	DRB1*01:01	B2RH58	154	168	KFAMIGSVEKQINMA	41.02
769	DRB1*01:01	B2RH58	497	511	KEVGIFYKKSGSSYTL	41.47
770	DRB1*01:01	B2RH58	5	19	RILNIICPPILFLLV	42.26

771	DRB1*01:01	B2RH58	437	451	EKKIKIRQNPSQFII	43.52
772	DRB1*01:01	B2RH58	342	356	VQYLEVIPQETVMNM	44.42
773	DRB1*01:01	B2RH58	412	426	KVRSILPINNIPKDI	44.65
774	DRB1*01:01	B2RH58	360	374	IELDYFSSSHSLPPA	46.09
775	DRB1*01:01	B2RH58	100	114	SMYGQFNGNNSFKIY	46.17
776	DRB1*01:01	B2RH58	475	489	IYQIVVLSPPADGNM	46.74
777	DRB1*01:01	B2RH58	446	460	PSQFIINTFGTKSSW	47.98
778	DRB1*01:01	B2RH58	603	617	VDKLQREQAGVVRDI	48.37
779	DRB1*01:01	B2RH58	632	646	IKILLPTASGNATEQ	48.85
780	DRB1*01:01	B2RH58	150	164	KPEDKFAMIGSVEKQ	49.37
781	DRB1*01:01	B2RH59	432	446	KYQYVFFKANTSSAE	6.95
782	DRB1*01:01	B2RH59	431	445	EKYQYVFFKANTSSA	7.13
783	DRB1*01:01	B2RH59	433	447	YQYVFFKANTSSAEN	7.78
784	DRB1*01:01	B2RH59	434	448	QYVFFKANTSSAENN	9.31
785	DRB1*01:01	B2RH59	430	444	REKYQYVFFKANTSS	9.58
786	DRB1*01:01	B2RH59	162	176	MAKFSLSVTPPAESK	9.59
787	DRB1*01:01	B2RH59	314	328	NNIFLSAEVQALPAF	9.84
788	DRB1*01:01	B2RH59	315	329	NIFLSAEVQALPAFS	11.95
789	DRB1*01:01	B2RH59	161	175	NMAKFSLSVTPPAES	12.48
790	DRB1*01:01	B2RH59	313	327	ANNIFLSAEVQALPA	12.72
791	DRB1*01:01	B2RH59	163	177	AKFSLSVTPPAESKL	12.78
792	DRB1*01:01	B2RH59	503	517	KTLYKYVLTTMPQNK	13.85
793	DRB1*01:01	B2RH59	435	449	YVFFKANTSSAENNQ	14.77
794	DRB1*01:01	B2RH59	429	443	VREKYQYVFFKANTS	17.31
795	DRB1*01:01	B2RH59	160	174	RNMAKFSLSVTPPAE	17.64
796	DRB1*01:01	B2RH59	504	518	TLYKYVLTTMPQNK	18.82
797	DRB1*01:01	B2RH59	502	516	GKTLYKYVLTTMPQN	19.24
798	DRB1*01:01	B2RH59	312	326	AANNIFLSAEVQALP	19.29
799	DRB1*01:01	B2RH59	164	178	KFSLSVTPPAESKLY	20.46
800	DRB1*01:01	B2RH59	97	111	VERRIHFIANYELAD	20.73
801	DRB1*01:01	B2RH59	493	507	GMILGIEGGKTLYK	21.20
802	DRB1*01:01	B2RH59	96	110	EVERRIHFIANYELA	21.32
803	DRB1*01:01	B2RH59	505	519	LYKYVLTTMPQNKEL	21.33
804	DRB1*01:01	B2RH59	316	330	IFLSAEVQALPAFSD	21.54
805	DRB1*01:01	B2RH59	339	353	HTYMFVQGEPSGTF	21.94
806	DRB1*01:01	B2RH59	99	113	RRIHFIANYELADPS	23.10
807	DRB1*01:01	B2RH59	98	112	ERRIHFIANYELADP	23.62
808	DRB1*01:01	B2RH59	340	354	TYMFVQGEPSGTFQ	24.82
809	DRB1*01:01	B2RH59	284	298	TRNHFYKMILKKAKA	25.15
810	DRB1*01:01	B2RH59	494	508	GMILGIEGGKTLYKY	25.46
811	DRB1*01:01	B2RH59	268	282	YYKLDFVDTNKVRYN	25.49
812	DRB1*01:01	B2RH59	520	534	QFRFKSNKVNSAENI	26.65
813	DRB1*01:01	B2RH59	285	299	RNHFYKMILKKAKAP	27.11

814	DRB1*01:01	B2RH59	267	281	TTYKLD FVD TNK VRY	28.17
815	DRB1*01:01	B2RH59	418	432	NPDLKRSVTVLVREK	28.45
816	DRB1*01:01	B2RH59	153	167	LGQIQLLRNMAKFSL	29.94
817	DRB1*01:01	B2RH59	154	168	GQIQLLRNMAKFSLS	30.10
818	DRB1*01:01	B2RH59	501	515	GGKTLYKYVLT TMPQ	30.45
819	DRB1*01:01	B2RH59	366	380	DYSKLT VSVSTPTGQ	31.28
820	DRB1*01:01	B2RH59	341	355	YMFVQGEPSGTFQA	31.83
821	DRB1*01:01	B2RH59	155	169	QIQLLRNMAKFSLSV	32.12
822	DRB1*01:01	B2RH59	283	297	ITRNHFYKMILKKAK	32.13
823	DRB1*01:01	B2RH59	492	506	TGGMILGIEGGKTLY	32.46
824	DRB1*01:01	B2RH59	311	325	AAANNIFLSAEVQAL	32.50
825	DRB1*01:01	B2RH59	485	499	TEHFYPKTGGMILGI	33.10
826	DRB1*01:01	B2RH59	519	533	LQFRFKSNKVNSAEN	33.41
827	DRB1*01:01	B2RH59	419	433	PDLKRSVTVLVREKY	33.89
828	DRB1*01:01	B2RH59	365	379	PDYSKLT VSVSTPTG	35.04
829	DRB1*01:01	B2RH59	249	263	GITCLILKARYNLPN	35.13
830	DRB1*01:01	B2RH59	367	381	YSKLT VSVSTPTGQQ	36.06
831	DRB1*01:01	B2RH59	266	280	YTYKLD FVD TNK VR	37.26
832	DRB1*01:01	B2RH59	152	166	NLGQIQLLRNMAKFS	37.32
833	DRB1*01:01	B2RH59	506	520	YKYVLT TMPQNKELQ	37.72
834	DRB1*01:01	B2RH59	286	300	NHFYKMILKKAKAPG	37.81
835	DRB1*01:01	B2RH59	518	532	ELQFRFKSNKVNSAE	38.02
836	DRB1*01:01	B2RH59	248	262	AGITCLILKARYNLP	38.03
837	DRB1*01:01	B2RH59	159	173	LRNMAKFSLSVTPPA	39.06
838	DRB1*01:01	B2RH59	436	450	VFFKANTSSAENNQV	39.21
839	DRB1*01:01	B2RH59	521	535	FRFKSNKVNSAENIA	39.51
840	DRB1*01:01	B2RH59	417	431	GNPDLKRSVTVLVRE	39.99
841	DRB1*01:01	B2RH59	338	352	DHTYMFVQGEPSGT	40.08
842	DRB1*01:01	B2RH59	278	292	KVRYNITRNHFYKMI	40.77
843	DRB1*01:01	B2RH59	364	378	NPDISKLT VSVSTPT	42.48
844	DRB1*01:01	B2RH59	486	500	EHFYPKTGGMILGIE	42.78
845	DRB1*01:01	B2RH59	495	509	MILGIEGGKTLYKYV	43.76
846	DRB1*01:01	B2RH59	269	283	YKLD FVD TNK VRYNI	43.95
847	DRB1*01:01	B2RH59	1	15	MKSKSIIAQLLYVLI	45.50
848	DRB1*01:01	B2RH59	247	261	GAGITCLILKARYNL	45.53
849	DRB1*01:01	B2RH59	484	498	YTEHFYPKTGGMILG	46.34
850	DRB1*01:01	B2RH59	287	301	HFYKMILKKAKAPGR	46.43
851	DRB1*01:01	B2RH59	156	170	IQLLRNMAKFSLSVT	46.59
852	DRB1*01:01	B2RH59	250	264	ITCLILKARYNLPNA	46.76
853	DRB1*01:01	B2RH59	416	430	QGNPDLKRSVTVLVR	46.93
854	DRB1*01:01	B2RH59	12	26	YVLIAFMAVSCVADK	47.47
855	DRB1*01:01	B2RH59	151	165	QNLGQIQLLRNMAKF	48.55
856	DRB1*01:01	B2RH59	517	531	KELQFRFKSNKVNSA	48.65

857	DRB1*01:01	B2RH59	175	189	SKLYDASYALYNSWN	49.24
858	DRB1*01:01	B2RH59	277	291	NKVRYNITRNHFYKM	49.37
859	DRB1*01:01	B2RH59	469	483	PDVLNAALLPITFKV	49.72
860	DRB1*01:01	B2RH59	174	188	ESKLYDASYALYNSW	49.80
861	DRB1*01:01	B2RHG4	78	92	PAKYIAGNTFSGGI	13.83
862	DRB1*01:01	B2RHG4	79	93	AKYIAGNTFSGGIW	13.86
863	DRB1*01:01	B2RHG4	68	82	LLLFDQSGANPAKY	15.11
864	DRB1*01:01	B2RHG4	77	91	NPAKYIAGNTFSGG	19.00
865	DRB1*01:01	B2RHG4	67	81	YLLLFDQSGANPAKY	20.91
866	DRB1*01:01	B2RHG4	1	15	MKKYLLYASLLTSVL	20.92
867	DRB1*01:01	B2RHG4	80	94	KYIAGNTFSGGIWL	21.27
868	DRB1*01:01	B2RHG4	76	90	ANPAKYIAGNTFSG	22.11
869	DRB1*01:01	B2RHG4	2	16	KKYLLYASLLTSVLL	22.82
870	DRB1*01:01	B2RHG4	69	83	LLFDQSGANPAKYI	24.49
871	DRB1*01:01	B2RHG4	112	126	RKVYVAVNDNAVKT	24.74
872	DRB1*01:01	B2RHG4	192	206	EKFQIVPIIVNGSL	27.29
873	DRB1*01:01	B2RHG4	111	125	ERKVYVAVNDNAVK	28.13
874	DRB1*01:01	B2RHG4	193	207	KFQIVPIIVNGSLSE	28.75
875	DRB1*01:01	B2RHG4	191	205	SEKFQIVPIIVNGSL	29.12
876	DRB1*01:01	B2RHG4	66	80	LYLLLFDQSGANPAK	31.94
877	DRB1*01:01	B2RHG4	113	127	KVYVAVNDNAVKTA	32.30
878	DRB1*01:01	B2RHG4	4	18	YLLYASLLTSVLLFS	33.74
879	DRB1*01:01	B2RHG4	3	17	KYLLYASLLTSVLLF	37.33
880	DRB1*01:01	B2RHG4	166	180	FLANRLLDNVPLVRA	40.89
881	DRB1*01:01	B2RHG4	6	20	LYASLLTSVLLFSCS	41.37
882	DRB1*01:01	B2RHG4	5	19	LLYASLLTSVLLFSC	41.67
883	DRB1*01:01	B2RHG4	190	204	LSEKFQIVPIIVNGS	43.05
884	DRB1*01:01	B2RHG4	152	166	IASPFLMSGNKTHDF	44.11
885	DRB1*01:01	B2RHG4	153	167	ASPFLMSGNKTHDFL	45.88
886	DRB1*01:01	B2RHG4	167	181	LANRLLDNVPLVRAI	49.17
887	DRB1*01:02	A0PA81	203	217	YTGLAELIGNAVQYR	25.76
888	DRB1*01:02	A0PA81	204	218	TGLAELIGNAVQYRP	34.57
889	DRB1*01:02	A0PA81	202	216	TYTGLAELIGNAVQY	37.25
890	DRB1*01:02	A0PA81	264	278	VPFIPVIGKMLNIYI	37.32
891	DRB1*01:02	A0PA81	263	277	GVPFIPVIGKMLNIY	39.37
892	DRB1*01:02	A0PA81	265	279	PFIPVIGKMLNIYID	42.92
893	DRB1*01:02	A0PA81	262	276	DGVPFIPVIGKMLNI	47.00
894	DRB1*01:02	B2RH54	162	176	DPLKIKRVHARMAFT	14.95
895	DRB1*01:02	B2RH54	164	178	LKIKRVHARMAFTEI	15.66
896	DRB1*01:02	B2RH54	163	177	PLKIKRVHARMAFTE	16.20
897	DRB1*01:02	B2RH54	161	175	NDPLKIKRVHARMAF	17.83
898	DRB1*01:02	B2RH54	165	179	KIKRVHARMAFTEIK	26.67
899	DRB1*01:02	B2RH54	4	18	TKFFLLGLAALAMTA	35.25

900	DRB1*01:02	B2RH54	91	105	QRTLVMANTGAMEL	36.77
901	DRB1*01:02	B2RH54	92	106	RTLVMANTGAMELV	37.13
902	DRB1*01:02	B2RH54	90	104	GQRTLVMANTGAME	46.56
903	DRB1*01:02	B2RH54	3	17	KTKFFLLGLAALAMT	48.24
904	DRB1*01:02	B2RH54	160	174	ENDPLKIKRVHARMA	48.30
905	DRB1*01:02	B2RH54	108	122	KTLAEVKALTTELT	48.80
906	DRB1*01:02	B2RH57	405	419	TIKVKALKPNGIGIQ	19.51
907	DRB1*01:02	B2RH57	404	418	YTIKVKALKPNGIGI	20.24
908	DRB1*01:02	B2RH57	406	420	IKVKALKPNGIGIQR	21.73
909	DRB1*01:02	B2RH57	238	252	AQSIIQASAPLYVYE	24.73
910	DRB1*01:02	B2RH57	237	251	SAQSIIQASAPLYVY	25.54
911	DRB1*01:02	B2RH57	239	253	QSIIQASAPLYVYEN	26.14
912	DRB1*01:02	B2RH57	403	417	VYTIKVKALKPNGIGI	28.13
913	DRB1*01:02	B2RH57	198	212	TKVQILRNAKNSRLL	32.42
914	DRB1*01:02	B2RH57	199	213	KVQILRNAKNSRLLE	33.50
915	DRB1*01:02	B2RH57	240	254	SIIQASAPLYVYENI	35.41
916	DRB1*01:02	B2RH57	407	421	KVKALKPNGIGIQRR	35.94
917	DRB1*01:02	B2RH57	200	214	VQILRNAKNSRLLEG	39.80
918	DRB1*01:02	B2RH57	236	250	GSAQSIIQASAPLYV	44.66
919	DRB1*01:02	B2RH57	197	211	ITKVQILRNAKNSRL	49.38
920	DRB1*01:02	B2RH58	132	146	TSFLKTLVPNSILLQ	21.76
921	DRB1*01:02	B2RH58	131	145	ETSFLKTLVPNSILL	25.06
922	DRB1*01:02	B2RH58	133	147	SFLKTLVPNSILLQN	26.40
923	DRB1*01:02	B2RH58	630	644	KAIKILLPTASGNAT	28.78
924	DRB1*01:02	B2RH58	629	643	DKAIKILLPTASGNA	31.84
925	DRB1*01:02	B2RH58	530	544	PSFELASQLGATLVQ	32.76
926	DRB1*01:02	B2RH58	130	144	SETSFLKTLVPNSIL	34.09
927	DRB1*01:02	B2RH58	531	545	SFELASQLGATLVQD	37.07
928	DRB1*01:02	B2RH58	628	642	PDKAIKILLPTASGN	37.89
929	DRB1*01:02	B2RH58	546	560	HWEYYTLNPLRLIYH	40.48
930	DRB1*01:02	B2RH58	547	561	WEYYTLNPLRLIYHS	40.72
931	DRB1*01:02	B2RH58	3	17	TNRILNIICPPILFL	40.99
932	DRB1*01:02	B2RH58	4	18	NRILNIICPPILFLL	42.22
933	DRB1*01:02	B2RH58	631	645	AIKILLPTASGNATE	43.99
934	DRB1*01:02	B2RH58	627	641	LPDKAIKILLPTASG	45.59
935	DRB1*01:02	B2RH58	532	546	FELASQLGATLVQDH	45.63
936	DRB1*01:02	B2RH58	545	559	DHWEYYTLNPLRLIY	45.69
937	DRB1*01:02	B2RH58	134	148	FLKTLVPNSILLQND	46.39
938	DRB1*01:02	B2RH58	529	543	SPSFELASQLGATLV	48.50
939	DRB1*01:02	B2RH59	153	167	LGQIQLLRNMAKFSL	42.51
940	DRB1*01:02	B2RH59	154	168	GQIQLLRNMAKFSLS	45.43
941	DRB1*01:02	B2RH59	493	507	GGMILGIEGGKTLKY	46.89
942	DRB1*01:02	B2RH59	155	169	QIQLLRNMAKFSLSV	48.31

943	DRB1*01:03	A0PA81	263	277	GVPFIPVIGKMLNIY	44.88
944	DRB1*01:03	B2RH54	162	176	DPLKIKRVHARMAFT	38.29
945	DRB1*01:03	B2RH54	164	178	LKIKRVHARMAFTEI	43.03
946	DRB1*01:03	B2RH54	163	177	PLKIKRVHARMAFTE	45.01
947	DRB1*01:03	B2RH54	161	175	NDPLKIKRVHARMAF	47.08
948	DRB1*01:11	A0PA81	263	277	GVPFIPVIGKMLNIY	10.56
949	DRB1*01:11	A0PA81	274	288	LNIYIDLRGANLNVL	11.16
950	DRB1*01:11	A0PA81	262	276	DGVFPFIPVIGKMLNI	12.41
951	DRB1*01:11	A0PA81	264	278	VFPFIPVIGKMLNIYI	12.75
952	DRB1*01:11	A0PA81	273	287	MLNIYIDLRGANLNV	13.54
953	DRB1*01:11	A0PA81	275	289	NIYIDLRGANLNLV	13.75
954	DRB1*01:11	A0PA81	261	275	SDGVFPFIPVIGKMLN	16.33
955	DRB1*01:11	A0PA81	272	286	KMLNIYIDLRGANLN	18.24
956	DRB1*01:11	A0PA81	276	290	IYIDLRGANLNLVLS	19.87
957	DRB1*01:11	A0PA81	265	279	PFIPVIGKMLNIYID	20.38
958	DRB1*01:11	A0PA81	119	133	KDLFFRLSSTDGIAQ	24.17
959	DRB1*01:11	A0PA81	203	217	YTGLAELIGNAVQYR	28.64
960	DRB1*01:11	A0PA81	118	132	VKDLFFRLSSTDGIA	28.76
961	DRB1*01:11	A0PA81	120	134	DLFFRLSSTDGIAQS	32.75
962	DRB1*01:11	A0PA81	260	274	GSDGVFPFIPVIGKML	33.93
963	DRB1*01:11	A0PA81	70	84	IDRLMMDAAQVAARK	34.90
964	DRB1*01:11	A0PA81	271	285	GKMLNIYIDLRGANL	35.91
965	DRB1*01:11	A0PA81	69	83	RIDRLMMDAAQVAAR	41.37
966	DRB1*01:11	A0PA81	121	135	LFFRLSSTDGIAQSP	43.49
967	DRB1*01:11	A0PA81	202	216	TYTGLAELIGNAVQY	45.23
968	DRB1*01:11	A0PA81	204	218	TGLAELIGNAVQYRP	46.39
969	DRB1*01:11	B2RH54	4	18	TKFFLLGLAALAMTA	11.35
970	DRB1*01:11	B2RH54	3	17	KTKFFLLGLAALAMT	13.35
971	DRB1*01:11	B2RH54	2	16	KKTKFFLLGLAALAM	16.74
972	DRB1*01:11	B2RH54	5	19	KFFLLGLAALAMTAC	16.76
973	DRB1*01:11	B2RH54	1	15	MKKTKFFLLGLAALA	21.32
974	DRB1*01:11	B2RH54	163	177	PLKIKRVHARMAFTE	22.87
975	DRB1*01:11	B2RH54	162	176	DPLKIKRVHARMAFT	23.20
976	DRB1*01:11	B2RH54	164	178	LKIKRVHARMAFTEI	25.74
977	DRB1*01:11	B2RH54	91	105	QRTLVMANTGAMEL	30.72
978	DRB1*01:11	B2RH54	161	175	NDPLKIKRVHARMAF	32.36
979	DRB1*01:11	B2RH54	92	106	RTLVMANTGAMELV	33.76
980	DRB1*01:11	B2RH54	189	203	IYTFVPEKIYGLIAK	40.85
981	DRB1*01:11	B2RH54	90	104	GQRTLVMANTGAME	42.63
982	DRB1*01:11	B2RH54	165	179	KIKRVHARMAFTEIK	46.18
983	DRB1*01:11	B2RH54	172	186	RMAFTEIKVQMSAAY	46.66
984	DRB1*01:11	B2RH54	6	20	FFLLGLAALAMTACN	49.14
985	DRB1*01:11	B2RH57	337	351	LVPYVAEINPHAVIT	15.53

986	DRB1*01:11	B2RH57	336	350	FLVPYVAEINPHAVI	16.93
987	DRB1*01:11	B2RH57	338	352	VPYVAEINPHAVITQ	21.44
988	DRB1*01:11	B2RH57	405	419	TIKVKALKPNGIGIQ	23.06
989	DRB1*01:11	B2RH57	404	418	YTIKVKALKPNGIGI	25.64
990	DRB1*01:11	B2RH57	335	349	GFLVPYVAEINPHAV	25.85
991	DRB1*01:11	B2RH57	238	252	AQSIIQASAPLYVYE	27.81
992	DRB1*01:11	B2RH57	237	251	SAQSIIQASAPLYVY	28.64
993	DRB1*01:11	B2RH57	421	435	RTNLFFTVDGKKVIL	29.00
994	DRB1*01:11	B2RH57	239	253	QSIIQASAPLYVYEN	29.02
995	DRB1*01:11	B2RH57	406	420	IKVKALKPNGIGIQR	31.26
996	DRB1*01:11	B2RH57	2	16	KMKYFHHPSGLLPRL	32.11
997	DRB1*01:11	B2RH57	355	369	VVTFENSLSFTVRIK	32.42
998	DRB1*01:11	B2RH57	422	436	TNLFFTVDGKKVILD	33.51
999	DRB1*01:11	B2RH57	339	353	PYVAEINPHAVITQD	39.24
1000	DRB1*01:11	B2RH57	240	254	SIIQASAPLYVYENI	41.18
1001	DRB1*01:11	B2RH57	3	17	MKYFHHPSGLLPRL	42.21
1002	DRB1*01:11	B2RH57	423	437	NLFFTVDGKKVILDK	42.78
1003	DRB1*01:11	B2RH57	403	417	VYTIKVKALKPNGIG	43.17
1004	DRB1*01:11	B2RH57	1	15	MKMKYFHHPSGLLP	43.26
1005	DRB1*01:11	B2RH57	356	370	VTFENSLSFTVRIKG	44.93
1006	DRB1*01:11	B2RH57	420	434	RRTNLFFTVDGKKVI	45.33
1007	DRB1*01:11	B2RH57	199	213	KVQILRNAKNSRLLE	45.42
1008	DRB1*01:11	B2RH57	200	214	VQILRNAKNSRLLEG	49.21
1009	DRB1*01:11	B2RH57	236	250	GSAQSIIQASAPLYV	49.25
1010	DRB1*01:11	B2RH57	198	212	TKVQILRNAKNSRLL	49.94
1011	DRB1*01:11	B2RH58	546	560	HWEYYTLNPLRLIYH	8.18
1012	DRB1*01:11	B2RH58	545	559	DHWEYYTLNPLRLIY	8.95
1013	DRB1*01:11	B2RH58	547	561	WEYYTLNPLRLIYHS	9.44
1014	DRB1*01:11	B2RH58	544	558	QDHWEYYTLNPLRLI	11.66
1015	DRB1*01:11	B2RH58	548	562	EYYTLNPLRLIYHSN	13.27
1016	DRB1*01:11	B2RH58	132	146	TSFLKTLVPNSILLQ	22.69
1017	DRB1*01:11	B2RH58	131	145	ETSFLKTLVPNSILL	25.36
1018	DRB1*01:11	B2RH58	543	557	VQDHWEYYTLNPLRL	28.30
1019	DRB1*01:11	B2RH58	133	147	SFLKTLVPNSILLQN	30.36
1020	DRB1*01:11	B2RH58	111	125	FKIYLVANVNFSGSF	32.27
1021	DRB1*01:11	B2RH58	530	544	PSFELASQLGATLVQ	32.82
1022	DRB1*01:11	B2RH58	110	124	SFKIYLVANVNFSGS	34.07
1023	DRB1*01:11	B2RH58	630	644	KAIKILLPTASGNAT	35.23
1024	DRB1*01:11	B2RH58	130	144	SETSFLKTLVPNSIL	35.47
1025	DRB1*01:11	B2RH58	112	126	KIYLVANVNFSGSFE	36.89
1026	DRB1*01:11	B2RH58	629	643	DKAIKILLPTASGNA	38.11
1027	DRB1*01:11	B2RH58	102	116	YGQFNGNNSFKIYLV	39.74
1028	DRB1*01:11	B2RH58	531	545	SFELASQLGATLVQD	40.14

1029	DRB1*01:11	B2RH58	549	563	YYTLNPLRLIYHSNQ	42.47
1030	DRB1*01:11	B2RH58	529	543	SPSFELASQLGATLV	44.05
1031	DRB1*01:11	B2RH58	439	453	KIKIRQNPSQFIINT	46.53
1032	DRB1*01:11	B2RH58	109	123	NSFKIYLVANVNFSG	48.21
1033	DRB1*01:11	B2RH58	628	642	PDKAIKILLPTASGN	48.55
1034	DRB1*01:11	B2RH59	432	446	KYQYVFFKANTSSAE	21.57
1035	DRB1*01:11	B2RH59	431	445	EKYQYVFFKANTSSA	23.82
1036	DRB1*01:11	B2RH59	433	447	YQYVFFKANTSSAEN	24.33
1037	DRB1*01:11	B2RH59	162	176	MAKFSLSVTPPAESK	25.33
1038	DRB1*01:11	B2RH59	314	328	NNIFLSAEVQALPAF	25.48
1039	DRB1*01:11	B2RH59	434	448	QYVFFKANTSSAENN	29.89
1040	DRB1*01:11	B2RH59	315	329	NIFLSAEVQALPAFS	30.36
1041	DRB1*01:11	B2RH59	313	327	ANNIFLSAEVQALPA	35.15
1042	DRB1*01:11	B2RH59	430	444	REKYQYVFFKANTSS	37.18
1043	DRB1*01:11	B2RH59	161	175	NMAKFSLSVTPPAES	38.13
1044	DRB1*01:11	B2RH59	163	177	AKFSLSVTPPAESKL	38.40
1045	DRB1*01:11	B2RH59	503	517	KTLYKYVLTTMPQNK	41.03
1046	DRB1*01:11	B2RH59	520	534	QFRFKSNKVNSAENI	45.33
1047	DRB1*01:11	B2RH59	435	449	YVFFKANTSSAENNQ	48.16
1048	DRB1*01:11	B2RHG4	2	16	KKYLLYASLLTSVLL	41.60
1049	DRB1*01:11	B2RHG4	112	126	RKVYVVANVDNAVKT	41.95
1050	DRB1*01:11	B2RHG4	1	15	MKKYLLYASLLTSVL	46.01
1051	DRB1*01:11	B2RHG4	68	82	LLLFQSGANPAKY	47.37
1052	DRB1*01:11	B2RHG4	4	18	YLLYASLLTSVLLFS	49.17
1053	DRB1*01:11	B2RHG4	78	92	PAKYIAGNTFSGGI	49.71
1054	DRB1*01:18	A0PA81	263	277	GVPFIPVIGKMLNIY	4.22
1055	DRB1*01:18	A0PA81	274	288	LNIIYIDLRGANLNL	4.29
1056	DRB1*01:18	A0PA81	264	278	VPFIPVIGKMLNIYI	4.63
1057	DRB1*01:18	A0PA81	262	276	DGVPFIPVIGKMLNI	4.65
1058	DRB1*01:18	A0PA81	273	287	MLNIYIDLRGANLNV	4.74
1059	DRB1*01:18	A0PA81	275	289	NIYIDLRGANLNLV	4.83
1060	DRB1*01:18	A0PA81	261	275	SDGVPFIPVIGKMLN	5.58
1061	DRB1*01:18	A0PA81	272	286	KMLNIYIDLRGANLN	5.85
1062	DRB1*01:18	A0PA81	265	279	PFIPVIGKMLNIYID	6.43
1063	DRB1*01:18	A0PA81	276	290	IYIDLRGANLNLVLS	6.61
1064	DRB1*01:18	A0PA81	203	217	YTGLAELIGNAVQYR	8.34
1065	DRB1*01:18	A0PA81	119	133	KDLFFRLSSTDGIAQ	8.49
1066	DRB1*01:18	A0PA81	260	274	GSDGVPFIPVIGKML	9.18
1067	DRB1*01:18	A0PA81	118	132	VKDLFFRLSSTDGIA	9.56
1068	DRB1*01:18	A0PA81	271	285	GKMLNIYIDLRGANL	10.40
1069	DRB1*01:18	A0PA81	120	134	DLFFRLSSTDGIAQS	11.42
1070	DRB1*01:18	A0PA81	204	218	TGLAELIGNAVQYRP	11.47
1071	DRB1*01:18	A0PA81	202	216	TYTGLAELIGNAVQY	11.58

1072	DRB1*01:18	AOPA81	267	281	IPVIGKMLNIYIDLR	14.02
1073	DRB1*01:18	AOPA81	117	131	NVKDLFFRLSSTDGI	15.43
1074	DRB1*01:18	AOPA81	266	280	FIPVIGKMLNIYIDL	15.47
1075	DRB1*01:18	AOPA81	121	135	LFFRLSSTDGIAQSP	15.58
1076	DRB1*01:18	AOPA81	268	282	PVIGKMLNIYIDLRG	16.14
1077	DRB1*01:18	AOPA81	205	219	GLAELIGNAVQYRPD	17.07
1078	DRB1*01:18	AOPA81	201	215	DTYTGLAELIGNAVQ	17.27
1079	DRB1*01:18	AOPA81	160	174	VDIYRRTAQVHIIIR	20.59
1080	DRB1*01:18	AOPA81	70	84	IDRLMMDAAQVAARK	21.57
1081	DRB1*01:18	AOPA81	285	299	LNVLVSVTPWDVVQQ	22.71
1082	DRB1*01:18	AOPA81	69	83	RIDRLMMDAAQVAAR	22.94
1083	DRB1*01:18	AOPA81	277	291	YIDLRGANLNVLVSV	22.95
1084	DRB1*01:18	AOPA81	159	173	TVDIYRRTAQVHIII	25.14
1085	DRB1*01:18	AOPA81	161	175	DIYRRTAQVHIIIRG	28.47
1086	DRB1*01:18	AOPA81	286	300	NVLVSVTPWDVVQQY	28.96
1087	DRB1*01:18	AOPA81	136	150	GDLFSGVLTCPIEYG	29.13
1088	DRB1*01:18	AOPA81	284	298	NLNVLVSVTPWDVVQ	29.33
1089	DRB1*01:18	AOPA81	269	283	VIGKMLNIYIDLRGA	29.48
1090	DRB1*01:18	AOPA81	68	82	RRIDRLMMDAAQVAA	30.87
1091	DRB1*01:18	AOPA81	135	149	PGDLFSGVLTCPIEY	31.20
1092	DRB1*01:18	AOPA81	71	85	DRLMMDAAQVAARKP	31.87
1093	DRB1*01:18	AOPA81	158	172	QTVDIYRRTAQVHII	35.82
1094	DRB1*01:18	AOPA81	137	151	DLFSGVLTCPIEYGS	38.16
1095	DRB1*01:18	AOPA81	200	214	PDTYTGLAELIGNAV	38.52
1096	DRB1*01:18	AOPA81	72	86	RLMMDAAQVAARKPI	39.83
1097	DRB1*01:18	AOPA81	162	176	IYRRTAQVHIIIRGY	40.17
1098	DRB1*01:18	AOPA81	283	297	ANLNVLVSVTPWDVV	44.40
1099	DRB1*01:18	AOPA81	116	130	QNVKDLFFRLSSTDG	48.28
1100	DRB1*01:18	AOPA81	67	81	GRRIDRLMMDAAQVA	48.35
1101	DRB1*01:18	AOPA81	134	148	SPGDLFSGVLTCPIE	49.11
1102	DRB1*01:18	B2RH54	4	18	TKFFLLGLAALAMTA	6.08
1103	DRB1*01:18	B2RH54	3	17	KTKFFLLGLAALAMT	6.89
1104	DRB1*01:18	B2RH54	163	177	PLKIKRVHARMAFTE	7.30
1105	DRB1*01:18	B2RH54	162	176	DPLKIKRVHARMAFT	7.51
1106	DRB1*01:18	B2RH54	164	178	LKIKRVHARMAFTEI	8.00
1107	DRB1*01:18	B2RH54	2	16	KKTKFFLLGLAALAM	8.56
1108	DRB1*01:18	B2RH54	5	19	KFFLLGLAALAMTAC	8.72
1109	DRB1*01:18	B2RH54	161	175	NDPLKIKRVHARMAF	9.32
1110	DRB1*01:18	B2RH54	1	15	MKKTKFFLLGLAALA	10.94
1111	DRB1*01:18	B2RH54	91	105	QRTLVMANTGAMEL	11.59
1112	DRB1*01:18	B2RH54	189	203	IYTFVPEKIYGLIAK	12.58
1113	DRB1*01:18	B2RH54	165	179	KIKRVHARMAFTEIK	12.61
1114	DRB1*01:18	B2RH54	172	186	RMAFTEIKVQMSAAY	12.73

1115	DRB1*01:18	B2RH54	92	106	RTLVMANTGAMELV	12.92
1116	DRB1*01:18	B2RH54	90	104	GQRTLVMANTGAME	14.37
1117	DRB1*01:18	B2RH54	188	202	NIYTFVPEKIYGLIA	15.21
1118	DRB1*01:18	B2RH54	173	187	MAFTEIKVQMSAAYD	15.36
1119	DRB1*01:18	B2RH54	89	103	AGQRTLVMANTGAM	16.22
1120	DRB1*01:18	B2RH54	190	204	YTFVPEKIYGLIAKK	16.56
1121	DRB1*01:18	B2RH54	174	188	AFTEIKVQMSAAYDN	18.71
1122	DRB1*01:18	B2RH54	171	185	ARMAFTEIKVQMSAA	18.98
1123	DRB1*01:18	B2RH54	108	122	KTAEVKALTTELTA	20.03
1124	DRB1*01:18	B2RH54	109	123	TLAEVKALTTELTAE	20.72
1125	DRB1*01:18	B2RH54	110	124	LAEVKALTTELTAEN	21.12
1126	DRB1*01:18	B2RH54	187	201	DNIYTFVPEKIYGLI	21.28
1127	DRB1*01:18	B2RH54	6	20	FLLGLAALAMTACN	22.11
1128	DRB1*01:18	B2RH54	160	174	ENDPLKIKRVHARMA	23.16
1129	DRB1*01:18	B2RH54	175	189	FTEIKVQMSAAYDNI	23.56
1130	DRB1*01:18	B2RH54	93	107	TLVMANTGAMELVG	23.85
1131	DRB1*01:18	B2RH54	7	21	FLLGLAALAMTACNK	25.82
1132	DRB1*01:18	B2RH54	128	142	AGLIMTAEPKTIVLK	26.13
1133	DRB1*01:18	B2RH54	191	205	TFVPEKIYGLIAKKQ	26.35
1134	DRB1*01:18	B2RH54	186	200	YDNIYTFVPEKIYGL	27.79
1135	DRB1*01:18	B2RH54	170	184	HARMAFTEIKVQMSA	27.95
1136	DRB1*01:18	B2RH54	195	209	EKIYGLIAKKQSNLF	28.45
1137	DRB1*01:18	B2RH54	107	121	GKTLAEVKALTTELT	29.78
1138	DRB1*01:18	B2RH54	309	323	KTYYPVLVNFNSNNY	31.30
1139	DRB1*01:18	B2RH54	111	125	AEVKALTTELTAENQ	31.41
1140	DRB1*01:18	B2RH54	127	141	AAGLIMTAEPKTIVL	31.52
1141	DRB1*01:18	B2RH54	176	190	TEIKVQMSAAYDNIY	31.70
1142	DRB1*01:18	B2RH54	194	208	PEKIYGLIAKKQSNL	32.41
1143	DRB1*01:18	B2RH54	129	143	GLIMTAEPKTIVLKA	34.12
1144	DRB1*01:18	B2RH54	137	151	KTIVLKAGKNYIGYS	35.34
1145	DRB1*01:18	B2RH54	256	270	QGFYVLENDYSANGG	35.51
1146	DRB1*01:18	B2RH54	210	224	GATLVNADANYLTGS	35.86
1147	DRB1*01:18	B2RH54	36	50	SVVLKTSNSNRAFGV	36.61
1148	DRB1*01:18	B2RH54	308	322	GKTYYPVLVNFNSNN	36.63
1149	DRB1*01:18	B2RH54	196	210	KIYGLIAKKQSNLFG	36.84
1150	DRB1*01:18	B2RH54	254	268	APQGFYVLENDYSAN	38.80
1151	DRB1*01:18	B2RH54	255	269	PQGFYVLENDYSANG	39.06
1152	DRB1*01:18	B2RH54	88	102	SAGQRTLVMANTGA	39.26
1153	DRB1*01:18	B2RH54	211	225	ATLVNADANYLTGSL	40.02
1154	DRB1*01:18	B2RH54	177	191	EIKVQMSAAYDNIYT	40.05
1155	DRB1*01:18	B2RH54	106	120	VGKTLAEVKALTTEL	40.75
1156	DRB1*01:18	B2RH54	192	206	FVPEKIYGLIAKKQS	41.26
1157	DRB1*01:18	B2RH54	136	150	PKTIVLKAGKNYIGY	41.90

1158	DRB1*01:18	B2RH54	209	223	FGATLVNADANYLTG	42.35
1159	DRB1*01:18	B2RH54	202	216	AKKQSNLFGATLVNA	43.84
1160	DRB1*01:18	B2RH54	307	321	EGKTYYPVLVNFSNSN	43.86
1161	DRB1*01:18	B2RH54	193	207	VPEKIYGLIAKKQSN	44.49
1162	DRB1*01:18	B2RH54	34	48	TISVVLKTSNSNRAF	45.63
1163	DRB1*01:18	B2RH54	138	152	TIVLKAGKNYIGYSG	46.47
1164	DRB1*01:18	B2RH54	35	49	ISVVLKTSNSNRAFG	46.49
1165	DRB1*01:18	B2RH54	94	108	LVVMANTGAMELVGK	46.60
1166	DRB1*01:18	B2RH54	185	199	AYDNIYTFVPEKIYG	47.80
1167	DRB1*01:18	B2RH54	166	180	IKRVHARMAFTEIKV	48.38
1168	DRB1*01:18	B2RH54	112	126	EVKALTTELTAEHQE	48.73
1169	DRB1*01:18	B2RH57	405	419	TIKVKALKPNEGIGIQ	7.42
1170	DRB1*01:18	B2RH57	404	418	YTIKVKALKPNEGIGI	7.81
1171	DRB1*01:18	B2RH57	406	420	IKVKALKPNEGIGIQR	8.53
1172	DRB1*01:18	B2RH57	421	435	RTNLFFTVDGKKVIL	8.79
1173	DRB1*01:18	B2RH57	422	436	TNLFFTVDGKKVILD	9.91
1174	DRB1*01:18	B2RH57	403	417	VYTIKVKALKPNEGIG	10.90
1175	DRB1*01:18	B2RH57	355	369	VVTFENSLSFTVRIK	10.91
1176	DRB1*01:18	B2RH57	238	252	AQSIIQASAPLYVYE	11.23
1177	DRB1*01:18	B2RH57	239	253	QSIIQASAPLYVYEN	11.40
1178	DRB1*01:18	B2RH57	423	437	NLFFTVDGKKVILDK	11.75
1179	DRB1*01:18	B2RH57	237	251	SAQSIIQASAPLYVY	11.88
1180	DRB1*01:18	B2RH57	337	351	LVPYVAEINPHAVIT	12.15
1181	DRB1*01:18	B2RH57	420	434	RRTNLFFTVDGKKVI	12.18
1182	DRB1*01:18	B2RH57	2	16	KMKYFHHPSGLLPRL	12.24
1183	DRB1*01:18	B2RH57	331	345	NLDYGFLVPYVAEIN	12.69
1184	DRB1*01:18	B2RH57	336	350	FLVPYVAEINPHAVI	13.00
1185	DRB1*01:18	B2RH57	356	370	VTFENSLSFTVRIKG	13.94
1186	DRB1*01:18	B2RH57	330	344	ENLDYGFLVPYVAEI	13.97
1187	DRB1*01:18	B2RH57	332	346	LDYGFLVPYVAEINP	14.30
1188	DRB1*01:18	B2RH57	407	421	KVKALKPNEGIGIQRR	14.80
1189	DRB1*01:18	B2RH57	338	352	VPYVAEINPHAVITQ	15.15
1190	DRB1*01:18	B2RH57	1	15	MKMKYFHHPSGLLPRL	15.35
1191	DRB1*01:18	B2RH57	198	212	TKVQILRNAKNSRLL	15.41
1192	DRB1*01:18	B2RH57	3	17	MKYFHHPSGLLPRL	15.67
1193	DRB1*01:18	B2RH57	197	211	ITKVQILRNAKNSRL	16.13
1194	DRB1*01:18	B2RH57	199	213	KVQILRNAKNSRLL	16.24
1195	DRB1*01:18	B2RH57	240	254	SIIQASAPLYVYENI	16.49
1196	DRB1*01:18	B2RH57	171	185	NISLNRIAAKITLDI	17.11
1197	DRB1*01:18	B2RH57	354	368	NVVTFENSLSFTVRI	17.21
1198	DRB1*01:18	B2RH57	335	349	GFLVPYVAEINPHAV	18.63
1199	DRB1*01:18	B2RH57	329	343	VENLDYGFLVPYVAE	19.24
1200	DRB1*01:18	B2RH57	402	416	TVYTIKVKALKPNGI	19.60

1201	DRB1*01:18	B2RH57	333	347	DYGFLVPYVAEINPH	19.72
1202	DRB1*01:18	B2RH57	192	206	SDVIKITKVQILRNA	19.74
1203	DRB1*01:18	B2RH57	424	438	LFFTVDGKKVILDKN	19.94
1204	DRB1*01:18	B2RH57	236	250	GSAQSIIQASAPLYV	20.00
1205	DRB1*01:18	B2RH57	200	214	VQILRNAKNSRLLEG	20.07
1206	DRB1*01:18	B2RH57	170	184	ANISLNRIAAKITLD	20.19
1207	DRB1*01:18	B2RH57	353	367	DNVVTFENSLSFTVR	20.69
1208	DRB1*01:18	B2RH57	196	210	KITKVQILRNAKNSR	20.97
1209	DRB1*01:18	B2RH57	172	186	ISLNRIAAKITLDIK	21.25
1210	DRB1*01:18	B2RH57	169	183	QANISLNRIAAKITL	21.37
1211	DRB1*01:18	B2RH57	193	207	DVIKITKVQILRNAK	22.04
1212	DRB1*01:18	B2RH57	4	18	KYFHHPGGLLPRLLL	22.07
1213	DRB1*01:18	B2RH57	194	208	VIKITKVQILRNAKN	23.04
1214	DRB1*01:18	B2RH57	195	209	IKITKVQILRNAKNS	23.91
1215	DRB1*01:18	B2RH57	149	163	VRPFTMTGMATATLN	24.20
1216	DRB1*01:18	B2RH57	339	353	PYVAEINPHAVITQD	24.20
1217	DRB1*01:18	B2RH57	357	371	TFENSLSFTVRIKGR	24.33
1218	DRB1*01:18	B2RH57	191	205	GSDVIKITKVQILRN	25.54
1219	DRB1*01:18	B2RH57	334	348	YGFLVPYVAEINPHA	26.57
1220	DRB1*01:18	B2RH57	419	433	QRRTNLFFTVDGKKV	26.87
1221	DRB1*01:18	B2RH57	148	162	IVRPFTMTGMATATL	28.15
1222	DRB1*01:18	B2RH57	150	164	RPFTMTGMATATLNP	28.76
1223	DRB1*01:18	B2RH57	241	255	IIQASAPLYVYENIG	32.41
1224	DRB1*01:18	B2RH57	201	215	QILRNAKNSRLLEGT	32.58
1225	DRB1*01:18	B2RH57	270	284	EALYNGIKTRYAYV	33.42
1226	DRB1*01:18	B2RH57	190	204	PGSDVIKITKVQILR	33.49
1227	DRB1*01:18	B2RH57	328	342	TVENLDYGFLVPYVA	33.54
1228	DRB1*01:18	B2RH57	19	33	LLLLTMGAVACTKED	33.56
1229	DRB1*01:18	B2RH57	173	187	SLNRIAAKITLDIKQ	33.85
1230	DRB1*01:18	B2RH57	18	32	LLLLLLTMGAVACTKE	36.93
1231	DRB1*01:18	B2RH57	151	165	PFTMTGMATATLNPQ	36.98
1232	DRB1*01:18	B2RH57	312	326	MGEFSSLLLLTTTVLP	37.63
1233	DRB1*01:18	B2RH57	271	285	ALYNGIKTRYAYVN	37.92
1234	DRB1*01:18	B2RH57	71	85	RIFVFREGLNGLWVL	38.07
1235	DRB1*01:18	B2RH57	147	161	PIVRPFTMTGMATAT	38.70
1236	DRB1*01:18	B2RH57	70	84	VRIFVFREGLNGLWV	39.11
1237	DRB1*01:18	B2RH57	313	327	GEFSSLLLLTTTVLPW	41.85
1238	DRB1*01:18	B2RH57	5	19	YFHHPGGLLPRLLLL	41.96
1239	DRB1*01:18	B2RH57	168	182	VQANISLNRIAAKIT	42.83
1240	DRB1*01:18	B2RH57	269	283	VEALYNGIKTRYAY	43.20
1241	DRB1*01:18	B2RH57	311	325	KMGEFSSLLLLTTTVL	45.58
1242	DRB1*01:18	B2RH57	310	324	TKMGEFSSLLLLTTTV	46.36
1243	DRB1*01:18	B2RH57	20	34	LLLTMGAVACTKEDN	47.43

1244	DRB1*01:18	B2RH57	352	366	QDNVVTFENSLSFTV	47.63
1245	DRB1*01:18	B2RH57	6	20	FHHPSGLLPRLLLLL	48.40
1246	DRB1*01:18	B2RH57	69	83	KVRIFVFREGLNGLW	48.40
1247	DRB1*01:18	B2RH57	400	414	GTTVYTIKVKALKPN	48.71
1248	DRB1*01:18	B2RH57	111	125	RQIYVIANEPDALTT	49.07
1249	DRB1*01:18	B2RH57	17	31	LLLLLLTMGAVACTK	49.93
1250	DRB1*01:18	B2RH58	546	560	HWEYYTLNPLRLIYH	4.19
1251	DRB1*01:18	B2RH58	545	559	DHWEYYTLNPLRLIY	4.57
1252	DRB1*01:18	B2RH58	547	561	WEYYTLNPLRLIYHS	4.70
1253	DRB1*01:18	B2RH58	544	558	QDHWEYYTLNPLRLI	5.59
1254	DRB1*01:18	B2RH58	548	562	EYYTLNPLRLIYHSN	6.23
1255	DRB1*01:18	B2RH58	132	146	TSFLKTLVPNSILLQ	9.07
1256	DRB1*01:18	B2RH58	543	557	VQDHWEYYTLNPLRL	10.03
1257	DRB1*01:18	B2RH58	131	145	ETSFLKTLVPNSILL	10.22
1258	DRB1*01:18	B2RH58	630	644	KAIKILLPTASGNAT	10.24
1259	DRB1*01:18	B2RH58	629	643	DKAIKILLPTASGNA	10.79
1260	DRB1*01:18	B2RH58	530	544	PSFELASQLGATLVQ	11.67
1261	DRB1*01:18	B2RH58	133	147	SFLKTLVPNSILLQN	11.82
1262	DRB1*01:18	B2RH58	628	642	PDKAIKILLPTASGN	12.52
1263	DRB1*01:18	B2RH58	531	545	SFELASQLGATLVQD	12.70
1264	DRB1*01:18	B2RH58	130	144	SETSFLKTLVPNSIL	13.11
1265	DRB1*01:18	B2RH58	627	641	LPDKAIKILLPTASG	15.15
1266	DRB1*01:18	B2RH58	529	543	SPSFELASQLGATLV	15.43
1267	DRB1*01:18	B2RH58	532	546	FELASQLGATLVQDH	16.22
1268	DRB1*01:18	B2RH58	631	645	AIKILLPTASGNATE	16.56
1269	DRB1*01:18	B2RH58	549	563	YYTLNPLRLIYHSNQ	17.85
1270	DRB1*01:18	B2RH58	110	124	SFKIYLVANVNFSGS	19.48
1271	DRB1*01:18	B2RH58	134	148	FLKTLVPNSILLQND	19.72
1272	DRB1*01:18	B2RH58	111	125	FKIYLVANVNFSGSF	19.90
1273	DRB1*01:18	B2RH58	102	116	YGQFNGNNSFKIYLV	20.16
1274	DRB1*01:18	B2RH58	3	17	TNRILNIICPPILFL	21.04
1275	DRB1*01:18	B2RH58	4	18	NRILNIICPPILFLL	21.20
1276	DRB1*01:18	B2RH58	410	424	KIKVRSILPINNIPK	21.50
1277	DRB1*01:18	B2RH58	112	126	KIYLVANVNFSGSFE	21.66
1278	DRB1*01:18	B2RH58	109	123	NSFKIYLVANVNFSG	23.23
1279	DRB1*01:18	B2RH58	129	143	ASETSFLKTLVPNSI	24.61
1280	DRB1*01:18	B2RH58	408	422	TKKIKVRSILPINNI	25.83
1281	DRB1*01:18	B2RH58	409	423	KKIKVRSILPINNIP	25.84
1282	DRB1*01:18	B2RH58	2	16	RTNRILNIICPPILF	26.70
1283	DRB1*01:18	B2RH58	499	513	VGFYKKS GSSYTLKH	26.87
1284	DRB1*01:18	B2RH58	101	115	MYGQFNGNNSFKIYL	27.22
1285	DRB1*01:18	B2RH58	108	122	NNSFKIYLVANVNFS	27.23
1286	DRB1*01:18	B2RH58	626	640	GLPDKAIKILLPTAS	27.60

1287	DRB1*01:18	B2RH58	411	425	IKVRSILPINNIPKD	27.97
1288	DRB1*01:18	B2RH58	439	453	KIKIRQNPSQFIINT	28.24
1289	DRB1*01:18	B2RH58	151	165	PEDKFAMIGSVEKQI	28.91
1290	DRB1*01:18	B2RH58	152	166	EDKFAMIGSVEKQIN	29.49
1291	DRB1*01:18	B2RH58	438	452	KKIKIRQNPSQFIIN	29.58
1292	DRB1*01:18	B2RH58	5	19	RILNIICPPILFLLV	30.35
1293	DRB1*01:18	B2RH58	498	512	EVGFYKKS GSSYTLK	30.48
1294	DRB1*01:18	B2RH58	153	167	DKFAMIGSVEKQINM	30.94
1295	DRB1*01:18	B2RH58	103	117	GQFNGNNSFKIYLVA	31.14
1296	DRB1*01:18	B2RH58	528	542	VSPSFELASQLGATL	31.19
1297	DRB1*01:18	B2RH58	298	312	NHLYDMAVTIEVLGS	31.64
1298	DRB1*01:18	B2RH58	260	274	RPEFVMMLKLKKTGT	32.75
1299	DRB1*01:18	B2RH58	412	426	KVRSILPINNIPKDI	33.14
1300	DRB1*01:18	B2RH58	259	273	GRPEFVMMLKLKKTG	34.19
1301	DRB1*01:18	B2RH58	447	461	SQFIINTFGTKSSWQ	35.46
1302	DRB1*01:18	B2RH58	297	311	SNHLYDMAVTIEVLG	35.78
1303	DRB1*01:18	B2RH58	533	547	ELASQLGATLVQDHW	36.18
1304	DRB1*01:18	B2RH58	437	451	EKKIKIRQNPSQFII	36.62
1305	DRB1*01:18	B2RH58	154	168	KFAMIGSVEKQINMA	36.87
1306	DRB1*01:18	B2RH58	107	121	GNNSFKIYLVANVNF	37.16
1307	DRB1*01:18	B2RH58	258	272	EGRPEFVMMLKLKKT	37.39
1308	DRB1*01:18	B2RH58	296	310	RSNHLYDMAVTIEVL	37.70
1309	DRB1*01:18	B2RH58	475	489	IYQIVVLSPPADGNM	38.82
1310	DRB1*01:18	B2RH58	100	114	SMYGQFNGNNSFKIY	39.80
1311	DRB1*01:18	B2RH58	37	51	TSSLFLQVQPYNQRS	39.87
1312	DRB1*01:18	B2RH58	67	81	LTLVIFYKNGTKVWQA	40.17
1313	DRB1*01:18	B2RH58	446	460	PSQFIINTFGTKSSW	40.78
1314	DRB1*01:18	B2RH58	342	356	VQYLEVIPQETVMNM	41.13
1315	DRB1*01:18	B2RH58	360	374	IELDYFSSHSLPPA	41.34
1316	DRB1*01:18	B2RH58	177	191	SIELKRVAAKLRLKK	41.55
1317	DRB1*01:18	B2RH58	632	646	IKILLPTASGNATEQ	42.25
1318	DRB1*01:18	B2RH58	474	488	AIYQIVVLSPPADGN	42.60
1319	DRB1*01:18	B2RH58	150	164	KPEDKFAMIGSVEKQ	42.64
1320	DRB1*01:18	B2RH58	473	487	KAIYQIVVLSPPADG	42.67
1321	DRB1*01:18	B2RH58	500	514	GFYKKS GSSYTLKHT	42.72
1322	DRB1*01:18	B2RH58	106	120	NGNNSFKIYLVANVN	43.02
1323	DRB1*01:18	B2RH58	299	313	HLYDMAVTIEVLGSL	43.19
1324	DRB1*01:18	B2RH58	261	275	PEFVMMLKLKKTGTD	43.83
1325	DRB1*01:18	B2RH58	176	190	GSIELKRVAAKLRLK	44.18
1326	DRB1*01:18	B2RH58	262	276	EFVMMLKLKKTGTDD	44.62
1327	DRB1*01:18	B2RH58	407	421	NTKKIKVRSILPINN	44.74
1328	DRB1*01:18	B2RH58	183	197	VAAKLRLKKPVLNIS	45.14
1329	DRB1*01:18	B2RH58	38	52	SSLFLQVQPYNQARSE	45.91

1330	DRB1*01:18	B2RH58	497	511	KEVGIFYKKSGSSYTL	47.17
1331	DRB1*01:18	B2RH58	104	118	QFNGNNSFKIYLVAN	47.25
1332	DRB1*01:18	B2RH58	440	454	IKIRQNPSQFIINTF	48.76
1333	DRB1*01:18	B2RH58	476	490	YQIVVLSPPADGNMI	48.76
1334	DRB1*01:18	B2RH58	36	50	ETSSLFLQVQPYNQR	49.47
1335	DRB1*01:18	B2RH58	175	189	LGSIELKRVAAKLRL	49.57
1336	DRB1*01:18	B2RH59	431	445	EKYQYVFFKANTSSA	7.46
1337	DRB1*01:18	B2RH59	432	446	KYQYVFFKANTSSAE	7.65
1338	DRB1*01:18	B2RH59	433	447	YQYVFFKANTSSAEN	8.73
1339	DRB1*01:18	B2RH59	430	444	REKYQYVFFKANTSS	9.38
1340	DRB1*01:18	B2RH59	314	328	NNIFLSAEVQALPAF	10.50
1341	DRB1*01:18	B2RH59	434	448	QYVFFKANTSSAENN	11.64
1342	DRB1*01:18	B2RH59	315	329	NIFLSAEVQALPAFS	12.49
1343	DRB1*01:18	B2RH59	162	176	MAKFSLSVTPPAESK	13.11
1344	DRB1*01:18	B2RH59	313	327	ANNIFLSAEVQALPA	13.56
1345	DRB1*01:18	B2RH59	503	517	KTLYKYVLTTMPQNK	14.35
1346	DRB1*01:18	B2RH59	429	443	VREKYQYVFFKANTS	15.33
1347	DRB1*01:18	B2RH59	97	111	VERRIHFIANYELAD	15.84
1348	DRB1*01:18	B2RH59	96	110	EVERRIHFIANYELA	16.02
1349	DRB1*01:18	B2RH59	163	177	AKFSLSVTPPAESKL	17.50
1350	DRB1*01:18	B2RH59	161	175	NMAKFSLSVTPPAES	17.56
1351	DRB1*01:18	B2RH59	98	112	ERRIHFIANYELADP	17.77
1352	DRB1*01:18	B2RH59	154	168	GQIQLLRNMAKFSL	17.97
1353	DRB1*01:18	B2RH59	99	113	RRIHFIANYELADPS	18.11
1354	DRB1*01:18	B2RH59	153	167	LGQIQLLRNMAKFSL	18.29
1355	DRB1*01:18	B2RH59	504	518	TLYKYVLTTMPQNK	19.57
1356	DRB1*01:18	B2RH59	493	507	GMILGIEGGKTLYK	19.68
1357	DRB1*01:18	B2RH59	312	326	AANNIFLSAEVQALP	19.98
1358	DRB1*01:18	B2RH59	155	169	QIQLLRNMAKFSLSV	20.30
1359	DRB1*01:18	B2RH59	502	516	GKTLYKYVLTTMPQN	20.42
1360	DRB1*01:18	B2RH59	284	298	TRNHFYKMILKKAKA	20.84
1361	DRB1*01:18	B2RH59	494	508	GMILGIEGGKTLYKY	21.64
1362	DRB1*01:18	B2RH59	505	519	LYKYVLTTMPQNKEL	21.74
1363	DRB1*01:18	B2RH59	285	299	RNHFYKMILKKAKAP	22.16
1364	DRB1*01:18	B2RH59	152	166	NLGQIQLLRNMAKFS	22.39
1365	DRB1*01:18	B2RH59	435	449	YVFFKANTSSAENNQ	22.41
1366	DRB1*01:18	B2RH59	316	330	IFLSAEVQALPAFSD	22.68
1367	DRB1*01:18	B2RH59	160	174	RNMAKFSLSVTPPAE	23.07
1368	DRB1*01:18	B2RH59	485	499	TEHFYPKTGGMILGI	24.10
1369	DRB1*01:18	B2RH59	339	353	HTYMFVQGEPSGTF	24.35
1370	DRB1*01:18	B2RH59	283	297	ITRNHFYKMILKKAK	24.54
1371	DRB1*01:18	B2RH59	268	282	YYKLDFVDTNKKVRYN	25.40
1372	DRB1*01:18	B2RH59	164	178	KFSLSVTPPAESKLY	25.98

1373	DRB1*01:18	B2RH59	418	432	NPDLKRSVTVLVREK	26.84
1374	DRB1*01:18	B2RH59	267	281	TYYKLDFVDTNKVRY	27.09
1375	DRB1*01:18	B2RH59	286	300	NHFKYKILKKAKAPG	28.17
1376	DRB1*01:18	B2RH59	340	354	TYMVVQGEPSGTFQ	28.70
1377	DRB1*01:18	B2RH59	151	165	QNLGQIQLLRNMAKF	28.89
1378	DRB1*01:18	B2RH59	278	292	KVRYNITRNHFYKMI	28.96
1379	DRB1*01:18	B2RH59	492	506	TGGMILGIEGGKTLY	29.26
1380	DRB1*01:18	B2RH59	156	170	IQLLRNMAKFSLSVT	29.43
1381	DRB1*01:18	B2RH59	249	263	GITCLILKARYNLPN	30.40
1382	DRB1*01:18	B2RH59	12	26	YVLIAFMAVSCVADK	31.06
1383	DRB1*01:18	B2RH59	486	500	EHFYPKTGGMILGIE	31.31
1384	DRB1*01:18	B2RH59	520	534	QFRFKSNKVNSAENI	31.97
1385	DRB1*01:18	B2RH59	248	262	AGITCLILKARYNLP	31.99
1386	DRB1*01:18	B2RH59	311	325	AAANNIFLSAEVQAL	32.46
1387	DRB1*01:18	B2RH59	419	433	PDLKRSVTVLVREKY	32.81
1388	DRB1*01:18	B2RH59	501	515	GGKTLYKYVLTTMPQ	33.23
1389	DRB1*01:18	B2RH59	287	301	HFYKILKKAKAPGR	33.33
1390	DRB1*01:18	B2RH59	484	498	YTEHFYPKTGGMILG	33.53
1391	DRB1*01:18	B2RH59	266	280	YTYYKLDFVDTNKVR	33.96
1392	DRB1*01:18	B2RH59	519	533	LQFRFKSNKVNSAEN	34.42
1393	DRB1*01:18	B2RH59	366	380	DYSKLTVSVSTPTGQ	34.47
1394	DRB1*01:18	B2RH59	13	27	VLIAFMAVSCVADKS	34.65
1395	DRB1*01:18	B2RH59	100	114	RIHFANYELADPSV	35.64
1396	DRB1*01:18	B2RH59	495	509	MILGIEGGKTLYKYV	35.76
1397	DRB1*01:18	B2RH59	277	291	NKVRYNITRNHFYKM	36.13
1398	DRB1*01:18	B2RH59	247	261	GAGITCLILKARYNL	36.21
1399	DRB1*01:18	B2RH59	518	532	ELQFRFKSNKVNSAE	37.01
1400	DRB1*01:18	B2RH59	159	173	LRNMAKFSLSVTPPA	37.21
1401	DRB1*01:18	B2RH59	250	264	ITCLILKARYNLPNA	37.92
1402	DRB1*01:18	B2RH59	506	520	YKYVLTTMPQNKELQ	37.93
1403	DRB1*01:18	B2RH59	341	355	YMVVQGEPSGTFQA	38.09
1404	DRB1*01:18	B2RH59	365	379	PDYSKLTVSVSTPTG	38.44
1405	DRB1*01:18	B2RH59	417	431	GNPDLKRSVTVLVRE	38.49
1406	DRB1*01:18	B2RH59	1	15	MKSKSIIAQLLYVLI	38.86
1407	DRB1*01:18	B2RH59	95	109	SEVERRIHFIANYEL	39.57
1408	DRB1*01:18	B2RH59	282	296	NITRNHFYKMILKKA	39.72
1409	DRB1*01:18	B2RH59	483	497	VYTEHFYPKTGGMIL	40.37
1410	DRB1*01:18	B2RH59	279	293	VRYNITRNHFYKMIL	40.97
1411	DRB1*01:18	B2RH59	269	283	YKLDFVDTNKVRYNI	41.29
1412	DRB1*01:18	B2RH59	517	531	KELQFRFKSNKVNSA	41.46
1413	DRB1*01:18	B2RH59	338	352	DHTYMVVQGEPSGT	42.25
1414	DRB1*01:18	B2RH59	157	171	QLLRNMAKFSLSVTP	42.33
1415	DRB1*01:18	B2RH59	458	472	QGNELLISAKLPDVL	42.38

1416	DRB1*01:18	B2RH59	134	148	ETIRMWARISYPSIA	42.69
1417	DRB1*01:18	B2RH59	367	381	YSKLTVSVSTPTGQQ	42.91
1418	DRB1*01:18	B2RH59	14	28	LIAFMAVSCVADKSE	43.05
1419	DRB1*01:18	B2RH59	133	147	LETIRMWARISYPSI	44.23
1420	DRB1*01:18	B2RH59	468	482	LPDVLNAALLPITFK	44.88
1421	DRB1*01:18	B2RH59	469	483	PDVLNAALLPITFKV	44.91
1422	DRB1*01:18	B2RH59	416	430	QGNPDLKRSVTVLVR	45.41
1423	DRB1*01:18	B2RH59	521	535	FRFKSNKVNSAENIA	45.48
1424	DRB1*01:18	B2RH59	364	378	NPDYSKLTVSVSTPT	45.81
1425	DRB1*01:18	B2RH59	135	149	TIRMWARISYPSIAP	47.49
1426	DRB1*01:18	B2RH59	470	484	DVLNAALLPITFKVY	47.58
1427	DRB1*01:18	B2RH59	459	473	GNELLISAKLPDVLN	47.69
1428	DRB1*01:18	B2RH59	2	16	KSKSIIAQLLYVLIA	47.77
1429	DRB1*01:18	B2RH59	276	290	TNKVRYNITRNHFYK	47.77
1430	DRB1*01:18	B2RH59	39	53	SGSIVSLEHHGLRGA	48.75
1431	DRB1*01:18	B2RH59	457	471	GQGNELLISAKLPDV	48.81
1432	DRB1*01:18	B2RHG4	1	15	MKKYLLYASLLTSVL	17.41
1433	DRB1*01:18	B2RHG4	2	16	KKYLLYASLLTSVLL	18.33
1434	DRB1*01:18	B2RHG4	78	92	PAKYIAGNTFSGGI	19.24
1435	DRB1*01:18	B2RHG4	79	93	AKYIAGNTFSGGIW	20.13
1436	DRB1*01:18	B2RHG4	192	206	EKFQIVPIIVNGSL	22.33
1437	DRB1*01:18	B2RHG4	191	205	SEKFQIVPIIVNGSL	22.39
1438	DRB1*01:18	B2RHG4	193	207	KFQIVPIIVNGSLSE	24.49
1439	DRB1*01:18	B2RHG4	4	18	YLLYASLLTSVLLFS	24.52
1440	DRB1*01:18	B2RHG4	112	126	RKVYVVANVDNAVKT	24.99
1441	DRB1*01:18	B2RHG4	68	82	LLLLFDQSGANPAKY	25.06
1442	DRB1*01:18	B2RHG4	3	17	KYLLYASLLTSVLLF	27.34
1443	DRB1*01:18	B2RHG4	77	91	NPAKYIAGNTFSGG	27.57
1444	DRB1*01:18	B2RHG4	111	125	ERKVYVVANVDNAVK	27.93
1445	DRB1*01:18	B2RHG4	5	19	LLYASLLTSVLLFSC	30.82
1446	DRB1*01:18	B2RHG4	190	204	LSEKFQIVPIIVNGS	31.40
1447	DRB1*01:18	B2RHG4	166	180	FLANRLLDNVPLVRA	32.13
1448	DRB1*01:18	B2RHG4	80	94	KYIAGNTFSGGIWL	32.22
1449	DRB1*01:18	B2RHG4	113	127	KVYVVANVDNAVKTA	32.28
1450	DRB1*01:18	B2RHG4	67	81	YLLLFDQSGANPAKY	32.42
1451	DRB1*01:18	B2RHG4	6	20	LYASLLTSVLLFSCS	34.23
1452	DRB1*01:18	B2RHG4	76	90	ANPAKYIAGNTFSG	34.65
1453	DRB1*01:18	B2RHG4	167	181	LANRLLDNVPLVRAI	38.45
1454	DRB1*01:18	B2RHG4	165	179	DFLANRLLDNVPLVR	38.48
1455	DRB1*01:18	B2RHG4	66	80	LYLLLFDQSGANPAK	40.01
1456	DRB1*01:18	B2RHG4	189	203	SLSEKFQIVPIIVNG	40.16
1457	DRB1*01:18	B2RHG4	69	83	LLFDQSGANPAKYI	41.88
1458	DRB1*01:18	B2RHG4	194	208	FQIVPIIVNGSLSEF	42.59

1459	DRB1*01:18	B2RHG4	152	166	IASPFLMSGNKTHDF	44.83
1460	DRB1*01:18	B2RHG4	153	167	ASPFLMSGNKTHDFL	45.87
1461	DRB1*01:18	B2RHG4	168	182	ANRLLDNVPLVRAIA	46.59
1462	DRB1*01:18	B2RHG4	110	124	GERKVYVVANVDNAV	48.14
1463	DRB1*01:18	B2RHG4	164	178	HDFLANRLLDNVPLV	49.58
1464	DRB1*01:20	A0PA81	203	217	YTGLAELIGNAVQYR	8.10
1465	DRB1*01:20	A0PA81	204	218	TGLAELIGNAVQYRP	10.59
1466	DRB1*01:20	A0PA81	202	216	TYTGLAELIGNAVQY	10.83
1467	DRB1*01:20	A0PA81	263	277	GVPFIPVIGKMLNIY	11.02
1468	DRB1*01:20	A0PA81	264	278	VPFIPVIGKMLNIYI	11.96
1469	DRB1*01:20	A0PA81	262	276	DGVFPFIPVIGKMLNI	12.51
1470	DRB1*01:20	A0PA81	274	288	LNIIYIDLRGANLNVL	13.34
1471	DRB1*01:20	A0PA81	265	279	PFIPVIGKMLNIYID	14.90
1472	DRB1*01:20	A0PA81	275	289	NIYIDLRGANLNVLV	14.91
1473	DRB1*01:20	A0PA81	201	215	DTYTGLAELIGNAVQ	15.12
1474	DRB1*01:20	A0PA81	273	287	MLNIYIDLRGANLNV	15.18
1475	DRB1*01:20	A0PA81	261	275	SDGVFPFIPVIGKMLN	15.74
1476	DRB1*01:20	A0PA81	205	219	GLAELIGNAVQYRPD	16.33
1477	DRB1*01:20	A0PA81	267	281	IPVIGKMLNIYIDLR	16.48
1478	DRB1*01:20	A0PA81	268	282	PVIGKMLNIYIDLRG	17.83
1479	DRB1*01:20	A0PA81	272	286	KMLNIYIDLRGANLN	18.92
1480	DRB1*01:20	A0PA81	70	84	IDRLMMDAAQVAARK	18.96
1481	DRB1*01:20	A0PA81	276	290	IYIDLRGANLNVLV	20.22
1482	DRB1*01:20	A0PA81	69	83	RIDRLMMDAAQVAAR	21.58
1483	DRB1*01:20	A0PA81	119	133	KDLFFRLSSTDGIAQ	23.03
1484	DRB1*01:20	A0PA81	266	280	FIPVIGKMLNIYIDL	23.16
1485	DRB1*01:20	A0PA81	118	132	VKDLFFRLSSTDGIA	26.66
1486	DRB1*01:20	A0PA81	285	299	LNVLVSVTPWDVVQQ	26.75
1487	DRB1*01:20	A0PA81	71	85	DRLMMDAAQVAARKP	26.81
1488	DRB1*01:20	A0PA81	68	82	RRIDRLMMDAAQVAA	28.42
1489	DRB1*01:20	A0PA81	260	274	GSDGVFPFIPVIGKML	29.72
1490	DRB1*01:20	A0PA81	271	285	GKMLNIYIDLRGANL	30.04
1491	DRB1*01:20	A0PA81	269	283	VIGKMLNIYIDLRGA	30.39
1492	DRB1*01:20	A0PA81	286	300	NVLVSVTPWDVVQQY	30.44
1493	DRB1*01:20	A0PA81	72	86	RLMMDAAQVAARKPI	30.77
1494	DRB1*01:20	A0PA81	120	134	DLFFRLSSTDGIAQS	35.25
1495	DRB1*01:20	A0PA81	284	298	NLNVLVSVTPWDVVQ	36.50
1496	DRB1*01:20	A0PA81	67	81	GRRIDRLMMDAAQVA	40.09
1497	DRB1*01:20	A0PA81	200	214	PDTYTGLAELIGNAV	40.22
1498	DRB1*01:20	A0PA81	277	291	YIDLRGANLNVLVSV	42.43
1499	DRB1*01:20	A0PA81	117	131	NVKDLFFRLSSTDGI	42.98
1500	DRB1*01:20	A0PA81	59	73	VIFVFDETGRRIDRL	43.58
1501	DRB1*01:20	A0PA81	13	27	ILLVAGMFGGCIKED	46.36

1502	DRB1*01:20	AOPA81	12	26	LILLVAGMFGGCIKE	47.27
1503	DRB1*01:20	B2RH54	163	177	PLKIKRVHARMAFTE	6.67
1504	DRB1*01:20	B2RH54	162	176	DPLKIKRVHARMAFT	6.90
1505	DRB1*01:20	B2RH54	164	178	LKIKRVHARMAFTEI	7.64
1506	DRB1*01:20	B2RH54	161	175	NDPLKIKRVHARMAF	8.23
1507	DRB1*01:20	B2RH54	91	105	QRTLVMANTGAMEL	10.45
1508	DRB1*01:20	B2RH54	92	106	RTLVMANTGAMELV	11.00
1509	DRB1*01:20	B2RH54	165	179	KIKRVHARMAFTEIK	12.11
1510	DRB1*01:20	B2RH54	90	104	GQRTLVMANTGAME	12.22
1511	DRB1*01:20	B2RH54	4	18	TKFFLLGLAALAMTA	12.44
1512	DRB1*01:20	B2RH54	108	122	KTAEVKALTTELTA	14.39
1513	DRB1*01:20	B2RH54	89	103	AGQRTLVMANTGAM	14.54
1514	DRB1*01:20	B2RH54	109	123	TLAEVKALTTELTAE	14.97
1515	DRB1*01:20	B2RH54	110	124	LAEVKALTTELTAEN	16.00
1516	DRB1*01:20	B2RH54	3	17	KTKFFLLGLAALAMT	16.32
1517	DRB1*01:20	B2RH54	160	174	ENDPLKIKRVHARMA	18.40
1518	DRB1*01:20	B2RH54	128	142	AGLIMTAEPKTIVLK	19.39
1519	DRB1*01:20	B2RH54	175	189	FTEIKVQMSAAYDNI	20.39
1520	DRB1*01:20	B2RH54	93	107	TLVMANTGAMELVG	20.72
1521	DRB1*01:20	B2RH54	5	19	KFFLLGLAALAMTAC	21.02
1522	DRB1*01:20	B2RH54	127	141	AAGLIMTAEPKTIVL	21.78
1523	DRB1*01:20	B2RH54	174	188	AFTEIKVQMSAAYDN	21.99
1524	DRB1*01:20	B2RH54	172	186	RMAFTEIKVQMSAAY	22.02
1525	DRB1*01:20	B2RH54	173	187	MAFTEIKVQMSAAYD	22.07
1526	DRB1*01:20	B2RH54	111	125	AEVKALTTELTAENQ	22.66
1527	DRB1*01:20	B2RH54	195	209	EKIYGLIAKKQSNLF	22.69
1528	DRB1*01:20	B2RH54	107	121	GKTLAEVKALTTELT	23.26
1529	DRB1*01:20	B2RH54	2	16	KKTKFFLLGLAALAM	24.17
1530	DRB1*01:20	B2RH54	176	190	TEIKVQMSAAYDNIY	24.66
1531	DRB1*01:20	B2RH54	194	208	PEKIYGLIAKKQSNL	25.53
1532	DRB1*01:20	B2RH54	129	143	GLIMTAEPKTIVLKA	25.91
1533	DRB1*01:20	B2RH54	137	151	KTIVLKAGKNYIGYS	26.12
1534	DRB1*01:20	B2RH54	36	50	SVVLKTSNSNRAFGV	28.27
1535	DRB1*01:20	B2RH54	196	210	KIYGLIAKKQSNLFG	29.40
1536	DRB1*01:20	B2RH54	177	191	EIKVQMSAAYDNIYT	29.76
1537	DRB1*01:20	B2RH54	189	203	IYTFVPEKIYGLIAK	29.76
1538	DRB1*01:20	B2RH54	210	224	GATLVNADANYLTGS	30.01
1539	DRB1*01:20	B2RH54	88	102	SAGQRTLVMANTGA	30.48
1540	DRB1*01:20	B2RH54	188	202	NIYTFVPEKIYGLIA	30.88
1541	DRB1*01:20	B2RH54	138	152	TIVLKAGKNYIGYSG	31.28
1542	DRB1*01:20	B2RH54	211	225	ATLVNADANYLTGSL	31.28
1543	DRB1*01:20	B2RH54	186	200	YDNIYTFVPEKIYGL	31.38
1544	DRB1*01:20	B2RH54	112	126	EVKALTTELTAENQE	31.99

1545	DRB1*01:20	B2RH54	193	207	VPEKIYGLIAKKQSN	32.31
1546	DRB1*01:20	B2RH54	192	206	FVPEKIYGLIAKKQS	32.45
1547	DRB1*01:20	B2RH54	136	150	PKTIVLKAGKNYIGY	32.58
1548	DRB1*01:20	B2RH54	82	96	VEDIKCSAGQRTLTV	32.86
1549	DRB1*01:20	B2RH54	126	140	EAAGLIMTAEPKTIV	33.03
1550	DRB1*01:20	B2RH54	106	120	VGKTLAEVKALTTTEL	33.20
1551	DRB1*01:20	B2RH54	209	223	FGATLVNADANYLTG	33.60
1552	DRB1*01:20	B2RH54	35	49	ISVVLKTSNSNRAFG	34.37
1553	DRB1*01:20	B2RH54	191	205	TFVPEKIYGLIAKKQ	35.60
1554	DRB1*01:20	B2RH54	187	201	DNIYTFVPEKIYGLI	35.62
1555	DRB1*01:20	B2RH54	94	108	LVVMANTGAMELVGK	35.97
1556	DRB1*01:20	B2RH54	34	48	TISVVLKTSNSNRAF	36.60
1557	DRB1*01:20	B2RH54	7	21	FLLGLAALAMTACNK	38.20
1558	DRB1*01:20	B2RH54	190	204	YTFVPEKIYGLIAKK	38.30
1559	DRB1*01:20	B2RH54	208	222	LFGATLVNADANYLT	39.69
1560	DRB1*01:20	B2RH54	37	51	VVLKTSNSNRAFGVG	40.69
1561	DRB1*01:20	B2RH54	130	144	LIMTAEPKTIVLKAG	41.45
1562	DRB1*01:20	B2RH54	185	199	AYDNIYTFVPEKIYG	42.03
1563	DRB1*01:20	B2RH54	171	185	ARMAFTEIKVQMSAA	45.72
1564	DRB1*01:20	B2RH54	166	180	IKRVHARMAFTEIKV	46.14
1565	DRB1*01:20	B2RH54	83	97	EDIKCSAGQRTLTVVM	47.53
1566	DRB1*01:20	B2RH54	184	198	AAYDNIYTFVPEKIY	47.79
1567	DRB1*01:20	B2RH54	139	153	IVLKAGKNYIGYSGT	48.42
1568	DRB1*01:20	B2RH57	405	419	TIKVKALKPNGIGIQ	8.61
1569	DRB1*01:20	B2RH57	404	418	YTIKVKALKPNGIGI	8.67
1570	DRB1*01:20	B2RH57	238	252	AQSIIQASAPLYVYE	9.54
1571	DRB1*01:20	B2RH57	406	420	IKVKALKPNGIGIQOR	9.58
1572	DRB1*01:20	B2RH57	239	253	QSIIQASAPLYVYEN	9.59
1573	DRB1*01:20	B2RH57	237	251	SAQSIIQASAPLYVY	10.12
1574	DRB1*01:20	B2RH57	198	212	TKVQILRNAKNSRLL	11.79
1575	DRB1*01:20	B2RH57	199	213	KVQILRNAKNSRLLLE	12.11
1576	DRB1*01:20	B2RH57	403	417	VYTIKVKALKPNGIGI	12.11
1577	DRB1*01:20	B2RH57	197	211	ITKVQILRNAKNSRL	13.24
1578	DRB1*01:20	B2RH57	240	254	SIIQASAPLYVYENI	13.31
1579	DRB1*01:20	B2RH57	200	214	VQILRNAKNSRLLLEG	13.97
1580	DRB1*01:20	B2RH57	407	421	KVKALKPNGIGIQRR	16.65
1581	DRB1*01:20	B2RH57	236	250	GSAQSIIQASAPLYV	17.01
1582	DRB1*01:20	B2RH57	192	206	SDVIKITKVQILRNA	17.26
1583	DRB1*01:20	B2RH57	193	207	DVIKITKVQILRNAK	17.63
1584	DRB1*01:20	B2RH57	171	185	NISLNRIA AKITLDI	17.82
1585	DRB1*01:20	B2RH57	194	208	VIKITKVQILRNAKN	17.93
1586	DRB1*01:20	B2RH57	196	210	KITKVQILRNAKNSR	18.08
1587	DRB1*01:20	B2RH57	402	416	TVYTIKVKALKPNGI	18.77

1588	DRB1*01:20	B2RH57	195	209	IKITKVQILRNAKNS	19.70
1589	DRB1*01:20	B2RH57	170	184	ANISLNRIAAKITLD	20.69
1590	DRB1*01:20	B2RH57	169	183	QANISLNRIAAKITL	22.14
1591	DRB1*01:20	B2RH57	191	205	GSDVIKITYKVQILRN	22.47
1592	DRB1*01:20	B2RH57	172	186	ISLNRIAAKITLDIK	22.69
1593	DRB1*01:20	B2RH57	201	215	QILRNAKNSRLLEGT	23.23
1594	DRB1*01:20	B2RH57	241	255	IIQASAPLYVYENIG	26.54
1595	DRB1*01:20	B2RH57	337	351	LVPYVAEINPHAVIT	28.59
1596	DRB1*01:20	B2RH57	421	435	RTNLFFTVDGKKVIL	28.77
1597	DRB1*01:20	B2RH57	190	204	PGSDVIKITYKVQILR	29.87
1598	DRB1*01:20	B2RH57	336	350	FLVPYVAEINPHAVI	30.61
1599	DRB1*01:20	B2RH57	19	33	LLLLTMGAVACTKED	33.30
1600	DRB1*01:20	B2RH57	149	163	VRPFTMTGMATATLN	33.71
1601	DRB1*01:20	B2RH57	338	352	VPYVAEINPHAVITQ	34.56
1602	DRB1*01:20	B2RH57	150	164	RPFTMTGMATATLNP	34.74
1603	DRB1*01:20	B2RH57	18	32	LLLLLTMGAVACTKE	34.78
1604	DRB1*01:20	B2RH57	173	187	SLNRIAAKITLDIKQ	34.90
1605	DRB1*01:20	B2RH57	422	436	TNLFFTVDGKKVILD	35.47
1606	DRB1*01:20	B2RH57	151	165	PFTMTGMATATLNPQ	36.05
1607	DRB1*01:20	B2RH57	355	369	VVTFENSLSFTVRIK	38.18
1608	DRB1*01:20	B2RH57	168	182	VQANISLNRIAAKIT	38.39
1609	DRB1*01:20	B2RH57	420	434	RRTNLFFTVDGKKVI	41.08
1610	DRB1*01:20	B2RH57	331	345	NLDYGFLVPYVAEIN	41.51
1611	DRB1*01:20	B2RH57	152	166	FTMTGMATATLNPQG	41.87
1612	DRB1*01:20	B2RH57	423	437	NLFFTVDGKKVILDK	42.77
1613	DRB1*01:20	B2RH57	400	414	GTTVYTIKVKALKPN	42.88
1614	DRB1*01:20	B2RH57	235	249	NGSAQSIIQASAPLY	44.68
1615	DRB1*01:20	B2RH57	148	162	IVRPFTMTGMATATL	45.15
1616	DRB1*01:20	B2RH57	356	370	VTFENSLSFTVRIKG	45.57
1617	DRB1*01:20	B2RH57	17	31	LLLLLLTMGAVACTK	45.88
1618	DRB1*01:20	B2RH57	332	346	LDYGFLVPYVAEINP	46.29
1619	DRB1*01:20	B2RH57	335	349	GFLVPYVAEINPHAV	46.79
1620	DRB1*01:20	B2RH57	399	413	DGTTVYTIKVKALKP	47.38
1621	DRB1*01:20	B2RH57	20	34	LLLTMGAVACTKEDN	47.41
1622	DRB1*01:20	B2RH57	2	16	KMKYFHHPSGLLPRL	47.87
1623	DRB1*01:20	B2RH57	6	20	FHHPSGLLPRLLLLL	48.23
1624	DRB1*01:20	B2RH57	330	344	ENLDYGFLVPYVAEI	48.48
1625	DRB1*01:20	B2RH57	167	181	TVQANISLNRIAAKI	48.57
1626	DRB1*01:20	B2RH57	401	415	TTVYTIKVKALKPNG	49.05
1627	DRB1*01:20	B2RH57	354	368	NVVTFENSLSFTVRI	49.22
1628	DRB1*01:20	B2RH58	630	644	KAIKILLPTASGNAT	8.44
1629	DRB1*01:20	B2RH58	132	146	TSFLKTLVPNSILLQ	8.99
1630	DRB1*01:20	B2RH58	629	643	DKAIKILLPTASGNA	9.42

1631	DRB1*01:20	B2RH58	131	145	ETSFLKTLVPNSILL	10.35
1632	DRB1*01:20	B2RH58	628	642	PDKAIKILLPTASGN	10.94
1633	DRB1*01:20	B2RH58	530	544	PSFELASQLGATLVQ	11.02
1634	DRB1*01:20	B2RH58	133	147	SFLKTLVPNSILLQN	11.45
1635	DRB1*01:20	B2RH58	546	560	HWEYYTLNPLRLIYH	11.53
1636	DRB1*01:20	B2RH58	531	545	SFELASQLGATLVQD	11.59
1637	DRB1*01:20	B2RH58	627	641	LPDKAIKILLPTASG	12.29
1638	DRB1*01:20	B2RH58	631	645	AIKILLPTASGNATE	12.73
1639	DRB1*01:20	B2RH58	130	144	SETSFLKTLVPNSIL	12.90
1640	DRB1*01:20	B2RH58	547	561	WEYYTLNPLRLIYHS	13.14
1641	DRB1*01:20	B2RH58	545	559	DHWEYYTLNPLRLIY	13.44
1642	DRB1*01:20	B2RH58	532	546	FELASQLGATLVQDH	14.32
1643	DRB1*01:20	B2RH58	410	424	KIKVRSILPINNIPK	15.71
1644	DRB1*01:20	B2RH58	529	543	SPSFELASQLGATLV	15.89
1645	DRB1*01:20	B2RH58	3	17	TNRILNIICPPILFL	17.22
1646	DRB1*01:20	B2RH58	548	562	EYYTLNPLRLIYHSN	17.46
1647	DRB1*01:20	B2RH58	544	558	QDHWEYYTLNPLRLI	17.65
1648	DRB1*01:20	B2RH58	409	423	KKIKVRSILPINNIP	18.95
1649	DRB1*01:20	B2RH58	4	18	NRILNIICPPILFLL	19.13
1650	DRB1*01:20	B2RH58	408	422	TKKIKVRSILPINNI	19.65
1651	DRB1*01:20	B2RH58	134	148	FLKTLVPNSILLQND	19.76
1652	DRB1*01:20	B2RH58	411	425	IKVRSILPINNIPKD	20.07
1653	DRB1*01:20	B2RH58	626	640	GLPDKAIKILLPTAS	20.76
1654	DRB1*01:20	B2RH58	2	16	RTNRILNIICPPILF	20.87
1655	DRB1*01:20	B2RH58	439	453	KIKIRQNPSQFIINT	24.22
1656	DRB1*01:20	B2RH58	438	452	KKIKIRQNPSQFIIN	24.43
1657	DRB1*01:20	B2RH58	412	426	KVRSILPINNIPKDI	25.86
1658	DRB1*01:20	B2RH58	447	461	SQFIINTFGTKSSWQ	27.18
1659	DRB1*01:20	B2RH58	129	143	ASETSFLKTLVPNSI	27.74
1660	DRB1*01:20	B2RH58	5	19	RILNIICPPILFLLV	28.21
1661	DRB1*01:20	B2RH58	177	191	SIELKRVAAKLRLKK	28.63
1662	DRB1*01:20	B2RH58	437	451	EKKIKIRQNPSQFII	28.93
1663	DRB1*01:20	B2RH58	176	190	GSIELKRVAAKLRLK	30.31
1664	DRB1*01:20	B2RH58	632	646	IKILLPTASGNATEQ	30.82
1665	DRB1*01:20	B2RH58	549	563	YYTLNPLRLIYHSNQ	31.05
1666	DRB1*01:20	B2RH58	475	489	IYQIVVLSPPADGNM	31.23
1667	DRB1*01:20	B2RH58	533	547	ELASQLGATLVQDHW	31.88
1668	DRB1*01:20	B2RH58	175	189	LGSIELKRVAAKLRL	32.94
1669	DRB1*01:20	B2RH58	260	274	RPEFVMMLKLKKTGT	33.98
1670	DRB1*01:20	B2RH58	178	192	IELKRVAAKLRLKKP	34.01
1671	DRB1*01:20	B2RH58	446	460	PSQFIINTFGTKSSW	34.73
1672	DRB1*01:20	B2RH58	476	490	YQIVVLSPPADGNMI	35.43
1673	DRB1*01:20	B2RH58	259	273	GRPEFVMMLKLKKTG	35.54

1674	DRB1*01:20	B2RH58	448	462	QFIINTFGTKSSWQP	36.31
1675	DRB1*01:20	B2RH58	407	421	NTKKIKVRSILPINN	36.54
1676	DRB1*01:20	B2RH58	603	617	VDKLQREQAGVVRDI	36.75
1677	DRB1*01:20	B2RH58	543	557	VQDHWEYYTLNPLRL	36.99
1678	DRB1*01:20	B2RH58	111	125	FKIYLVANVNFSGSF	37.21
1679	DRB1*01:20	B2RH58	474	488	AIYQIVVLSPPADGN	38.76
1680	DRB1*01:20	B2RH58	112	126	KIYLVANVNFSGSFE	38.78
1681	DRB1*01:20	B2RH58	110	124	SFKIYLVANVNFSGS	38.81
1682	DRB1*01:20	B2RH58	258	272	EGRPEFVMMLKLKKT	39.04
1683	DRB1*01:20	B2RH58	440	454	IKIRQNPSQFIINTF	39.24
1684	DRB1*01:20	B2RH58	528	542	VSPSFELASQLGATL	39.81
1685	DRB1*01:20	B2RH58	1	15	MRTNRILNII CPPIL	40.31
1686	DRB1*01:20	B2RH58	473	487	KAIYQIVVLSPPADG	41.69
1687	DRB1*01:20	B2RH58	413	427	VRSILPINNIPKDIS	43.08
1688	DRB1*01:20	B2RH58	261	275	PEFVMMLKLKKTGTD	43.95
1689	DRB1*01:20	B2RH58	174	188	QLGSIELKRVAALKR	44.03
1690	DRB1*01:20	B2RH58	183	197	VAAKLRLKKPVLNIS	44.17
1691	DRB1*01:20	B2RH58	262	276	EFVMMLKLKKTGTDD	46.32
1692	DRB1*01:20	B2RH58	67	81	LTLVIFYKNGTKVWQA	46.94
1693	DRB1*01:20	B2RH58	66	80	RLTLVIFYKNGTKVWQ	49.48
1694	DRB1*01:20	B2RH59	153	167	LGQIQLLRNMAKFSL	14.21
1695	DRB1*01:20	B2RH59	493	507	GMILGIEGGKTLYK	14.33
1696	DRB1*01:20	B2RH59	96	110	EVERRIHFANYELA	14.76
1697	DRB1*01:20	B2RH59	154	168	GQIQLLRNMAKFSLS	14.81
1698	DRB1*01:20	B2RH59	97	111	VERRIHFANYELAD	14.92
1699	DRB1*01:20	B2RH59	494	508	GMILGIEGGKTLYKY	16.04
1700	DRB1*01:20	B2RH59	99	113	RRIHFANYELADPS	16.11
1701	DRB1*01:20	B2RH59	155	169	QIQLLRNMAKFSLSV	16.72
1702	DRB1*01:20	B2RH59	152	166	NLGQIQLLRNMAKFS	16.87
1703	DRB1*01:20	B2RH59	98	112	ERRIHFANYELADP	17.27
1704	DRB1*01:20	B2RH59	339	353	HTYMFVQGEPSGTF	18.56
1705	DRB1*01:20	B2RH59	268	282	YYKLDFVDTNKVRYN	19.26
1706	DRB1*01:20	B2RH59	492	506	TGGMILGIEGGKTLY	19.54
1707	DRB1*01:20	B2RH59	432	446	KYQYVFFKANTSSAE	19.72
1708	DRB1*01:20	B2RH59	431	445	EKYQYVFFKANTSSA	20.04
1709	DRB1*01:20	B2RH59	151	165	QNLGQIQLLRNMAKF	21.15
1710	DRB1*01:20	B2RH59	267	281	TYYKLDFVDTNKVRY	21.51
1711	DRB1*01:20	B2RH59	340	354	TYMFVQGEPSGTFQ	21.55
1712	DRB1*01:20	B2RH59	418	432	NPDLKRSVTVLVREK	22.59
1713	DRB1*01:20	B2RH59	495	509	MILGIEGGKTLYKYV	24.56
1714	DRB1*01:20	B2RH59	433	447	YQYVFFKANTSSAEN	24.59
1715	DRB1*01:20	B2RH59	419	433	PDLKRSVTVLVREKY	24.96
1716	DRB1*01:20	B2RH59	156	170	IQLLRNMAKFSLSVT	25.89

1717	DRB1*01:20	B2RH59	249	263	GITCLILKARYNLPN	26.60
1718	DRB1*01:20	B2RH59	314	328	NNIFLSAEVQALPAF	26.73
1719	DRB1*01:20	B2RH59	430	444	REKYQYVFFKANTSS	27.29
1720	DRB1*01:20	B2RH59	248	262	AGITCLILKARYNLP	28.61
1721	DRB1*01:20	B2RH59	269	283	YKLDFVDTNKVRYNI	30.47
1722	DRB1*01:20	B2RH59	338	352	DHTYMFVQGEPSGT	30.73
1723	DRB1*01:20	B2RH59	417	431	GNPDLKRSVTVLVRE	31.04
1724	DRB1*01:20	B2RH59	100	114	RIHFIAANYELADPSV	31.77
1725	DRB1*01:20	B2RH59	469	483	PDVLNAALLPITFKV	32.57
1726	DRB1*01:20	B2RH59	313	327	ANNIFLSAEVQALPA	32.83
1727	DRB1*01:20	B2RH59	468	482	LPDVLNAALLPITFK	33.56
1728	DRB1*01:20	B2RH59	315	329	NIFLSAEVQALPAFS	33.60
1729	DRB1*01:20	B2RH59	95	109	SEVERRIHFIANYEL	33.68
1730	DRB1*01:20	B2RH59	247	261	GAGITCLILKARYNL	34.16
1731	DRB1*01:20	B2RH59	266	280	YTTYKLDVFDTNKVR	34.20
1732	DRB1*01:20	B2RH59	250	264	ITCLILKARYNLPNA	34.56
1733	DRB1*01:20	B2RH59	150	164	NQNLGQIQLLRNMAK	34.67
1734	DRB1*01:20	B2RH59	162	176	MAKFSLSVTPPAESK	35.25
1735	DRB1*01:20	B2RH59	416	430	QGNPDLKRSVTVLVR	35.31
1736	DRB1*01:20	B2RH59	434	448	QYVFFKANTSSAENN	35.89
1737	DRB1*01:20	B2RH59	157	171	QLLRNMAKFSLSVTP	36.28
1738	DRB1*01:20	B2RH59	491	505	KTGGMILGIEGGKTL	36.89
1739	DRB1*01:20	B2RH59	341	355	YMFVQGEPSGTFQA	36.93
1740	DRB1*01:20	B2RH59	133	147	LETIRMWARISYPSI	37.15
1741	DRB1*01:20	B2RH59	284	298	TRNHFYKMILKKAKA	37.39
1742	DRB1*01:20	B2RH59	420	434	DLKRSVTVLVREKYQ	37.42
1743	DRB1*01:20	B2RH59	394	408	KIKLTLAQQENLTR	37.61
1744	DRB1*01:20	B2RH59	285	299	RNHFYKMILKKAKAP	38.10
1745	DRB1*01:20	B2RH59	458	472	QGNELLISAKLPDVL	38.14
1746	DRB1*01:20	B2RH59	367	381	YSKLTVSVSTPTGQQ	39.20
1747	DRB1*01:20	B2RH59	503	517	KTLYKYVLTTMPQNK	39.46
1748	DRB1*01:20	B2RH59	470	484	DVLNAALLPITFKVY	40.58
1749	DRB1*01:20	B2RH59	163	177	AKFSLSVTPPAESKL	41.39
1750	DRB1*01:20	B2RH59	134	148	ETIRMWARISYPSIA	41.54
1751	DRB1*01:20	B2RH59	132	146	DLETIRMWARISYPS	41.83
1752	DRB1*01:20	B2RH59	366	380	DYSKLTVSVSTPTGQ	42.35
1753	DRB1*01:20	B2RH59	337	351	VDHTYMFVQGEPSG	43.12
1754	DRB1*01:20	B2RH59	459	473	GNELLISAKLPDVLN	43.28
1755	DRB1*01:20	B2RH59	467	481	KLPDVLNAALLPITF	43.60
1756	DRB1*01:20	B2RH59	283	297	ITRNHFYKMILKKAK	44.43
1757	DRB1*01:20	B2RH59	12	26	YVLIAFMAVSCVADK	46.04
1758	DRB1*01:20	B2RH59	460	474	NELLISAKLPDVLNA	46.26
1759	DRB1*01:20	B2RH59	393	407	GKIKLTLAQQENLTK	48.03

1760	DRB1*01:20	B2RH59	312	326	AANNIFLSAEVQALP	48.23
1761	DRB1*01:20	B2RH59	505	519	LYKYVLTTPQNKEL	48.30
1762	DRB1*01:20	B2RH59	457	471	GQGNELLISAKLPDV	48.57
1763	DRB1*01:20	B2RH59	504	518	TLYKYVLTTPQNKE	49.27
1764	DRB1*01:20	B2RH59	286	300	NHFYKMILKKAKAPG	49.56
1765	DRB1*01:20	B2RH59	429	443	VREKYQYVFFKANTS	49.84
1766	DRB1*01:20	B2RH59	161	175	NMAKFSLSVTPPAES	49.94
1767	DRB1*01:20	B2RHG4	192	206	EKFQIVPIIVNGSLS	22.70
1768	DRB1*01:20	B2RHG4	193	207	KFQIVPIIVNGSLSE	23.14
1769	DRB1*01:20	B2RHG4	191	205	SEKFQIVPIIVNGSL	27.26
1770	DRB1*01:20	B2RHG4	166	180	FLANRLLDNVPLVRA	32.92
1771	DRB1*01:20	B2RHG4	194	208	FQIVPIIVNGSLSEF	34.08
1772	DRB1*01:20	B2RHG4	167	181	LANRLLDNVPLVRAI	34.71
1773	DRB1*01:20	B2RHG4	168	182	ANRLLDNVPLVRAIA	37.38
1774	DRB1*01:20	B2RHG4	1	15	MKKYLLYASLLTSVL	38.38
1775	DRB1*01:20	B2RHG4	112	126	RKVYVVANVDNAVKT	39.05
1776	DRB1*01:20	B2RHG4	174	188	NVPLVRAIAKVELNI	41.12
1777	DRB1*01:20	B2RHG4	195	209	QIVPIIVNGSLSEFK	42.03
1778	DRB1*01:20	B2RHG4	111	125	ERKVYVVANVDNAVK	42.51
1779	DRB1*01:20	B2RHG4	183	197	KVELNISLSEKFQIV	43.88
1780	DRB1*01:20	B2RHG4	169	183	NRLLDNVPLVRAIAK	44.62
1781	DRB1*01:20	B2RHG4	175	189	VPLVRAIAKVELNIS	45.30
1782	DRB1*01:20	B2RHG4	165	179	DFLANRLLDNVPLVR	47.13
1783	DRB1*01:20	B2RHG4	2	16	KKYLLYASLLTSVLL	47.55
1784	DRB1*01:20	B2RHG4	190	204	LSEKFQIVPIIVNGS	47.84
1785	DRB1*01:20	B2RHG4	268	282	ANGKVTALRIVTYLN	48.01
1786	DRB1*01:20	B2RHG4	113	127	KVYVVANVDNAVKTA	48.69
1787	DRB1*01:24	A0PA81	263	277	GVPFIPVIGKMLNIY	8.14
1788	DRB1*01:24	A0PA81	264	278	VPFIPVIGKMLNIYI	8.52
1789	DRB1*01:24	A0PA81	274	288	LNIYIDLRGANLNLV	9.03
1790	DRB1*01:24	A0PA81	262	276	DGVPFIPVIGKMLNI	9.59
1791	DRB1*01:24	A0PA81	275	289	NIYIDLRGANLNLVLV	11.23
1792	DRB1*01:24	A0PA81	273	287	MLNIYIDLRGANLNV	11.35
1793	DRB1*01:24	A0PA81	265	279	PFIPVIGKMLNIYID	12.54
1794	DRB1*01:24	A0PA81	261	275	SDGVPFIPVIGKMLN	12.88
1795	DRB1*01:24	A0PA81	276	290	IYIDLRGANLNLVLS	14.00
1796	DRB1*01:24	A0PA81	272	286	KMLNIYIDLRGANLN	15.48
1797	DRB1*01:24	A0PA81	119	133	KDLFFRLSSTDGIAQ	18.35
1798	DRB1*01:24	A0PA81	203	217	YTGLAELIGNAVQYR	19.53
1799	DRB1*01:24	A0PA81	118	132	VKDLFFRLSSTDGIA	20.24
1800	DRB1*01:24	A0PA81	260	274	GSDGVPFIPVIGKML	22.87
1801	DRB1*01:24	A0PA81	120	134	DLFFRLSSTDGIAQS	25.92
1802	DRB1*01:24	A0PA81	202	216	TYTGLAELIGNAVQY	27.68

1803	DRB1*01:24	AOPA81	271	285	GKMLNIYIDLRGANL	28.37
1804	DRB1*01:24	AOPA81	204	218	TGLAELIGNAVQYRP	30.54
1805	DRB1*01:24	AOPA81	121	135	LFFRLSSTDGIAQSP	30.61
1806	DRB1*01:24	AOPA81	266	280	FIPVIGKMLNIYIDL	32.52
1807	DRB1*01:24	AOPA81	267	281	IPVIGKMLNIYIDLR	35.16
1808	DRB1*01:24	AOPA81	117	131	NVKDLFFRLSSTDGI	35.41
1809	DRB1*01:24	AOPA81	201	215	DTYTGLAELIGNAVQ	45.26
1810	DRB1*01:24	AOPA81	268	282	PVIGKMLNIYIDLRG	46.21
1811	DRB1*01:24	B2RH54	4	18	TKFFLLGLAALAMTA	6.57
1812	DRB1*01:24	B2RH54	3	17	KTKFFLLGLAALAMT	7.60
1813	DRB1*01:24	B2RH54	5	19	KFFLLGLAALAMTAC	8.96
1814	DRB1*01:24	B2RH54	2	16	KKTKFFLLGLAALAM	9.60
1815	DRB1*01:24	B2RH54	1	15	MKKTKFFLLGLAALA	12.66
1816	DRB1*01:24	B2RH54	162	176	DPLKIKRVHARMAFT	16.32
1817	DRB1*01:24	B2RH54	163	177	PLKIKRVHARMAFTE	17.21
1818	DRB1*01:24	B2RH54	164	178	LKIKRVHARMAFTEI	18.10
1819	DRB1*01:24	B2RH54	161	175	NDPLKIKRVHARMAF	21.00
1820	DRB1*01:24	B2RH54	6	20	FFLLGLAALAMTACN	25.41
1821	DRB1*01:24	B2RH54	91	105	QRTLVMANTGAMEL	25.43
1822	DRB1*01:24	B2RH54	92	106	RTLVMANTGAMELV	26.66
1823	DRB1*01:24	B2RH54	165	179	KIKRVHARMAFTEIK	34.13
1824	DRB1*01:24	B2RH54	90	104	GQRTLVMANTGAME	36.11
1825	DRB1*01:24	B2RH54	189	203	IYTFVPEKIYGLIAK	36.45
1826	DRB1*01:24	B2RH54	172	186	RMAFTEIKVQMSAAY	37.86
1827	DRB1*01:24	B2RH54	89	103	AGQRTLVMANTGAM	38.54
1828	DRB1*01:24	B2RH54	7	21	FLLGLAALAMTACNK	39.55
1829	DRB1*01:24	B2RH54	188	202	NIYTFVPEKIYGLIA	47.02
1830	DRB1*01:24	B2RH57	405	419	TIKVKALKPNGIGIQ	15.46
1831	DRB1*01:24	B2RH57	404	418	YTIKVKALKPNGIGI	16.44
1832	DRB1*01:24	B2RH57	406	420	IKVKALKPNGIGIQR	19.26
1833	DRB1*01:24	B2RH57	337	351	LVPYVAEINPHAVIT	20.78
1834	DRB1*01:24	B2RH57	421	435	RTNLFFFTVDGKKVIL	22.76
1835	DRB1*01:24	B2RH57	336	350	FLVPYVAEINPHAVI	22.97
1836	DRB1*01:24	B2RH57	355	369	VVTFENSLSFTVRIK	25.94
1837	DRB1*01:24	B2RH57	403	417	VYTIKVKALKPNGIG	26.29
1838	DRB1*01:24	B2RH57	422	436	TNLFFFTVDGKKVILD	26.30
1839	DRB1*01:24	B2RH57	338	352	VPYVAEINPHAVITQ	28.60
1840	DRB1*01:24	B2RH57	237	251	SAQSIIQASAPLYVY	29.73
1841	DRB1*01:24	B2RH57	238	252	AQSIIQASAPLYVYE	30.16
1842	DRB1*01:24	B2RH57	2	16	KMKYFHHPSGLLPRL	30.89
1843	DRB1*01:24	B2RH57	239	253	QSIIQASAPLYVYEN	31.54
1844	DRB1*01:24	B2RH57	423	437	NLFFFTVDGKKVILDK	35.17
1845	DRB1*01:24	B2RH57	356	370	VTFENSLSFTVRIKG	36.59

1846	DRB1*01:24	B2RH57	335	349	GFLVPYVAEINPHAV	36.77
1847	DRB1*01:24	B2RH57	420	434	RRTNLFFTVDGKKVI	36.89
1848	DRB1*01:24	B2RH57	331	345	NLDYGFLVPYVAEIN	37.81
1849	DRB1*01:24	B2RH57	354	368	NVVTFENSLSFTVRI	39.59
1850	DRB1*01:24	B2RH57	198	212	TKVQILRNAKNSRLL	40.07
1851	DRB1*01:24	B2RH57	199	213	KVQILRNAKNSRLL	41.24
1852	DRB1*01:24	B2RH57	407	421	KVKALKPNGIGIQRR	42.12
1853	DRB1*01:24	B2RH57	3	17	MKYFHHPSGLLPRL	42.13
1854	DRB1*01:24	B2RH57	330	344	ENLDYGFLVPYVAEI	43.40
1855	DRB1*01:24	B2RH57	1	15	MKMKYFHHPSGLLP	43.50
1856	DRB1*01:24	B2RH57	332	346	LDYGFLVPYVAEINP	44.23
1857	DRB1*01:24	B2RH57	240	254	SIIQASAPLYVYENI	45.21
1858	DRB1*01:24	B2RH57	200	214	VQILRNAKNSRLL	46.55
1859	DRB1*01:24	B2RH58	546	560	HWEYYTLNPLRLIYH	7.53
1860	DRB1*01:24	B2RH58	545	559	DHWEYYTLNPLRLIY	8.01
1861	DRB1*01:24	B2RH58	547	561	WEYYTLNPLRLIYHS	8.21
1862	DRB1*01:24	B2RH58	544	558	QDHWEEYTLNPLRLI	10.45
1863	DRB1*01:24	B2RH58	548	562	EYYTLNPLRLIYHSN	11.66
1864	DRB1*01:24	B2RH58	132	146	TSFLKTLVPNSILLQ	15.75
1865	DRB1*01:24	B2RH58	131	145	ETSFLKTLVPNSILL	16.59
1866	DRB1*01:24	B2RH58	133	147	SFLKTLVPNSILLQN	20.25
1867	DRB1*01:24	B2RH58	543	557	VQDHWEEYTLNPLRL	23.45
1868	DRB1*01:24	B2RH58	130	144	SETSFLKTLVPNSIL	24.47
1869	DRB1*01:24	B2RH58	630	644	KAIKILLPTASGNAT	25.06
1870	DRB1*01:24	B2RH58	629	643	DKAIKILLPTASGNA	27.38
1871	DRB1*01:24	B2RH58	530	544	PSFELASQLGATLVQ	27.96
1872	DRB1*01:24	B2RH58	111	125	FKIYLVANVNFSGSF	30.98
1873	DRB1*01:24	B2RH58	110	124	SFKIYLVANVNFSGS	33.18
1874	DRB1*01:24	B2RH58	134	148	FLKTLVPNSILLQND	33.92
1875	DRB1*01:24	B2RH58	628	642	PDKAIKILLPTASGN	33.93
1876	DRB1*01:24	B2RH58	531	545	SFELASQLGATLVQD	34.64
1877	DRB1*01:24	B2RH58	529	543	SPSFELASQLGATLV	36.49
1878	DRB1*01:24	B2RH58	549	563	YYTLNPLRLIYHSNQ	37.96
1879	DRB1*01:24	B2RH58	112	126	KIYLVANVNFSGSFE	38.41
1880	DRB1*01:24	B2RH58	4	18	NRILNIICPPILFLL	38.59
1881	DRB1*01:24	B2RH58	109	123	NSFKIYLVANVNFSG	41.50
1882	DRB1*01:24	B2RH58	3	17	TNRILNIICPPILFL	42.70
1883	DRB1*01:24	B2RH58	627	641	LPDKAIKILLPTASG	43.23
1884	DRB1*01:24	B2RH58	102	116	YGQFNGNNSFKIYLV	44.57
1885	DRB1*01:24	B2RH58	631	645	AIKILLPTASGNATE	46.00
1886	DRB1*01:24	B2RH58	532	546	FELASQLGATLVQDH	46.74
1887	DRB1*01:24	B2RH59	432	446	KYQYVFFKANTSSAE	14.74
1888	DRB1*01:24	B2RH59	431	445	EKYQYVFFKANTSSA	14.95

1889	DRB1*01:24	B2RH59	433	447	YQYVFFKANTSSAEN	16.94
1890	DRB1*01:24	B2RH59	430	444	REKYQYVFFKANTSS	22.22
1891	DRB1*01:24	B2RH59	434	448	QYVFFKANTSSAENN	23.03
1892	DRB1*01:24	B2RH59	314	328	NNIFLSAEVQALPAF	24.67
1893	DRB1*01:24	B2RH59	162	176	MAKFSLSVTPPAESK	27.76
1894	DRB1*01:24	B2RH59	315	329	NIFLSAEVQALPAFS	28.48
1895	DRB1*01:24	B2RH59	313	327	ANNIFLSAEVQALPA	34.16
1896	DRB1*01:24	B2RH59	503	517	KTLYKYVLTTMPQNK	39.49
1897	DRB1*01:24	B2RH59	161	175	NMAKFSLSVTPPAES	40.28
1898	DRB1*01:24	B2RH59	163	177	AKFSLSVTPPAESKL	41.17
1899	DRB1*01:24	B2RH59	429	443	VREKYQYVFFKANTS	41.76
1900	DRB1*01:24	B2RH59	435	449	YVFFKANTSSAENNQ	44.77
1901	DRB1*01:24	B2RH59	316	330	IFLSAEVQALPAFSD	46.81
1902	DRB1*01:24	B2RHG4	2	16	KKYLLYASLLTSVLL	22.17
1903	DRB1*01:24	B2RHG4	1	15	MKKYLLYASLLTSVL	25.11
1904	DRB1*01:24	B2RHG4	4	18	YLLYASLLTSVLLFS	25.37
1905	DRB1*01:24	B2RHG4	3	17	KYLLYASLLTSVLLF	28.92
1906	DRB1*01:24	B2RHG4	5	19	LLYASLLTSVLLFSC	33.35
1907	DRB1*01:24	B2RHG4	6	20	LYASLLTSVLLFSCS	38.34
1908	DRB1*01:24	B2RHG4	79	93	AKYYIAGNTFSGGIW	39.65
1909	DRB1*01:24	B2RHG4	78	92	PAKYYIAGNTFSGGI	41.08
1910	DRB1*01:24	B2RHG4	68	82	LLLFQSGANPAKYY	45.79
1911	DRB1*01:29	A0PA81	263	277	GVPFIPVIGKMLNIY	7.18
1912	DRB1*01:29	A0PA81	262	276	DGVPFIPVIGKMLNI	8.28
1913	DRB1*01:29	A0PA81	264	278	VFPFIPVIGKMLNIYI	8.72
1914	DRB1*01:29	A0PA81	274	288	LNIYIDLRGANLNLV	9.19
1915	DRB1*01:29	A0PA81	261	275	SDGVPFIPVIGKMLN	10.75
1916	DRB1*01:29	A0PA81	273	287	MLNIYIDLRGANLNV	10.83
1917	DRB1*01:29	A0PA81	275	289	NIYIDLRGANLNLV	11.16
1918	DRB1*01:29	A0PA81	265	279	PFIPVIGKMLNIYID	13.93
1919	DRB1*01:29	A0PA81	272	286	KMLNIYIDLRGANLN	15.14
1920	DRB1*01:29	A0PA81	119	133	KDLFFRLSSTDGIAQ	16.48
1921	DRB1*01:29	A0PA81	276	290	IYIDLRGANLNLVLS	16.64
1922	DRB1*01:29	A0PA81	203	217	YTGLAELIGNAVQYR	18.65
1923	DRB1*01:29	A0PA81	260	274	GSDGVPFIPVIGKML	20.25
1924	DRB1*01:29	A0PA81	118	132	VKDLFFRLSSTDGIA	20.27
1925	DRB1*01:29	A0PA81	120	134	DLFFRLSSTDGIAQS	24.89
1926	DRB1*01:29	A0PA81	204	218	TGLAELIGNAVQYRP	28.43
1927	DRB1*01:29	A0PA81	202	216	TYTGLAELIGNAVQY	28.79
1928	DRB1*01:29	A0PA81	271	285	GKMLNIYIDLRGANL	30.98
1929	DRB1*01:29	A0PA81	121	135	LFFRLSSTDGIAQSP	34.92
1930	DRB1*01:29	A0PA81	117	131	NVKDLFFRLSSTDGI	38.02
1931	DRB1*01:29	A0PA81	266	280	FIPVIGKMLNIYIDL	39.69

1932	DRB1*01:29	AOPA81	201	215	DTYTGLAELIGNAVQ	45.03
1933	DRB1*01:29	AOPA81	205	219	GLAELIGNAVQYRPD	47.40
1934	DRB1*01:29	AOPA81	70	84	IDRLMMDAAQVAARK	48.59
1935	DRB1*01:29	B2RH54	4	18	TKFFLLGLAALAMTA	10.63
1936	DRB1*01:29	B2RH54	3	17	KTKFFLLGLAALAMT	12.45
1937	DRB1*01:29	B2RH54	163	177	PLKIKRVHARMAFTE	15.04
1938	DRB1*01:29	B2RH54	2	16	KKTKFFLLGLAALAM	15.90
1939	DRB1*01:29	B2RH54	162	176	DPLKIKRVHARMAFT	15.96
1940	DRB1*01:29	B2RH54	5	19	KFFLLGLAALAMTAC	16.12
1941	DRB1*01:29	B2RH54	164	178	LKIKRVHARMAFTEI	17.97
1942	DRB1*01:29	B2RH54	1	15	MKKTKFFLLGLAALA	19.73
1943	DRB1*01:29	B2RH54	161	175	NDPLKIKRVHARMAF	22.62
1944	DRB1*01:29	B2RH54	91	105	QRTLVMANTGAMEL	27.45
1945	DRB1*01:29	B2RH54	172	186	RMAFTEIKVQMSAAY	28.44
1946	DRB1*01:29	B2RH54	92	106	RTLVMANTGAMELV	29.79
1947	DRB1*01:29	B2RH54	165	179	KIKRVHARMAFTEIK	31.00
1948	DRB1*01:29	B2RH54	90	104	GQRTLVMANTGAME	34.91
1949	DRB1*01:29	B2RH54	189	203	IYTFVPEKIYGLIAK	36.95
1950	DRB1*01:29	B2RH54	173	187	MAFTEIKVQMSAAYD	40.28
1951	DRB1*01:29	B2RH54	171	185	ARMAFTEIKVQMSAA	40.49
1952	DRB1*01:29	B2RH54	89	103	AGQRTLVMANTGAM	41.67
1953	DRB1*01:29	B2RH54	188	202	NIYTFVPEKIYGLIA	44.80
1954	DRB1*01:29	B2RH54	6	20	FFLLGLAALAMTACN	46.58
1955	DRB1*01:29	B2RH54	108	122	KTLAEVKALTTELT	48.42
1956	DRB1*01:29	B2RH54	190	204	YTFVPEKIYGLIAKK	49.87
1957	DRB1*01:29	B2RH57	405	419	TIKVKALKPNEGIGIQ	15.74
1958	DRB1*01:29	B2RH57	404	418	YTIKVKALKPNEGIGI	16.99
1959	DRB1*01:29	B2RH57	406	420	IKVKALKPNEGIGIQR	19.50
1960	DRB1*01:29	B2RH57	337	351	LVPYVAEINPHAVIT	21.02
1961	DRB1*01:29	B2RH57	421	435	RTNLFFFTVDGKKVIL	22.05
1962	DRB1*01:29	B2RH57	238	252	AQSIIQASAPLYVYE	22.43
1963	DRB1*01:29	B2RH57	239	253	QSIIQASAPLYVYEN	22.73
1964	DRB1*01:29	B2RH57	336	350	FLVPYVAEINPHAVI	23.00
1965	DRB1*01:29	B2RH57	237	251	SAQSIIQASAPLYVY	23.62
1966	DRB1*01:29	B2RH57	422	436	TNLFFFTVDGKKVILD	23.92
1967	DRB1*01:29	B2RH57	355	369	VVTFENSLSFTVRIK	24.46
1968	DRB1*01:29	B2RH57	403	417	VYTIKVKALKPNEGIG	25.78
1969	DRB1*01:29	B2RH57	2	16	KMKYFHHPSGLLPRL	27.63
1970	DRB1*01:29	B2RH57	338	352	VPYVAEINPHAVITQ	29.18
1971	DRB1*01:29	B2RH57	331	345	NLDYGFLVPYVAEIN	30.29
1972	DRB1*01:29	B2RH57	423	437	NLFFFTVDGKKVILDK	31.43
1973	DRB1*01:29	B2RH57	356	370	VTFENSLSFTVRIKG	33.23
1974	DRB1*01:29	B2RH57	240	254	SIIQASAPLYVYENI	33.25

1975	DRB1*01:29	B2RH57	335	349	GFLVPYVAEINPHAV	33.60
1976	DRB1*01:29	B2RH57	332	346	LDYGFLVPYVAEINP	33.96
1977	DRB1*01:29	B2RH57	420	434	RRTNLFFTVDGKKVI	34.15
1978	DRB1*01:29	B2RH57	330	344	ENLDYGFLVPYVAEI	34.20
1979	DRB1*01:29	B2RH57	3	17	MKYFHHPSGLLPRL	35.10
1980	DRB1*01:29	B2RH57	407	421	KVKALKPNGIGIQRR	35.89
1981	DRB1*01:29	B2RH57	1	15	MKMKYFHHPSGLLP	36.34
1982	DRB1*01:29	B2RH57	199	213	KVQILRNAKNSRLLE	42.12
1983	DRB1*01:29	B2RH57	354	368	NVVTFENSLSFTVRI	42.64
1984	DRB1*01:29	B2RH57	198	212	TKVQILRNAKNSRLL	42.95
1985	DRB1*01:29	B2RH57	236	250	GSAQSIIQASAPLYV	42.95
1986	DRB1*01:29	B2RH57	333	347	DYGFLVPYVAEINPH	44.71
1987	DRB1*01:29	B2RH57	192	206	SDVIKITKVQILRNA	45.58
1988	DRB1*01:29	B2RH57	329	343	VENLDYGFLVPYVAE	45.99
1989	DRB1*01:29	B2RH57	200	214	VQILRNAKNSRLLEG	47.65
1990	DRB1*01:29	B2RH57	402	416	TVYTIKVKALKPNGI	48.10
1991	DRB1*01:29	B2RH58	546	560	HWEYYTLNPLRLIYH	8.42
1992	DRB1*01:29	B2RH58	545	559	DHWEYYTLNPLRLIY	9.28
1993	DRB1*01:29	B2RH58	547	561	WEYYTLNPLRLIYHS	10.07
1994	DRB1*01:29	B2RH58	544	558	QDHWEEYTLNPLRLI	12.19
1995	DRB1*01:29	B2RH58	548	562	EYYTLNPLRLIYHSN	14.16
1996	DRB1*01:29	B2RH58	132	146	TSFLKTLVPNSILLQ	18.38
1997	DRB1*01:29	B2RH58	131	145	ETSFLKTLVPNSILL	19.74
1998	DRB1*01:29	B2RH58	630	644	KAIKILLPTASGNAT	21.50
1999	DRB1*01:29	B2RH58	629	643	DKAIKILLPTASGNA	21.81
2000	DRB1*01:29	B2RH58	133	147	SFLKTLVPNSILLQN	24.12
2001	DRB1*01:29	B2RH58	543	557	VQDHWEEYTLNPLRL	25.73
2002	DRB1*01:29	B2RH58	628	642	PDKAIKILLPTASGN	26.90
2003	DRB1*01:29	B2RH58	130	144	SETSFLKTLVPNSIL	27.43
2004	DRB1*01:29	B2RH58	530	544	PSFELASQLGATLVQ	28.03
2005	DRB1*01:29	B2RH58	531	545	SFELASQLGATLVQD	33.36
2006	DRB1*01:29	B2RH58	529	543	SPSFELASQLGATLV	33.80
2007	DRB1*01:29	B2RH58	627	641	LPDKAIKILLPTASG	34.15
2008	DRB1*01:29	B2RH58	631	645	AIKILLPTASGNATE	39.57
2009	DRB1*01:29	B2RH58	110	124	SFKIYLVANVNFSGS	40.73
2010	DRB1*01:29	B2RH58	134	148	FLKTLVPNSILLQND	42.15
2011	DRB1*01:29	B2RH58	111	125	FKIYLVANVNFSGSF	43.65
2012	DRB1*01:29	B2RH58	532	546	FELASQLGATLVQDH	43.90
2013	DRB1*01:29	B2RH58	549	563	YYTLNPLRLIYHSNQ	44.13
2014	DRB1*01:29	B2RH58	410	424	KIKVRSILPINNIPK	45.34
2015	DRB1*01:29	B2RH58	102	116	YGQFNGNNSFKIYLV	46.13
2016	DRB1*01:29	B2RH58	112	126	KIYLVANVNFSGSFE	47.06
2017	DRB1*01:29	B2RH58	109	123	NSFKIYLVANVNFSG	49.72

2018	DRB1*01:29	B2RH59	432	446	KYQYVFFKANTSSAE	11.23
2019	DRB1*01:29	B2RH59	431	445	EKYQYVFFKANTSSA	12.23
2020	DRB1*01:29	B2RH59	433	447	YQYVFFKANTSSAEN	14.09
2021	DRB1*01:29	B2RH59	314	328	NNIFLSAEVQALPAF	16.68
2022	DRB1*01:29	B2RH59	430	444	REKYQYVFFKANTSS	18.18
2023	DRB1*01:29	B2RH59	434	448	QYVFFKANTSSAENN	19.20
2024	DRB1*01:29	B2RH59	315	329	NIFLSAEVQALPAFS	19.77
2025	DRB1*01:29	B2RH59	313	327	ANNIFLSAEVQALPA	22.12
2026	DRB1*01:29	B2RH59	162	176	MAKFSLSVTPPAESK	23.53
2027	DRB1*01:29	B2RH59	503	517	KTLYKYVLTTPQNK	32.07
2028	DRB1*01:29	B2RH59	161	175	NMAKFSLSVTPPAES	32.84
2029	DRB1*01:29	B2RH59	163	177	AKFSLSVTPPAESKL	33.83
2030	DRB1*01:29	B2RH59	312	326	AANNIFLSAEVQALP	33.92
2031	DRB1*01:29	B2RH59	316	330	IFLSAEVQALPAFSD	35.01
2032	DRB1*01:29	B2RH59	97	111	VERRIHFIANYELAD	36.63
2033	DRB1*01:29	B2RH59	429	443	VREKYQYVFFKANTS	38.29
2034	DRB1*01:29	B2RH59	98	112	ERRIHFIANYELADP	39.34
2035	DRB1*01:29	B2RH59	435	449	YVFFKANTSSAENNQ	39.72
2036	DRB1*01:29	B2RH59	96	110	EVERRIHFANYELA	40.28
2037	DRB1*01:29	B2RH59	99	113	RRIHFANYELADPS	42.88
2038	DRB1*01:29	B2RH59	504	518	TLYKYVLTTPQNKE	45.04
2039	DRB1*01:29	B2RH59	505	519	LYKYVLTTPQNKE	46.15
2040	DRB1*01:29	B2RH59	160	174	RNMAKFSLSVTPPAE	46.75
2041	DRB1*01:29	B2RH59	284	298	TRNHFYKMILKKAKA	47.89
2042	DRB1*01:29	B2RH59	502	516	GKTLYKYVLTTPQN	49.94
2043	DRB1*01:29	B2RHG4	1	15	MKKYLLYASLLTSVL	33.03
2044	DRB1*01:29	B2RHG4	2	16	KKYLLYASLLTSVLL	34.79
2045	DRB1*01:29	B2RHG4	78	92	PAKYIAGNTFSGGI	37.68
2046	DRB1*01:29	B2RHG4	79	93	AKYIAGNTFSGGIW	39.12
2047	DRB1*01:29	B2RHG4	68	82	LLLFQSGANPAKYY	40.79
2048	DRB1*01:29	B2RHG4	112	126	RKVYVVANVDNAVKT	47.82
2049	DRB1*01:29	B2RHG4	192	206	EKFQIVPIIVNGSLS	48.85
2050	DRB1*01:29	B2RHG4	191	205	SEKFQIVPIIVNGSL	49.53
2051	DRB1*03:01	A0PA81	70	84	IDRLMDAAQVAARK	24.79
2052	DRB1*03:01	A0PA81	273	287	MLNIYIDLRGANLNV	29.81
2053	DRB1*03:01	A0PA81	69	83	RIDRLMDAAQVAAR	31.27
2054	DRB1*03:01	A0PA81	56	70	QRVVIFVDETGRRI	31.45
2055	DRB1*03:01	A0PA81	272	286	KMLNIYIDLRGANLN	32.83
2056	DRB1*03:01	A0PA81	58	72	VVIFVDETGRRIDR	34.62
2057	DRB1*03:01	A0PA81	71	85	DRLMDAAQVAARKP	35.30
2058	DRB1*03:01	A0PA81	271	285	GKMLNIYIDLRGANL	36.38
2059	DRB1*03:01	A0PA81	57	71	RVVIFVDETGRRID	36.61
2060	DRB1*03:01	A0PA81	274	288	LNIYIDLRGANLNVL	37.96

2061	DRB1*03:01	A0PA81	59	73	VIFVFDETGRRIDRL	41.72
2062	DRB1*03:01	A0PA81	72	86	RLMMDAAQVAARKPI	44.47
2063	DRB1*03:01	A0PA81	68	82	RRIDRLMMDAAQVAA	49.85
2064	DRB1*03:01	B2RH57	176	190	RIAAKITLDIKQVTP	23.10
2065	DRB1*03:01	B2RH57	177	191	IAAKITLDIKQVTPG	26.64
2066	DRB1*03:01	B2RH57	178	192	AAKITLDIKQVTPGS	28.17
2067	DRB1*03:01	B2RH57	179	193	AKITLDIKQVTPGSD	28.25
2068	DRB1*03:01	B2RH57	175	189	NRIAAKITLDIKQVT	29.31
2069	DRB1*03:01	B2RH57	180	194	KITLDIKQVTPGSDV	36.14
2070	DRB1*03:01	B2RH57	44	58	ATVKMSLDDVEMRGG	39.11
2071	DRB1*03:01	B2RH57	43	57	VATVKMSLDDVEMRG	40.07
2072	DRB1*03:01	B2RH57	347	361	HAVITQDNVVTFENS	49.63
2073	DRB1*03:01	B2RH58	199	213	YELVGDPKAKFRNCM	21.02
2074	DRB1*03:01	B2RH58	196	210	ISDYELVGDPKAKFR	27.57
2075	DRB1*03:01	B2RH58	197	211	SDYELVGDPKAKFRN	28.58
2076	DRB1*03:01	B2RH58	198	212	DYELVGDPKAKFRNC	29.07
2077	DRB1*03:01	B2RH58	200	214	ELVGDPKAKFRNCMP	35.38
2078	DRB1*03:01	B2RH58	610	624	QAGVVRDIMTGRIYW	41.70
2079	DRB1*03:01	B2RH58	399	413	VPTVTIDANTKKIKV	44.46
2080	DRB1*03:01	B2RH58	609	623	EQAGVVRDIMTGRIY	46.38
2081	DRB1*03:01	B2RH58	195	209	NISDYELVGDPKAKF	48.52
2082	DRB1*03:01	B2RH59	332	346	SGMLTVDHTYTMVFVQ	25.64
2083	DRB1*03:01	B2RH59	331	345	GSGMLTVDHTYTMVFFV	30.59
2084	DRB1*03:01	B2RH59	333	347	GMLTVDHTYTMVFVQ	34.67
2085	DRB1*03:01	B2RH59	330	344	DGSGMLTVDHTYTMVF	35.48
2086	DRB1*03:01	B2RH59	89	103	TAKIIPSEVERRIHF	45.09
2087	DRB1*03:04	A0PA81	70	84	IDRLMMDAAQVAARK	24.79
2088	DRB1*03:04	A0PA81	273	287	MLNIYIDLRGANLNV	29.81
2089	DRB1*03:04	A0PA81	69	83	RIDRLMMDAAQVAAR	31.27
2090	DRB1*03:04	A0PA81	56	70	QRVVIFVFDETGRRI	31.45
2091	DRB1*03:04	A0PA81	272	286	KMLNIYIDLRGANLN	32.83
2092	DRB1*03:04	A0PA81	58	72	VVIFVFDETGRRIDR	34.62
2093	DRB1*03:04	A0PA81	71	85	DRLMMDAAQVAARKP	35.30
2094	DRB1*03:04	A0PA81	271	285	GKMLNIYIDLRGANL	36.38
2095	DRB1*03:04	A0PA81	57	71	RVVIFVFDETGRRID	36.61
2096	DRB1*03:04	A0PA81	274	288	LNIYIDLRGANLNVL	37.96
2097	DRB1*03:04	A0PA81	59	73	VIFVFDETGRRIDRL	41.72
2098	DRB1*03:04	A0PA81	72	86	RLMMDAAQVAARKPI	44.47
2099	DRB1*03:04	A0PA81	68	82	RRIDRLMMDAAQVAA	49.85
2100	DRB1*03:04	B2RH57	176	190	RIAAKITLDIKQVTP	23.10
2101	DRB1*03:04	B2RH57	177	191	IAAKITLDIKQVTPG	26.64
2102	DRB1*03:04	B2RH57	178	192	AAKITLDIKQVTPGS	28.17
2103	DRB1*03:04	B2RH57	179	193	AKITLDIKQVTPGSD	28.25

2104	DRB1*03:04	B2RH57	175	189	NRIAAKITLDIKQVT	29.31
2105	DRB1*03:04	B2RH57	180	194	KITLDIKQVTPGSDV	36.14
2106	DRB1*03:04	B2RH57	44	58	ATVKMSLDDVEMRGG	39.11
2107	DRB1*03:04	B2RH57	43	57	VATVKMSLDDVEMRG	40.07
2108	DRB1*03:04	B2RH57	347	361	HAVITQDNVVTFENS	49.63
2109	DRB1*03:04	B2RH58	199	213	YELVGDPKAKFRNCM	21.02
2110	DRB1*03:04	B2RH58	196	210	ISDYELVGDPKAKFR	27.57
2111	DRB1*03:04	B2RH58	197	211	SDYELVGDPKAKFRN	28.58
2112	DRB1*03:04	B2RH58	198	212	DYELVGDPKAKFRNC	29.07
2113	DRB1*03:04	B2RH58	200	214	ELVGDPKAKFRNCMP	35.38
2114	DRB1*03:04	B2RH58	610	624	QAGVVRDIMTGRYYW	41.70
2115	DRB1*03:04	B2RH58	399	413	VPTVTIDANTKKIKV	44.46
2116	DRB1*03:04	B2RH58	609	623	EQAGVVRDIMTGRYY	46.38
2117	DRB1*03:04	B2RH58	195	209	NISDYELVGDPKAKF	48.52
2118	DRB1*03:04	B2RH59	332	346	SGMLTVDHTYTMVFVQ	25.64
2119	DRB1*03:04	B2RH59	331	345	GSGMLTVDHTYTMVVF	30.59
2120	DRB1*03:04	B2RH59	333	347	GMLTVDHTYTMVFVQG	34.67
2121	DRB1*03:04	B2RH59	330	344	DGSGMLTVDHTYTMVF	35.48
2122	DRB1*03:04	B2RH59	89	103	TAKIIPSEVERRIHF	45.09
2123	DRB1*03:05	A0PA81	56	70	QRVVIFVFDETGRRRI	43.93
2124	DRB1*03:05	A0PA81	58	72	VVIFVFDETGRRIDR	47.77
2125	DRB1*03:05	B2RH59	332	346	SGMLTVDHTYTMVFVQ	47.70
2126	DRB1*03:11	A0PA81	70	84	IDRLMDAAQVAARK	13.79
2127	DRB1*03:11	A0PA81	69	83	RIDRLMDAAQVAAR	16.97
2128	DRB1*03:11	A0PA81	71	85	DRLMDAAQVAARKP	17.52
2129	DRB1*03:11	A0PA81	273	287	MLNIYIDLRGANLNV	21.30
2130	DRB1*03:11	A0PA81	72	86	RLMDAAQVAARKPI	21.93
2131	DRB1*03:11	A0PA81	58	72	VVIFVFDETGRRIDR	23.30
2132	DRB1*03:11	A0PA81	272	286	KMLNIYIDLRGANLN	23.59
2133	DRB1*03:11	A0PA81	56	70	QRVVIFVFDETGRRRI	24.17
2134	DRB1*03:11	A0PA81	68	82	RRIDRLMDAAQVAA	24.98
2135	DRB1*03:11	A0PA81	57	71	RVVIFVFDETGRRID	25.45
2136	DRB1*03:11	A0PA81	271	285	GKMLNIYIDLRGANL	26.29
2137	DRB1*03:11	A0PA81	274	288	LNIYIDLRGANLNLV	27.15
2138	DRB1*03:11	A0PA81	59	73	VIFVFDETGRRIDRL	28.51
2139	DRB1*03:11	A0PA81	55	69	VQRVVIFVFDETGRR	39.22
2140	DRB1*03:11	A0PA81	270	284	IGKMLNIYIDLRGAN	41.38
2141	DRB1*03:11	A0PA81	60	74	IFVFDETGRRIDRLM	43.03
2142	DRB1*03:11	A0PA81	275	289	NIYIDLRGANLNLV	43.40
2143	DRB1*03:11	B2RH54	129	143	GLIMTAEPKTIVLKA	42.07
2144	DRB1*03:11	B2RH54	128	142	AGLIMTAEPKTIVLK	45.05
2145	DRB1*03:11	B2RH57	176	190	RIAAKITLDIKQVTP	15.98
2146	DRB1*03:11	B2RH57	177	191	IAAKITLDIKQVTPG	16.38

2147	DRB1*03:11	B2RH57	178	192	AAKITLTDIKQVTPGS	16.44
2148	DRB1*03:11	B2RH57	179	193	AKITLTDIKQVTPGSD	17.71
2149	DRB1*03:11	B2RH57	198	212	TKVQILRNAKNSRLL	22.52
2150	DRB1*03:11	B2RH57	175	189	NRIAAKITLTDIKQVT	22.78
2151	DRB1*03:11	B2RH57	199	213	KVQILRNAKNSRLLE	23.05
2152	DRB1*03:11	B2RH57	180	194	KITLTDIKQVTPGSDV	23.41
2153	DRB1*03:11	B2RH57	347	361	HAVITQDNVVTFENS	26.74
2154	DRB1*03:11	B2RH57	44	58	ATVKMSLDDVEMRGG	28.49
2155	DRB1*03:11	B2RH57	197	211	ITKVQILRNAKNSRL	29.16
2156	DRB1*03:11	B2RH57	346	360	PHAVITQDNVVTFEN	29.26
2157	DRB1*03:11	B2RH57	200	214	VQILRNAKNSRLLEG	29.65
2158	DRB1*03:11	B2RH57	167	181	TVQANISLNRIAAKI	31.83
2159	DRB1*03:11	B2RH57	166	180	GTVQANISLNRIAAK	32.18
2160	DRB1*03:11	B2RH57	430	444	GKKVILDKNINPQPT	32.21
2161	DRB1*03:11	B2RH57	43	57	VATVKMSLDDVEMRG	33.09
2162	DRB1*03:11	B2RH57	165	179	QGTVQANISLNRIAA	33.36
2163	DRB1*03:11	B2RH57	348	362	AVITQDNVVTFENSL	33.73
2164	DRB1*03:11	B2RH57	45	59	TVKMSLDDVEMRGGD	33.87
2165	DRB1*03:11	B2RH57	429	443	DGKKVILDKNINPQP	35.21
2166	DRB1*03:11	B2RH57	169	183	QANISLNRIAAKITL	36.08
2167	DRB1*03:11	B2RH57	345	359	NPHAVITQDNVVTFE	37.34
2168	DRB1*03:11	B2RH57	164	178	PQGTVQANISLNRIA	37.77
2169	DRB1*03:11	B2RH57	168	182	VQANISLNRIAAKIT	38.09
2170	DRB1*03:11	B2RH57	428	442	VDGKKVILDKNINPQ	40.62
2171	DRB1*03:11	B2RH57	431	445	KKVILDKNINPQPTD	41.88
2172	DRB1*03:11	B2RH57	423	437	NLFFFTVDGKKVILDK	42.19
2173	DRB1*03:11	B2RH57	238	252	AQSIIQASAPLYVYE	44.24
2174	DRB1*03:11	B2RH57	46	60	VKMSLDDVEMRGGDL	45.20
2175	DRB1*03:11	B2RH57	163	177	NPQGTVQANISLNRI	46.51
2176	DRB1*03:11	B2RH57	239	253	QSIIQASAPLYVYEN	47.20
2177	DRB1*03:11	B2RH57	196	210	KITKVQILRNAKNSR	47.65
2178	DRB1*03:11	B2RH57	424	438	LFFFTVDGKKVILDKN	47.97
2179	DRB1*03:11	B2RH57	422	436	TNLFFFTVDGKKVILD	49.20
2180	DRB1*03:11	B2RH57	201	215	QILRNAKNSRLLEGT	49.62
2181	DRB1*03:11	B2RH58	199	213	YELVGDPKAKFRNCM	14.08
2182	DRB1*03:11	B2RH58	196	210	ISDYELVGDPKAKFR	14.55
2183	DRB1*03:11	B2RH58	197	211	SDYELVGDPKAKFRN	14.81
2184	DRB1*03:11	B2RH58	198	212	DYELVGDPKAKFRNC	15.31
2185	DRB1*03:11	B2RH58	200	214	ELVGDPKAKFRNCMP	22.46
2186	DRB1*03:11	B2RH58	195	209	NISDYELVGDPKAKF	25.51
2187	DRB1*03:11	B2RH58	399	413	VPTVTIDANTKKIKV	26.28
2188	DRB1*03:11	B2RH58	610	624	QAGVVRDIMTGRYYW	30.61
2189	DRB1*03:11	B2RH58	609	623	EQAGVVRDIMTGRYY	33.23

2190	DRB1*03:11	B2RH58	400	414	PTVTIDANTKKIKVR	33.68
2191	DRB1*03:11	B2RH58	398	412	NVPTVTIDANTKKIK	33.86
2192	DRB1*03:11	B2RH58	438	452	KKIKIRQNPSQFIIN	34.16
2193	DRB1*03:11	B2RH58	439	453	KIKIRQNPSQFIINT	34.18
2194	DRB1*03:11	B2RH58	597	611	RAEIQLVDKLQREQA	35.83
2195	DRB1*03:11	B2RH58	437	451	EKKIKIRQNPSQFII	39.50
2196	DRB1*03:11	B2RH58	596	610	TRAEIQLVDKLQREQ	39.57
2197	DRB1*03:11	B2RH58	555	569	LRLIYHSNQONRYAL	42.01
2198	DRB1*03:11	B2RH58	611	625	AGVVRDIMGTRYYS	42.53
2199	DRB1*03:11	B2RH58	608	622	REQAGVVRDIMGTRY	44.96
2200	DRB1*03:11	B2RH58	595	609	PTRAEIQLVDKLQRE	45.54
2201	DRB1*03:11	B2RH58	397	411	ANVPTVTIDANTKKI	46.02
2202	DRB1*03:11	B2RH58	401	415	TVTIDANTKKIKVRS	46.53
2203	DRB1*03:11	B2RH59	332	346	SGMLTVDHTYMFVQ	15.54
2204	DRB1*03:11	B2RH59	331	345	GSGMLTVDHTYMFV	17.35
2205	DRB1*03:11	B2RH59	333	347	GMLTVDHTYMFVQ	19.58
2206	DRB1*03:11	B2RH59	89	103	TAKIIPSEVERRIHF	19.83
2207	DRB1*03:11	B2RH59	330	344	DGSGMLTVDHTYMF	20.83
2208	DRB1*03:11	B2RH59	88	102	FTAKIIPSEVERRIH	23.72
2209	DRB1*03:11	B2RH59	90	104	AKIIPSEVERRIHFI	23.94
2210	DRB1*03:11	B2RH59	87	101	TFTAKIIPSEVERRI	25.85
2211	DRB1*03:11	B2RH59	334	348	MLTVDHTYMFVQGE	34.57
2212	DRB1*03:11	B2RH59	91	105	KIIPSEVERRIHFI	38.36
2213	DRB1*03:11	B2RH59	329	343	SDGSGMLTVDHTYMF	40.89
2214	DRB1*03:11	B2RHG4	168	182	ANRLLDNVPLVRAIA	30.64
2215	DRB1*03:11	B2RHG4	167	181	LANRLLDNVPLVRAI	31.34
2216	DRB1*03:11	B2RHG4	166	180	FLANRLLDNVPLVRA	39.47
2217	DRB1*03:11	B2RHG4	183	197	KVELNISLSEKFQIV	40.06
2218	DRB1*03:11	B2RHG4	169	183	NRLLDNVPLVRAIAK	41.48
2219	DRB1*03:11	B2RHG4	113	127	KVYVVANVDNAVKTA	42.08
2220	DRB1*03:11	B2RHG4	185	199	ELNISLSEKFQIVPI	43.93
2221	DRB1*03:11	B2RHG4	184	198	VELNISLSEKFQIVP	44.78
2222	DRB1*03:11	B2RHG4	112	126	RKVYVVANVDNAVKT	49.67
2223	DRB1*03:13	A0PA81	70	84	IDRLMMDAAQVAARK	24.79
2224	DRB1*03:13	A0PA81	273	287	MLNIYIDLRGANLNV	29.81
2225	DRB1*03:13	A0PA81	69	83	RIDRLMMDAAQVAAR	31.27
2226	DRB1*03:13	A0PA81	56	70	QRVVFVDETGRRI	31.45
2227	DRB1*03:13	A0PA81	272	286	KMLNIYIDLRGANLN	32.83
2228	DRB1*03:13	A0PA81	58	72	VVVFVDETGRRIDR	34.62
2229	DRB1*03:13	A0PA81	71	85	DRLMMDAAQVAARKP	35.30
2230	DRB1*03:13	A0PA81	271	285	GKMLNIYIDLRGANL	36.38
2231	DRB1*03:13	A0PA81	57	71	RVVFVDETGRRID	36.61
2232	DRB1*03:13	A0PA81	274	288	LNIIYIDLRGANLNV	37.96

2233	DRB1*03:13	A0PA81	59	73	VIFVFDETGRRIDRL	41.72
2234	DRB1*03:13	A0PA81	72	86	RLMMDAAQVAARKPI	44.47
2235	DRB1*03:13	A0PA81	68	82	RRIDRLMMDAAQVAA	49.85
2236	DRB1*03:13	B2RH57	176	190	RIAAKITLDIKQVTP	23.10
2237	DRB1*03:13	B2RH57	177	191	IAAKITLDIKQVTPG	26.64
2238	DRB1*03:13	B2RH57	178	192	AAKITLDIKQVTPGS	28.17
2239	DRB1*03:13	B2RH57	179	193	AKITLDIKQVTPGSD	28.25
2240	DRB1*03:13	B2RH57	175	189	NRIAAKITLDIKQVT	29.31
2241	DRB1*03:13	B2RH57	180	194	KITLDIKQVTPGSDV	36.14
2242	DRB1*03:13	B2RH57	44	58	ATVKMSLDDVEMRGG	39.11
2243	DRB1*03:13	B2RH57	43	57	VATVKMSLDDVEMRG	40.07
2244	DRB1*03:13	B2RH57	347	361	HAVITQDNVVTFENS	49.63
2245	DRB1*03:13	B2RH58	199	213	YELVGDPKAKFRNCM	21.02
2246	DRB1*03:13	B2RH58	196	210	ISDYELVGDPKAKFR	27.57
2247	DRB1*03:13	B2RH58	197	211	SDYELVGDPKAKFRN	28.58
2248	DRB1*03:13	B2RH58	198	212	DYELVGDPKAKFRNC	29.07
2249	DRB1*03:13	B2RH58	200	214	ELVGDPKAKFRNCMP	35.38
2250	DRB1*03:13	B2RH58	610	624	QAGVVRDIMTGRIYW	41.70
2251	DRB1*03:13	B2RH58	399	413	VPTVTIDANTKKIKV	44.46
2252	DRB1*03:13	B2RH58	609	623	EQAGVVRDIMTGRIY	46.38
2253	DRB1*03:13	B2RH58	195	209	NISDYELVGDPKAKF	48.52
2254	DRB1*03:13	B2RH59	332	346	SGMLTVDHTYMFVQ	25.64
2255	DRB1*03:13	B2RH59	331	345	GSGMLTVDHTYMFV	30.59
2256	DRB1*03:13	B2RH59	333	347	GMLTVDHTYMFVQ	34.67
2257	DRB1*03:13	B2RH59	330	344	DGSGMLTVDHTYMF	35.48
2258	DRB1*03:13	B2RH59	89	103	TAKIIPSEVERRIHF	45.09
2259	DRB1*03:15	A0PA81	58	72	VVIFVFDETGRRIDR	35.79
2260	DRB1*03:15	A0PA81	56	70	QRVVIFVFDETGRRI	36.52
2261	DRB1*03:15	A0PA81	70	84	IDRLMMDAAQVAARK	37.43
2262	DRB1*03:15	A0PA81	57	71	RVVIFVFDETGRRID	40.35
2263	DRB1*03:15	A0PA81	59	73	VIFVFDETGRRIDRL	44.33
2264	DRB1*03:15	B2RH58	199	213	YELVGDPKAKFRNCM	27.85
2265	DRB1*03:15	B2RH58	196	210	ISDYELVGDPKAKFR	34.22
2266	DRB1*03:15	B2RH58	197	211	SDYELVGDPKAKFRN	36.14
2267	DRB1*03:15	B2RH58	198	212	DYELVGDPKAKFRNC	37.00
2268	DRB1*03:15	B2RH58	597	611	RAEIQLVDKLQREQA	44.96
2269	DRB1*03:15	B2RH58	596	610	TRAEIQLVDKLQREQ	47.57
2270	DRB1*03:15	B2RH58	595	609	PTRAEIQLVDKLQRE	47.98
2271	DRB1*03:15	B2RH58	200	214	ELVGDPKAKFRNCMP	49.94
2272	DRB1*03:15	B2RH59	89	103	TAKIIPSEVERRIHF	35.18
2273	DRB1*03:15	B2RH59	90	104	AKIIPSEVERRIHF	38.70
2274	DRB1*03:15	B2RH59	88	102	FTAKIIPSEVERRIH	47.14
2275	DRB1*03:15	B2RH59	332	346	SGMLTVDHTYMFVQ	49.51

2276	DRB1*04:01	A0PA81	119	133	KDLFFRLSSTDGIAQ	30.45
2277	DRB1*04:01	A0PA81	70	84	IDRLMDAAQVAARK	32.26
2278	DRB1*04:01	A0PA81	118	132	VKDLFFRLSSTDGIA	36.40
2279	DRB1*04:01	A0PA81	120	134	DLFFRLSSTDGIAQS	39.33
2280	DRB1*04:01	A0PA81	69	83	RIDRLMDAAQVAAR	41.34
2281	DRB1*04:01	A0PA81	71	85	DRLMDAAQVAARKP	48.16
2282	DRB1*04:01	A0PA81	121	135	LFFRLSSTDGIAQSP	49.92
2283	DRB1*04:01	B2RH54	172	186	RMAFTEIKVQMSAAY	27.95
2284	DRB1*04:01	B2RH54	254	268	APQGFYVLENDYSAN	32.23
2285	DRB1*04:01	B2RH54	36	50	SVVLKTSNSNRAFGV	32.32
2286	DRB1*04:01	B2RH54	256	270	QGFYVLENDYSANGG	33.82
2287	DRB1*04:01	B2RH54	171	185	ARMAFTEIKVQMSAA	34.16
2288	DRB1*04:01	B2RH54	255	269	PQGFYVLENDYSANG	34.75
2289	DRB1*04:01	B2RH54	91	105	QRTLVMANTGAMEL	39.67
2290	DRB1*04:01	B2RH54	37	51	VVLKTSNSNRAFGVG	41.69
2291	DRB1*04:01	B2RH54	35	49	ISVVLKTSNSNRAFG	42.67
2292	DRB1*04:01	B2RH54	257	271	GFYVLENDYSANGGT	42.92
2293	DRB1*04:01	B2RH54	173	187	MAFTEIKVQMSAAYD	43.47
2294	DRB1*04:01	B2RH54	253	267	DAPQGFYVLENDYSA	44.19
2295	DRB1*04:01	B2RH54	34	48	TISVVLKTSNSNRAF	45.94
2296	DRB1*04:01	B2RH54	170	184	HARMAFTEIKVQMSA	46.45
2297	DRB1*04:01	B2RH54	90	104	GQRTLVMANTGAME	46.77
2298	DRB1*04:01	B2RH57	337	351	LVPYVAEINPHAVIT	10.18
2299	DRB1*04:01	B2RH57	336	350	FLVPYVAEINPHAVI	10.31
2300	DRB1*04:01	B2RH57	338	352	VPYVAEINPHAVITQ	12.40
2301	DRB1*04:01	B2RH57	335	349	GFLVPYVAEINPHAV	13.10
2302	DRB1*04:01	B2RH57	339	353	PYVAEINPHAVITQD	18.15
2303	DRB1*04:01	B2RH57	334	348	YGFLVPYVAEINPHA	27.40
2304	DRB1*04:01	B2RH57	279	293	RYAYVNDKTTTANH	29.10
2305	DRB1*04:01	B2RH57	278	292	TRYAYVNDKTTTAN	30.34
2306	DRB1*04:01	B2RH57	280	294	YYAYVNDKTTTANHH	30.65
2307	DRB1*04:01	B2RH57	277	291	KTRYAYVNDKTTTA	43.68
2308	DRB1*04:01	B2RH57	281	295	YAYVNDKTTTANHHY	46.71
2309	DRB1*04:01	B2RH58	131	145	ETSFLKTLVPNSILL	27.94
2310	DRB1*04:01	B2RH58	112	126	KIYLVANVNFGSGSFE	31.43
2311	DRB1*04:01	B2RH58	130	144	SETSFLKTLVPNSIL	31.71
2312	DRB1*04:01	B2RH58	110	124	SFKIYLVANVNFGSGS	33.13
2313	DRB1*04:01	B2RH58	111	125	FKIYLVANVNFGSGSF	35.45
2314	DRB1*04:01	B2RH58	132	146	TSFLKTLVPNSILLQ	42.94
2315	DRB1*04:01	B2RH58	129	143	ASETSFLKTLVPNSI	46.85
2316	DRB1*04:01	B2RH58	109	123	NSFKIYLVANVNFGSG	47.85
2317	DRB1*04:01	B2RH59	162	176	MAKFSLSVTPPAESK	10.58
2318	DRB1*04:01	B2RH59	161	175	NMAKFSLSVTPPAES	11.19

2319	DRB1*04:01	B2RH59	163	177	AKFSLSVTTPPAESKL	12.03
2320	DRB1*04:01	B2RH59	160	174	RNMAKFSLSVTPPAE	12.11
2321	DRB1*04:01	B2RH59	432	446	KYQYVFFKANTSSAE	14.54
2322	DRB1*04:01	B2RH59	433	447	YQYVFFKANTSSAEN	14.66
2323	DRB1*04:01	B2RH59	164	178	KFSLSVTTPPAESKLY	15.05
2324	DRB1*04:01	B2RH59	434	448	QYVFFKANTSSAENN	16.65
2325	DRB1*04:01	B2RH59	431	445	EKYQYVFFKANTSSA	17.72
2326	DRB1*04:01	B2RH59	503	517	KTLYKYVLTTMPQNK	17.77
2327	DRB1*04:01	B2RH59	435	449	YVFFKANTSSAENNQ	20.02
2328	DRB1*04:01	B2RH59	159	173	LRNMAKFSLSVTPPA	21.76
2329	DRB1*04:01	B2RH59	504	518	TLYKYVLTTMPQNK	22.87
2330	DRB1*04:01	B2RH59	502	516	GKTLYKYVLTTMPQN	23.60
2331	DRB1*04:01	B2RH59	234	248	FYGFERDQSNIGTGA	26.83
2332	DRB1*04:01	B2RH59	505	519	LYKYVLTTMPQNKEL	30.70
2333	DRB1*04:01	B2RH59	520	534	QFRFKSNKVNSAENI	30.98
2334	DRB1*04:01	B2RH59	430	444	REKYQYVFFKANTSS	31.27
2335	DRB1*04:01	B2RH59	233	247	FFYGFERDQSNIGTG	32.53
2336	DRB1*04:01	B2RH59	501	515	GGKTLYKYVLTTMPQ	33.89
2337	DRB1*04:01	B2RH59	232	246	HFFYGFERDQSNIGT	34.02
2338	DRB1*04:01	B2RH59	436	450	VFFKANTSSAENNQV	39.37
2339	DRB1*04:01	B2RH59	266	280	YTTYKLDFVDTNKVR	39.56
2340	DRB1*04:01	B2RH59	519	533	LQFRFKSNKVNSAEN	41.03
2341	DRB1*04:01	B2RH59	521	535	FRFKSNKVNSAENIA	41.40
2342	DRB1*04:01	B2RH59	267	281	TTYKLDFVDTNKVRY	43.97
2343	DRB1*04:01	B2RH59	518	532	ELQFRFKSNKVNSAE	46.40
2344	DRB1*04:01	B2RH59	235	249	YGFERDQSNIGTGAG	49.88
2345	DRB1*04:01	B2RHG4	78	92	PAKYIAGNTFSGGI	21.78
2346	DRB1*04:01	B2RHG4	79	93	AKYIAGNTFSGGIW	21.98
2347	DRB1*04:01	B2RHG4	112	126	RKVYVVDNAVKT	23.13
2348	DRB1*04:01	B2RHG4	111	125	ERKVYVVDNAVKT	24.72
2349	DRB1*04:01	B2RHG4	76	90	ANPAKYIAGNTFSG	26.08
2350	DRB1*04:01	B2RHG4	113	127	KVYVVDNAVKTA	26.34
2351	DRB1*04:01	B2RHG4	77	91	NPAKYIAGNTFSGG	27.40
2352	DRB1*04:01	B2RHG4	80	94	KYIAGNTFSGGIWL	35.31
2353	DRB1*04:01	B2RHG4	192	206	EKFQIVPIIVNGSLS	36.13
2354	DRB1*04:01	B2RHG4	110	124	GERKVYVVDNAV	37.58
2355	DRB1*04:01	B2RHG4	191	205	SEKFQIVPIIVNGSL	38.97
2356	DRB1*04:01	B2RHG4	193	207	KFQIVPIIVNGSLSE	40.28
2357	DRB1*04:01	B2RHG4	14	28	VLLFSCSKNNPSEPV	43.97
2358	DRB1*04:01	B2RHG4	261	275	GTGYTLDANGKV TAL	45.63
2359	DRB1*04:01	B2RHG4	75	89	GANPAKYIAGNTFS	46.41
2360	DRB1*04:01	B2RHG4	114	128	VYVVDNAVKTAL	47.57
2361	DRB1*04:02	B2RH54	162	176	DPLKIKRVHARMAFT	42.79

2362	DRB1*04:02	B2RH54	164	178	LKIKRVHARMAFTEI	45.26
2363	DRB1*04:02	B2RH54	163	177	PLKIKRVHARMAFTE	49.04
2364	DRB1*04:02	B2RH54	161	175	NDPLKIKRVHARMAF	49.98
2365	DRB1*04:04	A0PA81	70	84	IDRLMMDAAQVAARK	48.09
2366	DRB1*04:04	B2RH54	91	105	QRTLVMANTGAMEL	14.74
2367	DRB1*04:04	B2RH54	92	106	RTLVMANTGAMELV	16.46
2368	DRB1*04:04	B2RH54	90	104	GQRTLVMANTGAME	17.84
2369	DRB1*04:04	B2RH54	89	103	AGQRTLVMANTGAM	18.68
2370	DRB1*04:04	B2RH54	36	50	SVVLKTSNSNRAFGV	28.72
2371	DRB1*04:04	B2RH54	93	107	TLVMANTGAMELVG	36.82
2372	DRB1*04:04	B2RH54	35	49	ISVVLKTSNSNRAFG	37.40
2373	DRB1*04:04	B2RH54	37	51	VVLKTSNSNRAFGVG	37.56
2374	DRB1*04:04	B2RH54	88	102	SAGQRTLVMANTGA	38.34
2375	DRB1*04:04	B2RH54	34	48	TISVVLKTSNSNRAF	38.51
2376	DRB1*04:04	B2RH54	163	177	PLKIKRVHARMAFTE	42.26
2377	DRB1*04:04	B2RH54	172	186	RMAFTEIKVQMSAAY	42.53
2378	DRB1*04:04	B2RH54	162	176	DPLKIKRVHARMAFT	43.59
2379	DRB1*04:04	B2RH54	173	187	MAFTEIKVQMSAAYD	47.96
2380	DRB1*04:04	B2RH57	197	211	ITKVQILRNAKNSRL	27.31
2381	DRB1*04:04	B2RH57	198	212	TKVQILRNAKNSRLL	30.00
2382	DRB1*04:04	B2RH57	199	213	KVQILRNAKNSRLLE	32.13
2383	DRB1*04:04	B2RH57	196	210	KITKVQILRNAKNSR	35.30
2384	DRB1*04:04	B2RH57	352	366	QDNVVTFENSLSFTV	37.73
2385	DRB1*04:04	B2RH57	195	209	IKITKVQILRNAKNS	38.32
2386	DRB1*04:04	B2RH57	194	208	VIKITKVQILRNAKN	38.44
2387	DRB1*04:04	B2RH57	353	367	DNVVTFENSLSFTVR	41.74
2388	DRB1*04:04	B2RH57	336	350	FLVPYVAEINPHAVI	45.66
2389	DRB1*04:04	B2RH57	337	351	LVPYVAEINPHAVIT	45.70
2390	DRB1*04:04	B2RH57	111	125	RQIYVIANEPDALTT	46.53
2391	DRB1*04:04	B2RH57	193	207	DVIKITKVQILRNAK	47.33
2392	DRB1*04:04	B2RH57	200	214	VQILRNAKNSRLLEG	48.90
2393	DRB1*04:04	B2RH58	630	644	KAIKILLPTASGNAT	33.74
2394	DRB1*04:04	B2RH58	629	643	DKAIKILLPTASGNA	39.10
2395	DRB1*04:04	B2RH58	112	126	KIYLVANVNFSGSFE	44.82
2396	DRB1*04:04	B2RH58	111	125	FKIYLVANVNFSGSF	44.94
2397	DRB1*04:04	B2RH58	628	642	PDKAIKILLPTASGN	46.20
2398	DRB1*04:04	B2RH58	110	124	SFKIYLVANVNFSGS	48.42
2399	DRB1*04:04	B2RH58	410	424	KIKVRSILPINNIPK	49.32
2400	DRB1*04:04	B2RH59	162	176	MAKFSLSVTPPAESK	30.29
2401	DRB1*04:04	B2RH59	161	175	NMAKFSLSVTPPAES	34.58
2402	DRB1*04:04	B2RH59	163	177	AKFSLSVTPPAESKL	35.43
2403	DRB1*04:04	B2RH59	153	167	LGQIQLLRNMAKFSL	38.99
2404	DRB1*04:04	B2RH59	160	174	RNMAKFSLSVTPPAE	40.59

2405	DRB1*04:04	B2RH59	432	446	KYQYVFFKANTSSAE	41.01
2406	DRB1*04:04	B2RH59	503	517	KTLYKYVLTTMPQNK	41.10
2407	DRB1*04:04	B2RH59	431	445	EKYQYVFFKANTSSA	43.08
2408	DRB1*04:04	B2RH59	152	166	NLGQIQLLRNMAKFS	43.46
2409	DRB1*04:04	B2RH59	164	178	KFSLSVTPPAESKLY	45.02
2410	DRB1*04:04	B2RH59	433	447	YQYVFFKANTSSAEN	45.10
2411	DRB1*04:04	B2RH59	268	282	YYKLDFVDTNKVRYN	49.79
2412	DRB1*04:04	B2RHG4	192	206	EKFQIVPIIVNGSLS	15.59
2413	DRB1*04:04	B2RHG4	193	207	KFQIVPIIVNGSLSE	16.95
2414	DRB1*04:04	B2RHG4	191	205	SEKFQIVPIIVNGSL	18.63
2415	DRB1*04:04	B2RHG4	194	208	FQIVPIIVNGSLSEF	22.74
2416	DRB1*04:04	B2RHG4	195	209	QIVPIIVNGSLSEFK	41.10
2417	DRB1*04:04	B2RHG4	190	204	LSEKFQIVPIIVNGS	42.88
2418	DRB1*04:04	B2RHG4	111	125	ERKVYVVANVDNAVK	43.35
2419	DRB1*04:04	B2RHG4	112	126	RKVYVVANVDNAVKT	44.33
2420	DRB1*04:05	A0PA81	119	133	KDLFFRLSSTDGIAQ	40.55
2421	DRB1*04:05	A0PA81	118	132	VKDLFFRLSSTDGIA	42.28
2422	DRB1*04:05	A0PA81	95	109	TVSFVAWANPDDHML	49.47
2423	DRB1*04:05	B2RH54	307	321	EGKTYYPVLVNFNSN	45.22
2424	DRB1*04:05	B2RH54	306	320	AEGKTYYPVLVNFNS	45.33
2425	DRB1*04:05	B2RH54	172	186	RMAFTEIKVQMSAAY	46.39
2426	DRB1*04:05	B2RH57	111	125	RQIYVIANEPDALTT	27.19
2427	DRB1*04:05	B2RH57	109	123	GPRQIYVIANEPDAL	35.30
2428	DRB1*04:05	B2RH57	110	124	PRQIYVIANEPDALT	35.79
2429	DRB1*04:05	B2RH57	336	350	FLVPYVAEINPHAVI	37.75
2430	DRB1*04:05	B2RH57	337	351	LVPYVAEINPHAVIT	39.32
2431	DRB1*04:05	B2RH57	112	126	QIYVIANEPDALTTK	40.24
2432	DRB1*04:05	B2RH58	131	145	ETSFLKTLVPNSILL	43.34
2433	DRB1*04:05	B2RH58	130	144	SETSFLKTLVPNSIL	49.32
2434	DRB1*04:05	B2RH59	503	517	KTLYKYVLTTMPQNK	19.97
2435	DRB1*04:05	B2RH59	502	516	GKTLYKYVLTTMPQN	23.34
2436	DRB1*04:05	B2RH59	432	446	KYQYVFFKANTSSAE	24.12
2437	DRB1*04:05	B2RH59	431	445	EKYQYVFFKANTSSA	24.87
2438	DRB1*04:05	B2RH59	504	518	TLYKYVLTTMPQNKKE	25.51
2439	DRB1*04:05	B2RH59	433	447	YQYVFFKANTSSAEN	26.42
2440	DRB1*04:05	B2RH59	162	176	MAKFSLSVTPPAESK	28.42
2441	DRB1*04:05	B2RH59	505	519	LYKYVLTTMPQNKEL	28.60
2442	DRB1*04:05	B2RH59	161	175	NMAKFSLSVTPPAES	29.14
2443	DRB1*04:05	B2RH59	160	174	RNMAKFSLSVTPPAE	29.42
2444	DRB1*04:05	B2RH59	501	515	GGKTLYKYVLTTMPQ	31.21
2445	DRB1*04:05	B2RH59	430	444	REKYQYVFFKANTSS	31.54
2446	DRB1*04:05	B2RH59	434	448	QYVFFKANTSSAENN	34.33
2447	DRB1*04:05	B2RH59	163	177	AKFSLSVTPPAESKL	38.46

2448	DRB1*04:05	B2RH59	159	173	LRNMAKFSLSVTPPA	39.13
2449	DRB1*04:05	B2RH59	429	443	VREKYQYVFFKANTS	39.47
2450	DRB1*04:05	B2RH59	435	449	YVFFKANTSSAENNQ	49.08
2451	DRB1*04:05	B2RHG4	191	205	SEKFQIVPIIVNGSL	46.36
2452	DRB1*04:07	B2RH59	162	176	MAKFSLSVTPPAESK	36.49
2453	DRB1*04:07	B2RH59	161	175	NMAKFSLSVTPPAES	41.58
2454	DRB1*04:07	B2RH59	163	177	AKFSLSVTPPAESKL	46.32
2455	DRB1*04:07	B2RH59	160	174	RNMAKFSLSVTPPAE	47.76
2456	DRB1*04:08	A0PA81	119	133	KDLFFRLSSTDGIAQ	26.89
2457	DRB1*04:08	A0PA81	118	132	VKDLFFRLSSTDGIA	30.40
2458	DRB1*04:08	A0PA81	120	134	DLFFRLSSTDGIAQS	37.12
2459	DRB1*04:08	A0PA81	117	131	NVKDLFFRLSSTDGI	46.90
2460	DRB1*04:08	B2RH54	91	105	QRTLVMANTGAMEL	26.46
2461	DRB1*04:08	B2RH54	172	186	RMAFTEIKVQMSAAY	30.46
2462	DRB1*04:08	B2RH54	92	106	RTLVMANTGAMELV	31.70
2463	DRB1*04:08	B2RH54	90	104	GQRTLVMANTGAME	33.04
2464	DRB1*04:08	B2RH54	89	103	AGQRTLVMANTGAM	37.01
2465	DRB1*04:08	B2RH54	254	268	APQGFYVLENDYSAN	37.50
2466	DRB1*04:08	B2RH54	171	185	ARMAFTEIKVQMSAA	38.87
2467	DRB1*04:08	B2RH54	256	270	QGFYVLENDYSANGG	38.96
2468	DRB1*04:08	B2RH54	255	269	PQGFYVLENDYSANG	39.32
2469	DRB1*04:08	B2RH54	309	323	KTYYPVLVNFNNSNNY	44.05
2470	DRB1*04:08	B2RH54	308	322	GKTYYPVLVNFNNSNN	45.24
2471	DRB1*04:08	B2RH54	173	187	MAFTEIKVQMSAAYD	45.71
2472	DRB1*04:08	B2RH54	36	50	SVVLKTSNSNRAFGV	46.44
2473	DRB1*04:08	B2RH54	307	321	EGKTYYPVLVNFNNSN	46.93
2474	DRB1*04:08	B2RH57	337	351	LVPYVAEINPHAVIT	14.50
2475	DRB1*04:08	B2RH57	336	350	FLVPYVAEINPHAVI	14.82
2476	DRB1*04:08	B2RH57	338	352	VPYVAEINPHAVITQ	18.98
2477	DRB1*04:08	B2RH57	335	349	GFLVPYVAEINPHAV	20.15
2478	DRB1*04:08	B2RH57	339	353	PYVAEINPHAVITQD	31.70
2479	DRB1*04:08	B2RH57	334	348	YGFLVPYVAEINPHA	46.55
2480	DRB1*04:08	B2RH58	110	124	SFKIYLVANVNFSGS	19.81
2481	DRB1*04:08	B2RH58	112	126	KIYLVANVNFSGSFE	20.03
2482	DRB1*04:08	B2RH58	111	125	FKIYLVANVNFSGSF	20.15
2483	DRB1*04:08	B2RH58	109	123	NSFKIYLVANVNFSG	25.66
2484	DRB1*04:08	B2RH58	131	145	ETSFLKTLVPNSILL	30.30
2485	DRB1*04:08	B2RH58	130	144	SETSFLKTLVPNSIL	36.38
2486	DRB1*04:08	B2RH58	108	122	NNSFKIYLVANVNFS	43.25
2487	DRB1*04:08	B2RH58	132	146	TSFLKTLVPNSILLQ	44.66
2488	DRB1*04:08	B2RH59	162	176	MAKFSLSVTPPAESK	11.83
2489	DRB1*04:08	B2RH59	161	175	NMAKFSLSVTPPAES	12.79
2490	DRB1*04:08	B2RH59	163	177	AKFSLSVTPPAESKL	14.18

2491	DRB1*04:08	B2RH59	160	174	RNMAKFSLSVTPPAE	14.51
2492	DRB1*04:08	B2RH59	432	446	KYQYVFFKANTSSAE	14.98
2493	DRB1*04:08	B2RH59	433	447	YQYVFFKANTSSAEN	15.71
2494	DRB1*04:08	B2RH59	431	445	EKYQYVFFKANTSSA	17.24
2495	DRB1*04:08	B2RH59	434	448	QYVFFKANTSSAENN	19.34
2496	DRB1*04:08	B2RH59	503	517	KTLYKYVLTTMPQNK	19.66
2497	DRB1*04:08	B2RH59	164	178	KFSLSVTPPAESKLY	19.73
2498	DRB1*04:08	B2RH59	504	518	TLYKYVLTTMPQNK	25.01
2499	DRB1*04:08	B2RH59	502	516	GKTLYKYVLTTMPQN	25.07
2500	DRB1*04:08	B2RH59	435	449	YVFFKANTSSAENNQ	26.55
2501	DRB1*04:08	B2RH59	430	444	REKYQYVFFKANTSS	27.95
2502	DRB1*04:08	B2RH59	159	173	LRNMAKFSLSVTPPA	28.11
2503	DRB1*04:08	B2RH59	505	519	LYKYVLTTMPQNKEL	32.97
2504	DRB1*04:08	B2RH59	501	515	GGKTLYKYVLTTMPQ	36.10
2505	DRB1*04:08	B2RH59	520	534	QFRFKSNKVNSAENI	47.53
2506	DRB1*04:08	B2RHG4	78	92	PAKYIAGNTFSGGI	24.17
2507	DRB1*04:08	B2RHG4	79	93	AKYIAGNTFSGGIW	24.19
2508	DRB1*04:08	B2RHG4	112	126	RKVYVVANVDNAVKT	26.38
2509	DRB1*04:08	B2RHG4	192	206	EKFQIVPIIVNGSLS	26.67
2510	DRB1*04:08	B2RHG4	111	125	ERKVYVVANVDNAV	27.92
2511	DRB1*04:08	B2RHG4	191	205	SEKFQIVPIIVNGSL	28.80
2512	DRB1*04:08	B2RHG4	193	207	KFQIVPIIVNGSLSE	30.02
2513	DRB1*04:08	B2RHG4	76	90	ANPAKYIAGNTFSG	30.30
2514	DRB1*04:08	B2RHG4	77	91	NPAKYIAGNTFSGG	30.99
2515	DRB1*04:08	B2RHG4	113	127	KVYVVANVDNAVKTA	33.21
2516	DRB1*04:08	B2RHG4	80	94	KYIAGNTFSGGIWL	40.39
2517	DRB1*04:08	B2RHG4	110	124	GERKVYVVANVDNAV	41.54
2518	DRB1*04:08	B2RHG4	194	208	FQIVPIIVNGSLSEF	47.82
2519	DRB1*04:10	A0PA81	227	241	FISPIIRVYPTLDTT	41.61
2520	DRB1*04:10	B2RH54	91	105	QRTLVMANTGAMEL	49.92
2521	DRB1*04:10	B2RH57	111	125	RQIYVIANEPDALTT	25.80
2522	DRB1*04:10	B2RH57	109	123	GPRQIYVIANEPDAL	33.87
2523	DRB1*04:10	B2RH57	110	124	PRQIYVIANEPDAL	34.83
2524	DRB1*04:10	B2RH57	112	126	QIYVIANEPDALTTK	35.12
2525	DRB1*04:10	B2RHG4	192	206	EKFQIVPIIVNGSLS	47.09
2526	DRB1*04:10	B2RHG4	191	205	SEKFQIVPIIVNGSL	47.61
2527	DRB1*04:44	B2RH54	91	105	QRTLVMANTGAMEL	25.37
2528	DRB1*04:44	B2RH54	92	106	RTLVMANTGAMELV	29.07
2529	DRB1*04:44	B2RH54	90	104	GQRTLVMANTGAME	33.14
2530	DRB1*04:44	B2RH54	89	103	AGQRTLVMANTGAM	39.18
2531	DRB1*04:44	B2RH58	111	125	FKIYLVANVNFSGSF	44.28
2532	DRB1*04:44	B2RH58	112	126	KIYLVANVNFSGSFE	46.31
2533	DRB1*04:44	B2RHG4	192	206	EKFQIVPIIVNGSLS	34.05

2534	DRB1*04:44	B2RHG4	193	207	KFQIVPIIVNGSLSE	35.41
2535	DRB1*04:44	B2RHG4	191	205	SEKFQIVPIIVNGSL	43.05
2536	DRB1*04:44	B2RHG4	194	208	FQIVPIIVNGSLSEF	48.91
2537	DRB1*04:56	B2RH54	91	105	QRTLVMANTGAMEL	27.30
2538	DRB1*04:56	B2RH54	92	106	RTLVMANTGAMELV	27.50
2539	DRB1*04:56	B2RH54	90	104	GQRTLVMANTGAME	37.25
2540	DRB1*04:56	B2RH54	89	103	AGQRTLVMANTGAM	38.07
2541	DRB1*04:56	B2RHG4	192	206	EKFQIVPIIVNGSLS	27.92
2542	DRB1*04:56	B2RHG4	193	207	KFQIVPIIVNGSLSE	31.84
2543	DRB1*04:56	B2RHG4	191	205	SEKFQIVPIIVNGSL	33.80
2544	DRB1*04:56	B2RHG4	194	208	FQIVPIIVNGSLSEF	44.47
2545	DRB1*04:72	A0PA81	70	84	IDRLMMDAAQVAARK	35.39
2546	DRB1*04:72	A0PA81	69	83	RIDRLMMDAAQVAAR	43.93
2547	DRB1*04:72	B2RH57	337	351	LVPYVAEINPHAVIT	14.09
2548	DRB1*04:72	B2RH57	336	350	FLVPYVAEINPHAVI	14.56
2549	DRB1*04:72	B2RH57	338	352	VPYVAEINPHAVITQ	18.47
2550	DRB1*04:72	B2RH57	335	349	GFLVPYVAEINPHAV	20.34
2551	DRB1*04:72	B2RH57	339	353	PYVAEINPHAVITQD	30.10
2552	DRB1*04:72	B2RH57	279	293	RYAYVNDKTTTANH	37.97
2553	DRB1*04:72	B2RH57	280	294	YYAYVNDKTTTANHH	39.00
2554	DRB1*04:72	B2RH57	278	292	TRYAYVNDKTTTAN	42.70
2555	DRB1*04:72	B2RH57	334	348	YGFLVPYVAEINPHA	49.50
2556	DRB1*04:72	B2RH58	111	125	FKIYLVANVNFSGSF	35.70
2557	DRB1*04:72	B2RH58	112	126	KIYLVANVNFSGSFE	36.14
2558	DRB1*04:72	B2RH58	110	124	SFKIYLVANVNFSGS	39.54
2559	DRB1*04:72	B2RH59	162	176	MAKFSLSVTPPAESK	20.01
2560	DRB1*04:72	B2RH59	161	175	NMAKFSLSVTPPAES	24.25
2561	DRB1*04:72	B2RH59	163	177	AKFSLSVTPPAESKL	27.13
2562	DRB1*04:72	B2RH59	520	534	QFRFKSNKVNSAENI	29.56
2563	DRB1*04:72	B2RH59	160	174	RNMAKFSLSVTPPAE	30.43
2564	DRB1*04:72	B2RH59	433	447	YQYVFFKANTSSAEN	35.91
2565	DRB1*04:72	B2RH59	434	448	QYVFFKANTSSAENN	37.51
2566	DRB1*04:72	B2RH59	234	248	FYGFERDQSNIGTGA	38.10
2567	DRB1*04:72	B2RH59	519	533	LQFRFKSNKVNSAEN	40.71
2568	DRB1*04:72	B2RH59	432	446	KYQYVFFKANTSSAE	40.98
2569	DRB1*04:72	B2RH59	521	535	FRFKSNKVNSAENIA	41.17
2570	DRB1*04:72	B2RH59	266	280	YTTYKLDFVDTNKVR	42.52
2571	DRB1*04:72	B2RH59	164	178	KFSLSVTPPAESKLY	43.30
2572	DRB1*04:72	B2RH59	435	449	YVFFKANTSSAENNQ	44.94
2573	DRB1*04:72	B2RH59	233	247	FFYGFERDQSNIGTG	47.88
2574	DRB1*04:72	B2RH59	518	532	ELQFRFKSNKVNSAE	48.70
2575	DRB1*04:72	B2RHG4	112	126	RKVYVVANVDNAVKT	27.27
2576	DRB1*04:72	B2RHG4	113	127	KVYVVANVDNAVKTA	28.65

2577	DRB1*04:72	B2RHG4	111	125	ERKVYVVANVDNAVK	31.25
2578	DRB1*04:72	B2RHG4	114	128	VYVVANVDNAVKTAL	48.31
2579	DRB1*04:72	B2RHG4	261	275	GTGYTLDANGKV TAL	49.27
2580	DRB1*07:01	A0PA81	263	277	GVPFIPVIGKMLNIY	10.62
2581	DRB1*07:01	A0PA81	262	276	DGVFPFIPVIGKMLNI	10.68
2582	DRB1*07:01	A0PA81	260	274	GSDGVFPFIPVIGKML	10.97
2583	DRB1*07:01	A0PA81	261	275	SDGVFPFIPVIGKMLN	11.40
2584	DRB1*07:01	A0PA81	264	278	VFPFIPVIGKMLNIYI	12.98
2585	DRB1*07:01	A0PA81	160	174	VDIYRRTAQVHIIIR	14.36
2586	DRB1*07:01	A0PA81	159	173	TVDIYRRTAQVHIII	15.62
2587	DRB1*07:01	A0PA81	161	175	DIYRRTAQVHIIIRG	18.10
2588	DRB1*07:01	A0PA81	158	172	QTVDIYRRTAQVHII	19.21
2589	DRB1*07:01	A0PA81	135	149	PGDLFSGVLTCPIEY	21.27
2590	DRB1*07:01	A0PA81	265	279	PFIPVIGKMLNIYID	22.90
2591	DRB1*07:01	A0PA81	162	176	IYRRTAQVHIIIRGY	24.57
2592	DRB1*07:01	A0PA81	136	150	GDLFSGVLTCPIEYG	24.87
2593	DRB1*07:01	A0PA81	134	148	SPGDLFSGVLTCPIE	26.41
2594	DRB1*07:01	A0PA81	119	133	KDLFFRLSSTDGIAQ	26.73
2595	DRB1*07:01	A0PA81	118	132	VKDLFFRLSSTDGIA	28.50
2596	DRB1*07:01	A0PA81	120	134	DLFFRLSSTDGIAQS	28.57
2597	DRB1*07:01	A0PA81	157	171	DQTVDIYRRTAQVHI	30.46
2598	DRB1*07:01	A0PA81	121	135	LFFRLSSTDGIAQSP	30.76
2599	DRB1*07:01	A0PA81	137	151	DLFSGVLTCPIEYGS	31.75
2600	DRB1*07:01	A0PA81	133	147	QSPGDLFSGVLTCPI	35.19
2601	DRB1*07:01	A0PA81	285	299	LNVLVSVTPWDVVQQ	43.36
2602	DRB1*07:01	A0PA81	284	298	NLNLVSVTPWDVVQ	47.71
2603	DRB1*07:01	A0PA81	117	131	NVKDLFFRLSSTDGI	47.88
2604	DRB1*07:01	B2RH54	162	176	DPLKIKRVHARMAFT	25.67
2605	DRB1*07:01	B2RH54	161	175	NDPLKIKRVHARMAF	25.68
2606	DRB1*07:01	B2RH54	163	177	PLKIKRVHARMAFTE	27.73
2607	DRB1*07:01	B2RH54	160	174	ENDPLKIKRVHARMA	33.05
2608	DRB1*07:01	B2RH54	164	178	LKIKRVHARMAFTEI	35.16
2609	DRB1*07:01	B2RH54	36	50	SVVLKTSNSNRAFGV	42.10
2610	DRB1*07:01	B2RH57	355	369	VVTFENSLSFTVRIK	8.37
2611	DRB1*07:01	B2RH57	356	370	VTFENSLSFTVRIKG	9.55
2612	DRB1*07:01	B2RH57	353	367	DNVVTFENSLSFTVR	10.42
2613	DRB1*07:01	B2RH57	354	368	NVVTFENSLSFTVRI	10.99
2614	DRB1*07:01	B2RH57	190	204	PGSDVIKITYKVQILR	14.30
2615	DRB1*07:01	B2RH57	357	371	TFENSLSFTVRIKGR	14.64
2616	DRB1*07:01	B2RH57	237	251	SAQSIIQASAPLYVY	15.62
2617	DRB1*07:01	B2RH57	191	205	GSDVIKITYKVQILRN	15.73
2618	DRB1*07:01	B2RH57	192	206	SDVIKITYKVQILRNA	15.76
2619	DRB1*07:01	B2RH57	2	16	KMKYFHHPSGLLPRL	16.22

2620	DRB1*07:01	B2RH57	193	207	DVIKITKVQILRNAK	16.87
2621	DRB1*07:01	B2RH57	352	366	QDNVVTFENSLSFV	17.03
2622	DRB1*07:01	B2RH57	238	252	AQSIIQASAPLYVYE	17.33
2623	DRB1*07:01	B2RH57	189	203	TPGSDVIKITKVQIL	17.98
2624	DRB1*07:01	B2RH57	421	435	RTNLFFFTVDGKKVIL	18.12
2625	DRB1*07:01	B2RH57	239	253	QSIIQASAPLYVYEN	19.42
2626	DRB1*07:01	B2RH57	1	15	MKMKYFHHPSGLLPR	19.78
2627	DRB1*07:01	B2RH57	236	250	GSAQSIIQASAPLYV	20.18
2628	DRB1*07:01	B2RH57	194	208	VIKITKVQILRNAKN	20.47
2629	DRB1*07:01	B2RH57	3	17	MKYFHHPSGLLPRLL	20.63
2630	DRB1*07:01	B2RH57	420	434	RRTNLFFFTVDGKKVI	21.65
2631	DRB1*07:01	B2RH57	422	436	TNLFFFTVDGKKVILD	24.22
2632	DRB1*07:01	B2RH57	240	254	SIIQASAPLYVYENI	24.23
2633	DRB1*07:01	B2RH57	419	433	QRRTNLFFFTVDGKKV	28.40
2634	DRB1*07:01	B2RH57	423	437	NLFFFTVDGKKVILDK	31.44
2635	DRB1*07:01	B2RH57	4	18	KYFHHPSGLLPRLLL	33.83
2636	DRB1*07:01	B2RH57	198	212	TKVQILRNAKNSRLL	39.48
2637	DRB1*07:01	B2RH57	199	213	KVQILRNAKNSRLL	42.61
2638	DRB1*07:01	B2RH57	241	255	IIQASAPLYVYENIG	43.46
2639	DRB1*07:01	B2RH58	102	116	YGQFNGNNSFKIYLV	18.17
2640	DRB1*07:01	B2RH58	101	115	MYGQFNGNNSFKIYL	21.91
2641	DRB1*07:01	B2RH58	545	559	DHWEYYTLNPLRLIY	26.30
2642	DRB1*07:01	B2RH58	544	558	QDHWEYYTLNPLRLI	27.43
2643	DRB1*07:01	B2RH58	546	560	HWEYYTLNPLRLIYH	27.61
2644	DRB1*07:01	B2RH58	100	114	SMYGQFNGNNSFKIY	30.17
2645	DRB1*07:01	B2RH58	103	117	GQFNGNNSFKIYLVA	30.50
2646	DRB1*07:01	B2RH58	547	561	WEYYTLNPLRLIYHS	33.96
2647	DRB1*07:01	B2RH58	131	145	ETSFLKTLVPNSILL	36.06
2648	DRB1*07:01	B2RH58	360	374	IELDYFSSHSLPPA	36.28
2649	DRB1*07:01	B2RH58	132	146	TSFLKTLVPNSILLQ	39.99
2650	DRB1*07:01	B2RH58	359	373	EIELDYFSSHSLPP	41.36
2651	DRB1*07:01	B2RH58	358	372	TEIELDYFSSHSLPP	42.36
2652	DRB1*07:01	B2RH58	130	144	SETSFLKTLVPNSIL	42.57
2653	DRB1*07:01	B2RH58	543	557	VQDHWEYYTLNPLRL	45.60
2654	DRB1*07:01	B2RH58	498	512	EVGFYKKGSSYTLK	47.22
2655	DRB1*07:01	B2RH59	278	292	KVRYNITRNHFYKMI	22.91
2656	DRB1*07:01	B2RH59	416	430	QGNPDLKRSVTVLVR	26.60
2657	DRB1*07:01	B2RH59	277	291	NKVRYNITRNHFYKM	27.46
2658	DRB1*07:01	B2RH59	431	445	EKYQYVFFKANTSSA	28.44
2659	DRB1*07:01	B2RH59	279	293	VRYNITRNHFYKMIL	28.51
2660	DRB1*07:01	B2RH59	314	328	NNIFLSAEVQALPAF	28.56
2661	DRB1*07:01	B2RH59	418	432	NPDLKRSVTVLVREK	30.55
2662	DRB1*07:01	B2RH59	417	431	GNPDLKRSVTVLVRE	31.54

2663	DRB1*07:01	B2RH59	276	290	TNKVRYNITRNHFYK	31.77
2664	DRB1*07:01	B2RH59	432	446	KYQYVFFKANTSSAE	31.83
2665	DRB1*07:01	B2RH59	419	433	PDLKRSVTVLVREKY	33.28
2666	DRB1*07:01	B2RH59	313	327	ANNIFLSAEVQALPA	33.76
2667	DRB1*07:01	B2RH59	503	517	KTLYKYVLTTMPQNK	34.16
2668	DRB1*07:01	B2RH59	267	281	TYYKLDFVDTNKVRY	34.42
2669	DRB1*07:01	B2RH59	311	325	AAANNIFLSAEVQAL	35.05
2670	DRB1*07:01	B2RH59	429	443	VREKYQYVFFKANTS	35.29
2671	DRB1*07:01	B2RH59	415	429	VQGNPDLKRSVTVLV	35.55
2672	DRB1*07:01	B2RH59	315	329	NIFLSAEVQALPAFS	35.82
2673	DRB1*07:01	B2RH59	275	289	DTNKVRYNITRNHFY	35.95
2674	DRB1*07:01	B2RH59	312	326	AANNIFLSAEVQALP	36.39
2675	DRB1*07:01	B2RH59	430	444	REKYQYVFFKANTSS	37.55
2676	DRB1*07:01	B2RH59	268	282	YYKLDFVDTNKVRYN	38.08
2677	DRB1*07:01	B2RH59	96	110	EVERRIHFIANYELA	39.47
2678	DRB1*07:01	B2RH59	266	280	YTYYKLDFVDTNKVR	40.29
2679	DRB1*07:01	B2RH59	162	176	MAKFSLSVTPPAESK	41.34
2680	DRB1*07:01	B2RH59	502	516	GKTLYKYVLTTMPQN	41.56
2681	DRB1*07:01	B2RH59	433	447	YQYVFFKANTSSAEN	42.18
2682	DRB1*07:01	B2RH59	160	174	RNMAKFSLSVTPPAE	42.31
2683	DRB1*07:01	B2RH59	159	173	LRNMAKFSLSVTPPA	42.79
2684	DRB1*07:01	B2RH59	280	294	RYNITRNHFYKMKILK	43.82
2685	DRB1*07:01	B2RH59	161	175	NMAKFSLSVTPPAES	44.09
2686	DRB1*07:01	B2RH59	420	434	DLKRSVTVLVREKYQ	46.55
2687	DRB1*07:01	B2RH59	97	111	VERRIHFIANYELAD	47.58
2688	DRB1*07:01	B2RH59	504	518	TLYKYVLTTMPQNKKE	49.78
2689	DRB1*07:01	B2RHG4	183	197	KVELNISLSEKFQIV	22.50
2690	DRB1*07:01	B2RHG4	182	196	AKVELNISLSEKFQI	26.47
2691	DRB1*07:01	B2RHG4	135	149	SDLQTVKRTTAMPWS	34.50
2692	DRB1*07:01	B2RHG4	136	150	DLQTVKRTTAMPWST	34.66
2693	DRB1*07:01	B2RHG4	181	195	IAKVELNISLSEKFQ	35.92
2694	DRB1*07:01	B2RHG4	184	198	VELNISLSEKFQIVP	39.93
2695	DRB1*07:01	B2RHG4	134	148	ESDLQTVKRTTAMPW	41.33
2696	DRB1*07:01	B2RHG4	180	194	AIKVELNISLSEKF	49.09
2697	DRB1*08:01	A0PA81	33	47	RPFRLTVRAWDADMQ	28.26
2698	DRB1*08:01	A0PA81	30	44	DCPRPFRLTVRAWDA	29.49
2699	DRB1*08:01	A0PA81	32	46	PRPFRLTVRAWDADM	35.17
2700	DRB1*08:01	A0PA81	31	45	CPRPFRLTVRAWDAD	40.64
2701	DRB1*08:01	A0PA81	29	43	SDCPRPFRLTVRAWD	41.54
2702	DRB1*08:01	A0PA81	34	48	PFRLTVRAWDADMQD	41.65
2703	DRB1*08:02	B2RH54	163	177	PLKIKRVHARMAFTE	46.36
2704	DRB1*08:02	B2RH54	162	176	DPLKIKRVHARMAFT	48.40
2705	DRB1*08:02	B2RH59	162	176	MAKFSLSVTPPAESK	43.58

2706	DRB1*08:04	B2RH54	162	176	DPLKIKRVHARMAFT	17.07
2707	DRB1*08:04	B2RH54	163	177	PLKIKRVHARMAFTE	17.09
2708	DRB1*08:04	B2RH54	164	178	LKIKRVHARMAFTEI	19.85
2709	DRB1*08:04	B2RH54	161	175	NDPLKIKRVHARMAF	19.92
2710	DRB1*08:04	B2RH54	165	179	KIKRVHARMAFTEIK	28.23
2711	DRB1*08:04	B2RH54	160	174	ENDPLKIKRVHARMA	38.23
2712	DRB1*08:04	B2RH54	195	209	EKIYGLIAKKQSNLF	48.47
2713	DRB1*08:04	B2RH54	196	210	KIYGLIAKKQSNLFG	48.81
2714	DRB1*08:04	B2RH54	91	105	QRTLVMANTGAMEL	49.26
2715	DRB1*08:04	B2RH57	194	208	VIKITKVQILRNAKN	38.96
2716	DRB1*08:04	B2RH57	193	207	DVIKITKVQILRNAK	39.11
2717	DRB1*08:04	B2RH57	197	211	ITKVQILRNAKNSRL	40.23
2718	DRB1*08:04	B2RH57	195	209	IKITKVQILRNAKNS	42.16
2719	DRB1*08:04	B2RH57	196	210	KITKVQILRNAKNSR	43.62
2720	DRB1*08:04	B2RH57	192	206	SDVIKITKVQILRNA	45.44
2721	DRB1*08:04	B2RH57	198	212	TKVQILRNAKNSRLL	48.05
2722	DRB1*08:04	B2RH58	183	197	VAAKLRLKKPVLNIS	27.35
2723	DRB1*08:04	B2RH58	175	189	LGSIELKRVAAKLRL	27.60
2724	DRB1*08:04	B2RH58	260	274	RPEFVMMLKLKKTGT	29.74
2725	DRB1*08:04	B2RH58	182	196	RVAAKLRLKKPVLNI	30.35
2726	DRB1*08:04	B2RH58	176	190	GSIELKRVAAKLRLK	31.81
2727	DRB1*08:04	B2RH58	174	188	QLGSIELKRVAAKLR	31.92
2728	DRB1*08:04	B2RH58	630	644	KAIKILLPTASGNAT	32.82
2729	DRB1*08:04	B2RH58	261	275	PEFVMMLKLKKTGTD	33.03
2730	DRB1*08:04	B2RH58	177	191	SIELKRVAAKLRLKK	33.11
2731	DRB1*08:04	B2RH58	259	273	GRPEFVMMLKLKKTG	33.47
2732	DRB1*08:04	B2RH58	184	198	AAKLRLKKPVLNISD	35.50
2733	DRB1*08:04	B2RH58	410	424	KIKVRSILPINNIPK	37.97
2734	DRB1*08:04	B2RH58	629	643	DKAIKILLPTASGNA	38.34
2735	DRB1*08:04	B2RH58	258	272	EGRPEFVMMLKLKKT	39.22
2736	DRB1*08:04	B2RH58	409	423	KKIKVRSILPINNIP	39.26
2737	DRB1*08:04	B2RH58	408	422	TKKIKVRSILPINNI	40.09
2738	DRB1*08:04	B2RH58	262	276	EFVMMLKLKKTGTDD	40.10
2739	DRB1*08:04	B2RH58	185	199	AKLRLKKPVLNISDY	40.97
2740	DRB1*08:04	B2RH58	173	187	KQLGSIELKRVAAKL	41.85
2741	DRB1*08:04	B2RH58	178	192	IELKRVAAKLRLKKP	46.85
2742	DRB1*08:04	B2RH58	628	642	PDKAIKILLPTASGN	46.92
2743	DRB1*08:04	B2RH58	181	195	KRVAAKLRLKKPVLN	49.13
2744	DRB1*08:04	B2RH59	287	301	HFYKMILKKAKAPGR	33.70
2745	DRB1*08:04	B2RH59	154	168	GQIQLLRNMAKFSL	36.35
2746	DRB1*08:04	B2RH59	155	169	QIQLLRNMAKFSLSV	37.71
2747	DRB1*08:04	B2RH59	153	167	LGQIQLLRNMAKFSL	39.00
2748	DRB1*08:04	B2RH59	288	302	FYKMILKKAKAPGRP	39.79

2749	DRB1*08:04	B2RH59	156	170	IQLLRNMAKFSLSVT	41.36
2750	DRB1*08:04	B2RH59	286	300	NHFKYKMLKKAKAPG	41.87
2751	DRB1*08:04	B2RH59	285	299	RNHFYKMLKKAKAP	45.98
2752	DRB1*08:04	B2RH59	152	166	NLGQIQLLRNMAKFS	46.82
2753	DRB1*08:04	B2RH59	134	148	ETIRMMWARISYPSIA	49.71
2754	DRB1*08:04	B2RH59	133	147	LETIRMMWARISYPSI	49.75
2755	DRB1*08:04	B2RHG4	193	207	KFQIVPIIVNGSLSE	43.51
2756	DRB1*08:04	B2RHG4	192	206	EKFQIVPIIVNGSLS	43.85
2757	DRB1*08:24	B2RH54	195	209	EKIYGLIAKKQSNLF	40.79
2758	DRB1*08:24	B2RH54	196	210	KIYGLIAKKQSNLFG	43.00
2759	DRB1*08:24	B2RH58	260	274	RPEFVMMLKLKKTGT	30.24
2760	DRB1*08:24	B2RH58	259	273	GRPEFVMMLKLKKTG	31.99
2761	DRB1*08:24	B2RH58	258	272	EGRPEFVMMLKLKKT	32.29
2762	DRB1*08:24	B2RH58	261	275	PEFVMMLKLKKTGTD	35.91
2763	DRB1*08:24	B2RH58	262	276	EFVMMLKLKKTGTDD	47.82
2764	DRB1*08:24	B2RH58	257	271	NEGRPEFVMMLKLKK	48.55
2765	DRB1*08:24	B2RH59	285	299	RNHFYKMLKKAKAP	34.95
2766	DRB1*08:24	B2RH59	284	298	TRNHFYKMLKKAKA	35.23
2767	DRB1*08:24	B2RH59	286	300	NHFKYKMLKKAKAPG	41.23
2768	DRB1*08:24	B2RH59	287	301	HFYKMLKKAKAPGR	42.60
2769	DRB1*08:30	B2RH58	111	125	FKIYLVANVNFSGSF	46.71
2770	DRB1*08:30	B2RH58	110	124	SFKIYLVANVNFSGS	48.43
2771	DRB1*09:01	A0PA81	119	133	KDLFFRLSSTDGIAQ	32.07
2772	DRB1*09:01	A0PA81	120	134	DLFFRLSSTDGIAQS	33.11
2773	DRB1*09:01	A0PA81	118	132	VKDLFFRLSSTDGIA	34.54
2774	DRB1*09:01	A0PA81	263	277	GVPFIPVIGKMLNIY	37.27
2775	DRB1*09:01	A0PA81	121	135	LFFRLSSTDGIAQSP	37.72
2776	DRB1*09:01	A0PA81	262	276	DGVFPFIPVIGKMLNI	38.61
2777	DRB1*09:01	A0PA81	261	275	SDGVFPFIPVIGKMLN	42.04
2778	DRB1*09:01	A0PA81	260	274	GSDGVFPFIPVIGKML	46.08
2779	DRB1*09:01	A0PA81	264	278	VFPFIPVIGKMLNIYI	47.04
2780	DRB1*09:01	A0PA81	135	149	PGDLFSGVLTCPIEY	47.92
2781	DRB1*09:01	A0PA81	160	174	VDIYRRTAQVHIIIR	49.23
2782	DRB1*09:01	B2RH54	128	142	AGLIMTAEPKTIVLK	47.19
2783	DRB1*09:01	B2RH54	127	141	AAGLIMTAEPKTIVL	48.21
2784	DRB1*09:01	B2RH57	237	251	SAQSIIQASAPLYVY	18.36
2785	DRB1*09:01	B2RH57	238	252	AQSIIQASAPLYVYE	18.66
2786	DRB1*09:01	B2RH57	355	369	VVTFENSLSFTVRIK	19.44
2787	DRB1*09:01	B2RH57	239	253	QSIIQASAPLYVYEN	20.22
2788	DRB1*09:01	B2RH57	356	370	VTFENSLSFTVRIKG	21.68
2789	DRB1*09:01	B2RH57	236	250	GSAQSIIQASAPLYV	22.93
2790	DRB1*09:01	B2RH57	240	254	SIIQASAPLYVYENI	24.53
2791	DRB1*09:01	B2RH57	353	367	DNVVTFENSLSFTVR	24.72

2792	DRB1*09:01	B2RH57	354	368	NVVTFENSLSFTVRI	28.30
2793	DRB1*09:01	B2RH57	357	371	TFENSLSFTVRIKGR	32.05
2794	DRB1*09:01	B2RH57	2	16	KMKYFHHPSGLLPRL	34.36
2795	DRB1*09:01	B2RH57	241	255	I IQASAPLYVYENIG	41.09
2796	DRB1*09:01	B2RH57	3	17	MKYFHHPSGLLPRL	41.86
2797	DRB1*09:01	B2RH57	1	15	MKMKYFHHPSGLLP	41.89
2798	DRB1*09:01	B2RH57	352	366	QDNVVTFENSLSFTV	43.32
2799	DRB1*09:01	B2RH58	498	512	EVGFYKKSGSSYTLK	43.14
2800	DRB1*09:01	B2RH58	499	513	VGFYKKSGSSYTLKH	45.28
2801	DRB1*09:01	B2RH58	360	374	I ELDYFSSHSLPPA	45.80
2802	DRB1*09:01	B2RH58	102	116	YQQFNGNNSFKIYLV	46.43
2803	DRB1*09:01	B2RH58	545	559	DHWEYYTLNPLRLIY	49.71
2804	DRB1*09:01	B2RH59	314	328	NNIFLSAEVQALPAF	22.24
2805	DRB1*09:01	B2RH59	313	327	ANNIFLSAEVQALPA	24.20
2806	DRB1*09:01	B2RH59	315	329	NIFLSAEVQALPAFS	25.32
2807	DRB1*09:01	B2RH59	162	176	MAKFSLSVTPPAESK	25.44
2808	DRB1*09:01	B2RH59	312	326	AANNIFLSAEVQALP	25.69
2809	DRB1*09:01	B2RH59	161	175	NMAKFSLSVTPPAES	26.44
2810	DRB1*09:01	B2RH59	160	174	RNMAKFSLSVTPPAE	26.88
2811	DRB1*09:01	B2RH59	432	446	KYQYVFFKANTSSAE	26.91
2812	DRB1*09:01	B2RH59	431	445	EKYQYVFFKANTSSA	27.28
2813	DRB1*09:01	B2RH59	311	325	AAANNIFLSAEVQAL	27.85
2814	DRB1*09:01	B2RH59	159	173	LRNMAKFSLSVTPPA	29.91
2815	DRB1*09:01	B2RH59	433	447	YQYVFFKANTSSAEN	30.31
2816	DRB1*09:01	B2RH59	163	177	AKFSLSVTPPAESKL	33.71
2817	DRB1*09:01	B2RH59	434	448	QYVFFKANTSSAENN	35.92
2818	DRB1*09:01	B2RH59	430	444	REKYQYVFFKANTSS	42.27
2819	DRB1*09:01	B2RH59	316	330	I FLSAEVQALPAFSD	44.17
2820	DRB1*09:01	B2RH59	429	443	VREKYQYVFFKANTS	44.45
2821	DRB1*09:01	B2RH59	164	178	KFSLSVTPPAESKLY	47.88
2822	DRB1*09:01	B2RHG4	183	197	KVELNISLSEKFQIV	44.89
2823	DRB1*09:01	B2RHG4	182	196	AKVELNISLSEKFQI	49.90
2824	DRB1*09:02	B2RH59	432	446	KYQYVFFKANTSSAE	49.70
2825	DRB1*10:01	A0PA81	119	133	KDLFFRLSSTDGIAQ	11.99
2826	DRB1*10:01	A0PA81	118	132	VKDLFFRLSSTDGIA	12.99
2827	DRB1*10:01	A0PA81	120	134	DLFFRLSSTDGIAQS	15.16
2828	DRB1*10:01	A0PA81	117	131	NVKDLFFRLSSTDGI	17.58
2829	DRB1*10:01	A0PA81	274	288	LNIYIDLRGANLNLV	20.31
2830	DRB1*10:01	A0PA81	273	287	MLNIYIDLRGANLNV	22.48
2831	DRB1*10:01	A0PA81	121	135	LFFRLSSTDGIAQSP	22.83
2832	DRB1*10:01	A0PA81	275	289	NIYIDLRGANLNLV	24.29
2833	DRB1*10:01	A0PA81	272	286	KMLNIYIDLRGANLN	27.49
2834	DRB1*10:01	A0PA81	263	277	GVPFIPVIGKMLNIY	28.35

2835	DRB1*10:01	AOPA81	262	276	DGVPFIPVIGKMLNI	31.77
2836	DRB1*10:01	AOPA81	276	290	IYIDLRGANLNLVLS	34.00
2837	DRB1*10:01	AOPA81	264	278	VPFIPVIGKMLNIYI	34.19
2838	DRB1*10:01	AOPA81	69	83	RIDRLMMDAAQVAAR	37.11
2839	DRB1*10:01	AOPA81	261	275	SDGVPFIPVIGKMLN	37.91
2840	DRB1*10:01	AOPA81	70	84	IDRLMMDAAQVAARK	38.15
2841	DRB1*10:01	AOPA81	271	285	GKMLNIYIDLRGANL	38.18
2842	DRB1*10:01	AOPA81	136	150	GDLFSGVLTCPIEYG	39.09
2843	DRB1*10:01	AOPA81	135	149	PGDLFSGVLTCPIEY	39.88
2844	DRB1*10:01	AOPA81	68	82	RRIDRLMMDAAQVAA	43.05
2845	DRB1*10:01	AOPA81	116	130	QNVKDLFFRLSSTDG	43.40
2846	DRB1*10:01	AOPA81	245	259	LKLYAYGQELLNIST	44.20
2847	DRB1*10:01	AOPA81	203	217	YTGLAELIGNAVQYR	45.71
2848	DRB1*10:01	AOPA81	244	258	HLKLYAYGQELLNIS	48.56
2849	DRB1*10:01	AOPA81	265	279	PFIPVIGKMLNIYID	49.79
2850	DRB1*10:01	B2RH54	172	186	RMAFTEIKVQMSAAY	8.03
2851	DRB1*10:01	B2RH54	171	185	ARMAFTEIKVQMSAA	9.11
2852	DRB1*10:01	B2RH54	173	187	MAFTEIKVQMSAAYD	10.77
2853	DRB1*10:01	B2RH54	309	323	KTYYPVLVNFNSNNY	11.20
2854	DRB1*10:01	B2RH54	170	184	HARMAFTEIKVQMSA	11.32
2855	DRB1*10:01	B2RH54	307	321	EGKTYYPVLVNFNSN	11.38
2856	DRB1*10:01	B2RH54	308	322	GKTYYPVLVNFNSNN	11.58
2857	DRB1*10:01	B2RH54	306	320	AEGKTYYPVLVNFNS	12.55
2858	DRB1*10:01	B2RH54	4	18	TKFFLLGLAALAMTA	15.96
2859	DRB1*10:01	B2RH54	174	188	AFTEIKVQMSAAYDN	16.75
2860	DRB1*10:01	B2RH54	3	17	KTKFFLLGLAALAMT	17.67
2861	DRB1*10:01	B2RH54	310	324	TYYPVLVNFNSNNYT	17.99
2862	DRB1*10:01	B2RH54	108	122	KTLAEVKALTTELTA	18.92
2863	DRB1*10:01	B2RH54	109	123	TLAEVKALTTELTAE	19.51
2864	DRB1*10:01	B2RH54	110	124	LAEVKALTTELTAEN	20.72
2865	DRB1*10:01	B2RH54	2	16	KKTKFFLLGLAALAM	20.78
2866	DRB1*10:01	B2RH54	305	319	DAEGKTYYPVLVNFN	23.37
2867	DRB1*10:01	B2RH54	1	15	MKKTKFFLLGLAALA	24.47
2868	DRB1*10:01	B2RH54	5	19	KFFLLGLAALAMTAC	24.54
2869	DRB1*10:01	B2RH54	169	183	VHARMAFTEIKVQMS	25.75
2870	DRB1*10:01	B2RH54	224	238	SLTTFNGAYTPANYA	26.20
2871	DRB1*10:01	B2RH54	111	125	AEVKALTTELTAENQ	26.53
2872	DRB1*10:01	B2RH54	225	239	LTTFNGAYTPANYAN	26.83
2873	DRB1*10:01	B2RH54	91	105	QRTLVMANTGAMEL	29.06
2874	DRB1*10:01	B2RH54	92	106	RTLVMANTGAMELV	32.18
2875	DRB1*10:01	B2RH54	175	189	FTEIKVQMSAAYDNI	32.83
2876	DRB1*10:01	B2RH54	112	126	EVKALTTELTAENQE	33.81
2877	DRB1*10:01	B2RH54	256	270	QGFYVLENDYSANGG	33.96

2878	DRB1*10:01	B2RH54	164	178	LKIKRVHARMAFTEI	34.46
2879	DRB1*10:01	B2RH54	163	177	PLKIKRVHARMAFTE	34.54
2880	DRB1*10:01	B2RH54	254	268	APQGFYVLENDYSAN	34.56
2881	DRB1*10:01	B2RH54	90	104	GQRTLVMANTGAME	34.57
2882	DRB1*10:01	B2RH54	253	267	DAPQGFYVLENDYSA	37.19
2883	DRB1*10:01	B2RH54	162	176	DPLKIKRVHARMAFT	38.34
2884	DRB1*10:01	B2RH54	89	103	AGQRTLVMANTGAM	39.20
2885	DRB1*10:01	B2RH54	255	269	PQGFYVLENDYSANG	39.22
2886	DRB1*10:01	B2RH54	189	203	IYTFVPEKIYGLIAK	39.78
2887	DRB1*10:01	B2RH54	107	121	GKTLAEVKALTTELT	40.78
2888	DRB1*10:01	B2RH54	176	190	TEIKVQMSAAYDNIY	40.85
2889	DRB1*10:01	B2RH54	188	202	NIYTFVPEKIYGLIA	42.83
2890	DRB1*10:01	B2RH54	223	237	GSLTTFNGAYTPANY	43.05
2891	DRB1*10:01	B2RH54	177	191	EIKVQMSAAYDNIYT	43.11
2892	DRB1*10:01	B2RH54	257	271	GFYVLENDYSANGGT	43.28
2893	DRB1*10:01	B2RH54	165	179	KIKRVHARMAFTEIK	44.98
2894	DRB1*10:01	B2RH54	226	240	TFNGAYTPANYANV	48.42
2895	DRB1*10:01	B2RH57	336	350	FLVPYVAEINPHAVI	13.45
2896	DRB1*10:01	B2RH57	337	351	LVPYVAEINPHAVIT	13.60
2897	DRB1*10:01	B2RH57	197	211	ITKVQILRNAKNSRL	16.60
2898	DRB1*10:01	B2RH57	195	209	IKITKVQILRNAKNS	17.05
2899	DRB1*10:01	B2RH57	335	349	GFLVPYVAEINPHAV	17.25
2900	DRB1*10:01	B2RH57	194	208	VIKITKVQILRNAKN	17.63
2901	DRB1*10:01	B2RH57	338	352	VPYVAEINPHAVITQ	17.66
2902	DRB1*10:01	B2RH57	196	210	KITKVQILRNAKNSR	18.51
2903	DRB1*10:01	B2RH57	331	345	NLDYGFLVPYVAEIN	18.81
2904	DRB1*10:01	B2RH57	198	212	TKVQILRNAKNSRLL	19.49
2905	DRB1*10:01	B2RH57	330	344	ENLDYGFLVPYVAEI	20.78
2906	DRB1*10:01	B2RH57	332	346	LDYGFLVPYVAEINP	20.94
2907	DRB1*10:01	B2RH57	193	207	DVIKITKVQILRNAK	23.00
2908	DRB1*10:01	B2RH57	329	343	VENLDYGFLVPYVAE	24.12
2909	DRB1*10:01	B2RH57	199	213	KVQILRNAKNSRLL	24.60
2910	DRB1*10:01	B2RH57	333	347	DYGFLVPYVAEINPH	25.50
2911	DRB1*10:01	B2RH57	334	348	YGFLVPYVAEINPHA	26.11
2912	DRB1*10:01	B2RH57	149	163	VRPFTMTGMATATLN	27.24
2913	DRB1*10:01	B2RH57	192	206	SDVIKITKVQILRNA	28.99
2914	DRB1*10:01	B2RH57	339	353	PYVAEINPHAVITQD	29.11
2915	DRB1*10:01	B2RH57	238	252	AQSIIQASAPLYVYE	30.58
2916	DRB1*10:01	B2RH57	239	253	QSIIQASAPLYVYEN	31.13
2917	DRB1*10:01	B2RH57	148	162	IVRPFTMTGMATATL	32.72
2918	DRB1*10:01	B2RH57	150	164	RPFTMTGMATATLNP	33.16
2919	DRB1*10:01	B2RH57	237	251	SAQSIIQASAPLYVY	34.26
2920	DRB1*10:01	B2RH57	355	369	VVTFENSLSFTVRIK	35.19

2921	DRB1*10:01	B2RH57	312	326	MGEFSSLLLLTTTVLP	37.99
2922	DRB1*10:01	B2RH57	328	342	TVENLDYGFLVPYVA	40.14
2923	DRB1*10:01	B2RH57	111	125	RQIYVIANEPDALTT	41.85
2924	DRB1*10:01	B2RH57	313	327	GEFSSLLLLTTTVLPW	44.03
2925	DRB1*10:01	B2RH57	240	254	SIIQASAPLYVYENI	45.51
2926	DRB1*10:01	B2RH57	151	165	PFTMTGMATATLNPQ	45.89
2927	DRB1*10:01	B2RH57	110	124	PRQIYVIANEPDALT	46.12
2928	DRB1*10:01	B2RH57	356	370	VTFENSLSFTVRIKG	46.21
2929	DRB1*10:01	B2RH57	147	161	PIVRPFTMTGMATAT	46.41
2930	DRB1*10:01	B2RH57	404	418	YTIKVKALKPNGIGI	48.52
2931	DRB1*10:01	B2RH57	405	419	TIKVKALKPNGIGIQ	49.02
2932	DRB1*10:01	B2RH58	546	560	HWEYYTLNPLRLIYH	8.40
2933	DRB1*10:01	B2RH58	410	424	KIKVRSILPINNIPK	8.83
2934	DRB1*10:01	B2RH58	545	559	DHWEYYTLNPLRLIY	8.86
2935	DRB1*10:01	B2RH58	409	423	KKIKVRSILPINNIP	9.87
2936	DRB1*10:01	B2RH58	547	561	WEYYTLNPLRLIYHS	9.89
2937	DRB1*10:01	B2RH58	544	558	QDHWEYYTLNPLRLI	10.23
2938	DRB1*10:01	B2RH58	131	145	ETSFLKTLVPNSILL	10.26
2939	DRB1*10:01	B2RH58	408	422	TKKIKVRSILPINNI	10.81
2940	DRB1*10:01	B2RH58	411	425	IKVRSILPINNIPKD	10.90
2941	DRB1*10:01	B2RH58	130	144	SETSFLKTLVPNSIL	11.64
2942	DRB1*10:01	B2RH58	132	146	TSFLKTLVPNSILLQ	12.09
2943	DRB1*10:01	B2RH58	630	644	KAIKILLPTASGNAT	13.09
2944	DRB1*10:01	B2RH58	548	562	EYYTLNPLRLIYHSN	13.39
2945	DRB1*10:01	B2RH58	629	643	DKAIKILLPTASGNA	14.86
2946	DRB1*10:01	B2RH58	628	642	PDKAIKILLPTASGN	16.15
2947	DRB1*10:01	B2RH58	543	557	VQDHWEYYTLNPLRL	16.19
2948	DRB1*10:01	B2RH58	110	124	SFKIYLVANVNFSGS	16.29
2949	DRB1*10:01	B2RH58	627	641	LPDKAIKILLPTASG	16.39
2950	DRB1*10:01	B2RH58	129	143	ASETSFLKTLVPNSI	17.12
2951	DRB1*10:01	B2RH58	412	426	KVRSILPINNIPKDI	17.12
2952	DRB1*10:01	B2RH58	133	147	SFLKTLVPNSILLQN	17.97
2953	DRB1*10:01	B2RH58	109	123	NSFKIYLVANVNFSG	18.96
2954	DRB1*10:01	B2RH58	111	125	FKIYLVANVNFSGSF	19.31
2955	DRB1*10:01	B2RH58	112	126	KIYLVANVNFSGSFE	20.22
2956	DRB1*10:01	B2RH58	631	645	AIKILLPTASGNATE	20.45
2957	DRB1*10:01	B2RH58	407	421	NTKKIKVRSILPINN	22.14
2958	DRB1*10:01	B2RH58	342	356	VQYLEVIPQETVMNM	22.45
2959	DRB1*10:01	B2RH58	626	640	GLPDKAIKILLPTAS	22.93
2960	DRB1*10:01	B2RH58	473	487	KAIYQIVVLSPPADG	25.19
2961	DRB1*10:01	B2RH58	37	51	TSSLFLQVQPYNQRS	25.96
2962	DRB1*10:01	B2RH58	108	122	NNSFKIYLVANVNFS	26.00
2963	DRB1*10:01	B2RH58	475	489	IYQIVVLSPPADGNM	26.04

2964	DRB1*10:01	B2RH58	343	357	QYLEVIPQETVMNMT	26.18
2965	DRB1*10:01	B2RH58	472	486	NKAIYQIVVLSPPAD	26.54
2966	DRB1*10:01	B2RH58	474	488	AIYQIVVLSPPADGN	28.44
2967	DRB1*10:01	B2RH58	340	354	PDVQYLEVIPQETVM	29.39
2968	DRB1*10:01	B2RH58	341	355	DVQYLEVIPQETVMN	29.89
2969	DRB1*10:01	B2RH58	38	52	SSLFLQVQPYNQSE	30.02
2970	DRB1*10:01	B2RH58	36	50	ETSSLFLQVQPYNQR	30.19
2971	DRB1*10:01	B2RH58	471	485	NNKAIYQIVVLSPPA	32.43
2972	DRB1*10:01	B2RH58	339	353	LPDVQYLEVIPQETV	34.45
2973	DRB1*10:01	B2RH58	549	563	YYTLNPLRLIYHSNQ	35.23
2974	DRB1*10:01	B2RH58	476	490	YQIVVLSPPADGNMI	35.35
2975	DRB1*10:01	B2RH58	344	358	YLEVIPQETVMNMTT	36.06
2976	DRB1*10:01	B2RH58	151	165	PEDKFAMIGSVEKQI	36.74
2977	DRB1*10:01	B2RH58	134	148	FLKTLVPNSILLQND	38.68
2978	DRB1*10:01	B2RH58	360	374	IELDYFSSHSLPPA	38.76
2979	DRB1*10:01	B2RH58	152	166	EDKFAMIGSVEKQIN	39.03
2980	DRB1*10:01	B2RH58	530	544	PSFELASQLGATLVQ	39.03
2981	DRB1*10:01	B2RH58	39	53	SLFLQVQPYNQREE	39.44
2982	DRB1*10:01	B2RH58	529	543	SPSFELASQLGATLV	40.00
2983	DRB1*10:01	B2RH58	231	245	AIDYRPMTEANSSVH	40.66
2984	DRB1*10:01	B2RH58	153	167	DKFAMIGSVEKQINM	41.28
2985	DRB1*10:01	B2RH58	246	260	FYSYNEWALNNEGR	42.29
2986	DRB1*10:01	B2RH58	230	244	EADYRPMTEANSSV	43.65
2987	DRB1*10:01	B2RH58	280	294	KPYYYRIPVDGSDKK	46.72
2988	DRB1*10:01	B2RH58	361	375	ELDYFSSHSLPPAD	48.00
2989	DRB1*10:01	B2RH58	244	258	VHFYSYNEWALNNE	48.29
2990	DRB1*10:01	B2RH58	245	259	HFYSYNEWALNNEG	48.51
2991	DRB1*10:01	B2RH58	362	376	LDYFSSHSLPPADV	48.88
2992	DRB1*10:01	B2RH59	503	517	KTLYKYVLTTMPQNK	6.73
2993	DRB1*10:01	B2RH59	432	446	KYQYVFFKANTSSAE	7.39
2994	DRB1*10:01	B2RH59	504	518	TLYKYVLTTMPQNK	7.50
2995	DRB1*10:01	B2RH59	505	519	LYKYVLTTMPQNKEL	7.52
2996	DRB1*10:01	B2RH59	431	445	EKYQYVFFKANTSSA	7.69
2997	DRB1*10:01	B2RH59	433	447	YQYVFFKANTSSAEN	8.08
2998	DRB1*10:01	B2RH59	502	516	GKTLYKYVLTTMPQN	9.42
2999	DRB1*10:01	B2RH59	162	176	MAKFSLSVTPPAESK	9.68
3000	DRB1*10:01	B2RH59	430	444	REKYQYVFFKANTSS	9.93
3001	DRB1*10:01	B2RH59	434	448	QYVFFKANTSSAENN	10.27
3002	DRB1*10:01	B2RH59	506	520	YKYVLTTMPQNKELQ	10.73
3003	DRB1*10:01	B2RH59	161	175	NMAKFSLSVTPPAES	11.22
3004	DRB1*10:01	B2RH59	163	177	AKFSLSVTPPAESKL	11.47
3005	DRB1*10:01	B2RH59	160	174	RNMAKFSLSVTPPAE	13.32
3006	DRB1*10:01	B2RH59	314	328	NNIFLSAEVQALPAF	14.17

3007	DRB1*10:01	B2RH59	501	515	GGKTLYKYVLTTMPQ	14.49
3008	DRB1*10:01	B2RH59	429	443	VREKYQYVFFKANTS	14.67
3009	DRB1*10:01	B2RH59	164	178	KFSLSVTPPAESKLY	14.76
3010	DRB1*10:01	B2RH59	315	329	NIFLSAEVQALPAFS	16.30
3011	DRB1*10:01	B2RH59	313	327	ANNIFLSAEVQALPA	17.04
3012	DRB1*10:01	B2RH59	435	449	YVFFKANTSSAENNQ	17.21
3013	DRB1*10:01	B2RH59	507	521	KYVLTTMPQNKELQF	18.44
3014	DRB1*10:01	B2RH59	175	189	SKLYDASYALYNSWN	19.05
3015	DRB1*10:01	B2RH59	174	188	ESKLYDASYALYNSW	19.41
3016	DRB1*10:01	B2RH59	312	326	AANNIFLSAEVQALP	22.67
3017	DRB1*10:01	B2RH59	365	379	PDYSKLTVSVSTPTG	22.81
3018	DRB1*10:01	B2RH59	176	190	KLYDASYALYNSWNK	23.07
3019	DRB1*10:01	B2RH59	364	378	NPDYSKLTVSVSTPT	23.48
3020	DRB1*10:01	B2RH59	362	376	QNNPDYSKLTVSVST	23.81
3021	DRB1*10:01	B2RH59	363	377	NNPDYSKLTVSVSTP	24.96
3022	DRB1*10:01	B2RH59	366	380	DYSKLTVSVSTPTGQ	25.10
3023	DRB1*10:01	B2RH59	173	187	AESKLYDASYALYNS	25.62
3024	DRB1*10:01	B2RH59	159	173	LRNMAKFSLSVTPPA	26.83
3025	DRB1*10:01	B2RH59	316	330	IFLSAEVQALPAFSD	27.63
3026	DRB1*10:01	B2RH59	284	298	TRNHFYKMILKKAKA	28.01
3027	DRB1*10:01	B2RH59	285	299	RNHFYKMILKKAKAP	28.67
3028	DRB1*10:01	B2RH59	283	297	ITRNHFYKMILKKAK	32.77
3029	DRB1*10:01	B2RH59	500	514	EGGKTLYKYVLTTMP	34.69
3030	DRB1*10:01	B2RH59	266	280	YTYYKLDFVDTNKVR	34.91
3031	DRB1*10:01	B2RH59	339	353	HTYMFVQGEPSGTF	35.43
3032	DRB1*10:01	B2RH59	311	325	AAANNIFLSAEVQAL	36.37
3033	DRB1*10:01	B2RH59	286	300	NHFYKMILKKAKAPG	38.77
3034	DRB1*10:01	B2RH59	267	281	TYYKLDFVDTNKVRY	39.14
3035	DRB1*10:01	B2RH59	340	354	TYMFVQGEPSGTFQ	40.99
3036	DRB1*10:01	B2RH59	436	450	VFFKANTSSAENNQV	44.50
3037	DRB1*10:01	B2RH59	520	534	QFRFKSNKVNSAENI	46.43
3038	DRB1*10:01	B2RH59	151	165	QNLGQIQLLRNMAKF	49.39
3039	DRB1*10:01	B2RH59	265	279	DYTYYKLDFVDTNKV	49.56
3040	DRB1*10:01	B2RH59	268	282	YYKLDFVDTNKVRYN	49.56
3041	DRB1*10:01	B2RH59	361	375	GQNNPDYSKLTVSVS	49.69
3042	DRB1*10:01	B2RHG4	191	205	SEKFQIVPIIVNGSL	10.70
3043	DRB1*10:01	B2RHG4	192	206	EKFQIVPIIVNGSLS	11.25
3044	DRB1*10:01	B2RHG4	190	204	LSEKFQIVPIIVNGS	12.88
3045	DRB1*10:01	B2RHG4	193	207	KFQIVPIIVNGSLSE	14.39
3046	DRB1*10:01	B2RHG4	189	203	SLSEKFQIVPIIVNG	15.05
3047	DRB1*10:01	B2RHG4	112	126	RKVYVVANVDNAVKT	18.39
3048	DRB1*10:01	B2RHG4	111	125	ERKVYVVANVDNAVK	18.70
3049	DRB1*10:01	B2RHG4	78	92	PAKYIAGNTFSGGI	21.31

3050	DRB1*10:01	B2RHG4	79	93	AKYYIAGNTFSGGIW	21.33
3051	DRB1*10:01	B2RHG4	188	202	ISLSEKFQIVPIIVN	24.25
3052	DRB1*10:01	B2RHG4	113	127	KVYVVANVDNAVKTA	25.06
3053	DRB1*10:01	B2RHG4	110	124	GERKVYVVANVDNAV	25.12
3054	DRB1*10:01	B2RHG4	77	91	NPAKYIAGNTFSGG	28.49
3055	DRB1*10:01	B2RHG4	76	90	ANPAKYIAGNTFSG	30.24
3056	DRB1*10:01	B2RHG4	80	94	KYYIAGNTFSGGIWL	32.69
3057	DRB1*10:01	B2RHG4	1	15	MKKYLLYASLLTSVL	32.73
3058	DRB1*10:01	B2RHG4	194	208	FQIVPIIVNGSLSEF	33.34
3059	DRB1*10:01	B2RHG4	2	16	KKYLLYASLLTSVLL	37.46
3060	DRB1*10:01	B2RHG4	68	82	LLLFDQSGANPAKY	42.82
3061	DRB1*10:01	B2RHG4	66	80	LYLLLFQSGANPAK	43.09
3062	DRB1*10:01	B2RHG4	65	79	NLYLLLFQSGANPA	44.55
3063	DRB1*10:01	B2RHG4	64	78	TNLYLLLFQSGANP	46.13
3064	DRB1*10:01	B2RHG4	67	81	YLLLFQSGANPAKY	48.06
3065	DRB1*10:01	B2RHG4	109	123	AGERKVYVVANVDNA	49.02
3066	DRB1*10:01	B2RHG4	63	77	ITNLYLLLFQSGAN	49.65
3067	DRB1*11:01	A0PA81	33	47	RPFRLTVRAWDADMQ	30.44
3068	DRB1*11:01	A0PA81	30	44	DCPRPFRLTVRAWDA	34.41
3069	DRB1*11:01	A0PA81	32	46	PRPFRLTVRAWDADM	35.97
3070	DRB1*11:01	A0PA81	166	180	TAQVHIIIRGYQEWL	41.46
3071	DRB1*11:01	A0PA81	31	45	CPRPFRLTVRAWDAD	44.40
3072	DRB1*11:01	A0PA81	165	179	RTAQVHIIIRGYQEW	48.52
3073	DRB1*11:01	A0PA81	167	181	AQVHIIIRGYQEWLE	49.34
3074	DRB1*11:01	B2RH54	196	210	KIYGLIAKKQSNLFG	12.76
3075	DRB1*11:01	B2RH54	195	209	EKIYGLIAKKQSNLF	13.69
3076	DRB1*11:01	B2RH54	194	208	PEKIYGLIAKKQSNL	17.89
3077	DRB1*11:01	B2RH54	163	177	PLKIKRVHARMAFTE	26.32
3078	DRB1*11:01	B2RH54	162	176	DPLKIKRVHARMAFT	27.34
3079	DRB1*11:01	B2RH54	193	207	VPEKIYGLIAKKQSN	27.53
3080	DRB1*11:01	B2RH54	197	211	IYGLIAKKQSNLFGA	28.64
3081	DRB1*11:01	B2RH54	161	175	NDPLKIKRVHARMAF	34.05
3082	DRB1*11:01	B2RH54	164	178	LKIKRVHARMAFTEI	34.08
3083	DRB1*11:01	B2RH54	172	186	RMAFTEIKVQMSAAY	35.85
3084	DRB1*11:01	B2RH54	192	206	FVPEKIYGLIAKKQS	42.80
3085	DRB1*11:01	B2RH54	171	185	ARMAFTEIKVQMSAA	44.66
3086	DRB1*11:01	B2RH58	258	272	EGRPEFVMMLKLKKT	8.89
3087	DRB1*11:01	B2RH58	259	273	GRPEFVMMLKLKKTG	9.36
3088	DRB1*11:01	B2RH58	260	274	RPEFVMMLKLKKTGT	9.39
3089	DRB1*11:01	B2RH58	261	275	PEFVMMLKLKKTGTD	10.44
3090	DRB1*11:01	B2RH58	257	271	NEGRPEFVMMLKLKK	11.52
3091	DRB1*11:01	B2RH58	262	276	EFVMMLKLKKTGTDD	12.54
3092	DRB1*11:01	B2RH58	656	670	VKNDRFVKSARLKK	23.55

3093	DRB1*11:01	B2RH58	263	277	FVMMLKLLKKTGTDDN	30.54
3094	DRB1*11:01	B2RH58	177	191	SIELKRVAAKLRLKK	40.98
3095	DRB1*11:01	B2RH58	175	189	LGSIELKRVAAKLRL	45.78
3096	DRB1*11:01	B2RH58	176	190	GSIELKRVAAKLRLK	45.96
3097	DRB1*11:01	B2RH58	178	192	IELKRVAAKLRLKPP	48.99
3098	DRB1*11:01	B2RH59	284	298	TRNHFYKMILKKAKA	12.67
3099	DRB1*11:01	B2RH59	285	299	RNHFYKMILKKAKAP	13.51
3100	DRB1*11:01	B2RH59	287	301	HFYKMILKKAKAPGR	15.15
3101	DRB1*11:01	B2RH59	286	300	NHFYKMILKKAKAPG	16.24
3102	DRB1*11:01	B2RH59	288	302	FYKMILKKAKAPGRP	18.61
3103	DRB1*11:01	B2RH59	283	297	ITRNHFYKMILKKAK	19.50
3104	DRB1*11:01	B2RH59	155	169	QIQLLRNMAKFSLSV	37.57
3105	DRB1*11:01	B2RH59	154	168	GQIQLLRNMAKFSL	38.33
3106	DRB1*11:01	B2RH59	153	167	LGQIQLLRNMAKFSL	38.45
3107	DRB1*11:01	B2RH59	156	170	IQLLRNMAKFSLSVT	38.49
3108	DRB1*11:01	B2RH59	503	517	KTLYKYVLTTMPQNK	41.30
3109	DRB1*11:01	B2RH59	152	166	NLGQIQLLRNMAKFS	44.67
3110	DRB1*11:01	B2RH59	431	445	EKYQYVFFKANTSSA	45.01
3111	DRB1*11:01	B2RH59	289	303	YKMILKKAKAPGRPT	45.42
3112	DRB1*11:01	B2RH59	432	446	KYQYVFFKANTSSAE	45.72
3113	DRB1*11:02	B2RH54	163	177	PLKIKRVHARMAFTE	11.10
3114	DRB1*11:02	B2RH54	162	176	DPLKIKRVHARMAFT	11.87
3115	DRB1*11:02	B2RH54	161	175	NDPLKIKRVHARMAF	13.88
3116	DRB1*11:02	B2RH54	164	178	LKIKRVHARMAFTEI	14.61
3117	DRB1*11:02	B2RH54	137	151	KTIVLKAGKNYIGYS	23.98
3118	DRB1*11:02	B2RH54	160	174	ENDPLKIKRVHARMA	24.77
3119	DRB1*11:02	B2RH54	165	179	KIKRVHARMAFTEIK	25.28
3120	DRB1*11:02	B2RH54	136	150	PKTIVLKAGKNYIGY	26.21
3121	DRB1*11:02	B2RH54	175	189	FTEIKVQMSAAYDNI	27.62
3122	DRB1*11:02	B2RH54	174	188	AFTEIKVQMSAAYDN	31.52
3123	DRB1*11:02	B2RH54	197	211	IYGLIAKKQSNLFGA	33.57
3124	DRB1*11:02	B2RH54	138	152	TIVLKAGKNYIGYSG	34.66
3125	DRB1*11:02	B2RH54	173	187	MAFTEIKVQMSAAYD	34.72
3126	DRB1*11:02	B2RH54	135	149	EPKTIVLKAGKNYIG	36.11
3127	DRB1*11:02	B2RH54	198	212	YGLIAKKQSNLFGAT	36.78
3128	DRB1*11:02	B2RH54	176	190	TEIKVQMSAAYDNIY	37.49
3129	DRB1*11:02	B2RH54	196	210	KIYGLIAKKQSNLFG	40.94
3130	DRB1*11:02	B2RH54	134	148	AEPKTIVLKAGKNYI	41.94
3131	DRB1*11:02	B2RH54	172	186	RMAFTEIKVQMSAAY	43.55
3132	DRB1*11:02	B2RH54	34	48	TISVVLKTSNSNRAF	49.00
3133	DRB1*11:02	B2RH57	198	212	TKVQILRNAKNSRLL	18.96
3134	DRB1*11:02	B2RH57	199	213	KVQILRNAKNSRLL	20.12
3135	DRB1*11:02	B2RH57	169	183	QANISLNRIA AKITL	24.07

3136	DRB1*11:02	B2RH57	200	214	VQILRNAKNSRLLEG	24.20
3137	DRB1*11:02	B2RH57	197	211	ITKVQILRNAKNSRL	25.65
3138	DRB1*11:02	B2RH57	192	206	SDVIKITKVQILRNA	27.67
3139	DRB1*11:02	B2RH57	167	181	TVQANISLNRIAANKI	30.00
3140	DRB1*11:02	B2RH57	168	182	VQANISLNRIAANKIT	30.17
3141	DRB1*11:02	B2RH57	63	77	GEDLIKKVRIFVFRE	30.28
3142	DRB1*11:02	B2RH57	170	184	ANISLNRIAANKITLD	30.33
3143	DRB1*11:02	B2RH57	414	428	NGIGIQRRTNLFFTV	30.35
3144	DRB1*11:02	B2RH57	191	205	GSDVIKITKVQILRN	31.19
3145	DRB1*11:02	B2RH57	193	207	DVIKITKVQILRNAK	31.39
3146	DRB1*11:02	B2RH57	62	76	SGEDLIKKVRIFVFR	31.50
3147	DRB1*11:02	B2RH57	237	251	SAQSIIQASAPLYVY	32.06
3148	DRB1*11:02	B2RH57	238	252	AQSIIQASAPLYVYE	32.07
3149	DRB1*11:02	B2RH57	64	78	EDLIKKVRIFVVFREG	33.29
3150	DRB1*11:02	B2RH57	239	253	QSIIQASAPLYVYEN	34.38
3151	DRB1*11:02	B2RH57	293	307	HHYSIRRNHHYKLDG	34.84
3152	DRB1*11:02	B2RH57	294	308	HYSIRRNHHYKLDGT	35.11
3153	DRB1*11:02	B2RH57	413	427	PNGIGIQRRTNLFFT	35.50
3154	DRB1*11:02	B2RH57	292	306	NHHYSIRRNHHYKLD	35.61
3155	DRB1*11:02	B2RH57	166	180	GTVQANISLNRIAANK	35.62
3156	DRB1*11:02	B2RH57	190	204	PGSDVIKITKVQILR	36.00
3157	DRB1*11:02	B2RH57	171	185	NISLNRIAANKITLDI	37.93
3158	DRB1*11:02	B2RH57	194	208	VIKITKVQILRNAKN	38.83
3159	DRB1*11:02	B2RH57	415	429	GIGIQRRTNLFFTV	39.31
3160	DRB1*11:02	B2RH57	295	309	YSIRRNHHYKLDGTI	40.41
3161	DRB1*11:02	B2RH57	201	215	QILRNAKNSRLLEGT	40.56
3162	DRB1*11:02	B2RH57	412	426	KPNGIGIQRRTNLFF	41.29
3163	DRB1*11:02	B2RH57	172	186	ISLNRIAANKITLDIK	43.49
3164	DRB1*11:02	B2RH57	65	79	DLIKKVRIFVFREGL	44.10
3165	DRB1*11:02	B2RH57	196	210	KITKVQILRNAKNSR	44.21
3166	DRB1*11:02	B2RH57	291	305	ANHHYSIRRNHHYKL	44.90
3167	DRB1*11:02	B2RH57	165	179	QGTVQANISLNRIAA	45.10
3168	DRB1*11:02	B2RH58	177	191	SIELKRVAAKLRLKK	12.16
3169	DRB1*11:02	B2RH58	178	192	IELKRVAAKLRLKKP	13.95
3170	DRB1*11:02	B2RH58	176	190	GSIELKRVAAKLRLK	15.10
3171	DRB1*11:02	B2RH58	175	189	LGSIELKRVAAKLRL	16.97
3172	DRB1*11:02	B2RH58	179	193	ELKRVAAKLRLKKPV	18.06
3173	DRB1*11:02	B2RH58	180	194	LKRVAAKLRLKKPVL	19.57
3174	DRB1*11:02	B2RH58	438	452	KKIKIRQNPSQFIIN	21.41
3175	DRB1*11:02	B2RH58	437	451	EKKIKIRQNPSQFII	21.95
3176	DRB1*11:02	B2RH58	439	453	KIKIRQNPSQFIINT	25.30
3177	DRB1*11:02	B2RH58	182	196	RVAAKLRLKKPVLNI	25.62
3178	DRB1*11:02	B2RH58	408	422	TKKIKVRSILPINNI	25.62

3179	DRB1*11:02	B2RH58	181	195	KRVAAKLRLKKPVLN	26.27
3180	DRB1*11:02	B2RH58	409	423	KKIKVRSILPINNIP	29.13
3181	DRB1*11:02	B2RH58	174	188	QLGSIELKRVAAKLR	29.36
3182	DRB1*11:02	B2RH58	597	611	RAEIQLVDKLQREQA	30.34
3183	DRB1*11:02	B2RH58	407	421	NTKKIKVRSILPINN	31.11
3184	DRB1*11:02	B2RH58	183	197	VAAKLRLKKPVLNIS	32.53
3185	DRB1*11:02	B2RH58	595	609	PTRAIEQLVDKLQRE	33.05
3186	DRB1*11:02	B2RH58	596	610	TRAIEQLVDKLQREQ	33.43
3187	DRB1*11:02	B2RH58	656	670	VKNDRFVKSARLKK	33.70
3188	DRB1*11:02	B2RH58	406	420	ANTKKIKVRSILPIN	33.96
3189	DRB1*11:02	B2RH58	410	424	KIKVRSILPINNIPK	34.17
3190	DRB1*11:02	B2RH58	598	612	AEIQLVDKLQREQAG	37.02
3191	DRB1*11:02	B2RH58	555	569	LRLIYHSNQONRYAL	38.59
3192	DRB1*11:02	B2RH58	436	450	FEKKIKIRQNPSQFI	39.92
3193	DRB1*11:02	B2RH58	260	274	RPEFVMMLKLKKTGT	41.36
3194	DRB1*11:02	B2RH58	413	427	VRSILPINNIPKDIS	42.12
3195	DRB1*11:02	B2RH58	594	608	LPTRAIEQLVDKLQR	42.47
3196	DRB1*11:02	B2RH58	412	426	KVRSILPINNIPKDI	43.77
3197	DRB1*11:02	B2RH58	599	613	EIQLVDKLQREQAGV	43.80
3198	DRB1*11:02	B2RH58	259	273	GRPEFVMMLKLKKTG	44.68
3199	DRB1*11:02	B2RH58	184	198	AAKLRLKKPVLNISD	45.59
3200	DRB1*11:02	B2RH58	554	568	PLRLIYHSNQONRYA	45.67
3201	DRB1*11:02	B2RH58	405	419	DANTKKIKVRSILPI	47.61
3202	DRB1*11:02	B2RH58	430	444	IKNSIGFEKKIKIRQ	48.19
3203	DRB1*11:02	B2RH58	258	272	EGRPEFVMMLKLKKT	48.74
3204	DRB1*11:02	B2RH58	411	425	IKVRSILPINNIPKD	49.06
3205	DRB1*11:02	B2RH59	133	147	LETIRMWARISYPSI	15.51
3206	DRB1*11:02	B2RH59	155	169	QIQLLRNMAKFSLSV	15.91
3207	DRB1*11:02	B2RH59	154	168	GQIQLLRNMAKFSLS	16.43
3208	DRB1*11:02	B2RH59	134	148	ETIRMWARISYPSIA	16.63
3209	DRB1*11:02	B2RH59	135	149	TIRMWARISYPSIAP	17.19
3210	DRB1*11:02	B2RH59	132	146	DLETIRMWARISYPS	18.28
3211	DRB1*11:02	B2RH59	153	167	LGQIQLLRNMAKFSL	18.49
3212	DRB1*11:02	B2RH59	156	170	IQLLRNMAKFSLSVT	18.68
3213	DRB1*11:02	B2RH59	131	145	DDLETIRMWARISYP	20.16
3214	DRB1*11:02	B2RH59	130	144	ADDLETIRMWARISY	23.64
3215	DRB1*11:02	B2RH59	157	171	QLLRNMAKFSLSVTP	25.65
3216	DRB1*11:02	B2RH59	152	166	NLGQIQLLRNMAKFS	25.93
3217	DRB1*11:02	B2RH59	151	165	QNLGQIQLLRNMAKF	35.91
3218	DRB1*11:02	B2RH59	287	301	HFYKMILKKAKAPGR	36.10
3219	DRB1*11:02	B2RH59	288	302	FYKMILKKAKAPGRP	37.43
3220	DRB1*11:02	B2RH59	278	292	KVRYNITRNHFYKMI	38.50
3221	DRB1*11:02	B2RH59	277	291	NKVRYNITRNHFYKM	39.98

3222	DRB1*11:02	B2RH59	249	263	GITCLILKARYNLPN	42.37
3223	DRB1*11:02	B2RH59	248	262	AGITCLILKARYNLP	42.51
3224	DRB1*11:02	B2RH59	289	303	YKMILKKAKAPGRPT	44.40
3225	DRB1*11:02	B2RH59	276	290	TNKVRYNITRNHFYK	44.44
3226	DRB1*11:02	B2RH59	250	264	ITCLILKARYNLPNA	46.14
3227	DRB1*11:02	B2RH59	280	294	RYNITRNHFYKMILK	47.34
3228	DRB1*11:02	B2RH59	279	293	VRYNITRNHFYKMIL	47.66
3229	DRB1*11:02	B2RH59	290	304	KMILKKAKAPGRPTL	49.49
3230	DRB1*11:02	B2RH59	423	437	RSVTVLVREKYQYVF	49.77
3231	DRB1*11:02	B2RHG4	183	197	KVELNISLSEKFQIV	38.96
3232	DRB1*11:02	B2RHG4	185	199	ELNISLSEKFQIVPI	44.58
3233	DRB1*11:02	B2RHG4	168	182	ANRLLDNVPLVRAIA	46.80
3234	DRB1*11:02	B2RHG4	186	200	LNISLSEKFQIVPII	49.23
3235	DRB1*11:02	B2RHG4	169	183	NRLLDNVPLVRAIAK	49.76
3236	DRB1*11:03	A0PA81	158	172	QTVDIYRRTAQVHII	46.02
3237	DRB1*11:03	B2RH54	162	176	DPLKIKRVHARMAFT	10.23
3238	DRB1*11:03	B2RH54	163	177	PLKIKRVHARMAFTE	10.36
3239	DRB1*11:03	B2RH54	161	175	NDPLKIKRVHARMAF	11.56
3240	DRB1*11:03	B2RH54	164	178	LKIKRVHARMAFTEI	13.59
3241	DRB1*11:03	B2RH54	160	174	ENDPLKIKRVHARMA	19.44
3242	DRB1*11:03	B2RH54	165	179	KIKRVHARMAFTEIK	22.80
3243	DRB1*11:03	B2RH54	137	151	KTIVLKAGKNYIGYS	26.11
3244	DRB1*11:03	B2RH54	136	150	PKTIVLKAGKNYIGY	27.21
3245	DRB1*11:03	B2RH54	135	149	EPKTIVLKAGKNYIG	36.04
3246	DRB1*11:03	B2RH54	138	152	TIVLKAGKNYIGYSG	38.21
3247	DRB1*11:03	B2RH54	159	173	IENDPLKIKRVHARM	38.30
3248	DRB1*11:03	B2RH54	195	209	EKIYGLIAKKQSNLF	38.51
3249	DRB1*11:03	B2RH54	196	210	KIYGLIAKKQSNLFG	39.05
3250	DRB1*11:03	B2RH54	134	148	AEPKTIVLKAGKNYI	45.77
3251	DRB1*11:03	B2RH54	197	211	IYGLIAKKQSNLFGA	46.68
3252	DRB1*11:03	B2RH57	198	212	TKVQILRNAKNSRLL	18.92
3253	DRB1*11:03	B2RH57	199	213	KVQILRNAKNSRLLE	20.71
3254	DRB1*11:03	B2RH57	197	211	ITKVQILRNAKNSRL	22.80
3255	DRB1*11:03	B2RH57	200	214	VQILRNAKNSRLLEG	27.23
3256	DRB1*11:03	B2RH57	169	183	QANISLNRIA AKITL	32.02
3257	DRB1*11:03	B2RH57	168	182	VQANISLNRIA AKIT	35.13
3258	DRB1*11:03	B2RH57	196	210	KITKVQILRNAKNSR	36.06
3259	DRB1*11:03	B2RH57	167	181	TVQANISLNRIA AKI	37.01
3260	DRB1*11:03	B2RH57	170	184	ANISLNRIA AKITLD	42.12
3261	DRB1*11:03	B2RH57	193	207	DVIKITKVQILRNAK	43.45
3262	DRB1*11:03	B2RH57	292	306	NHHYSIRRNNHHYKLD	43.65
3263	DRB1*11:03	B2RH57	361	375	SLSFTVRIKGRDGSR	43.68
3264	DRB1*11:03	B2RH57	269	283	VEALYNGIKTRYAY	44.36

3265	DRB1*11:03	B2RH57	192	206	SDVIKITKVQILRNA	45.00
3266	DRB1*11:03	B2RH57	166	180	GTVQANISLNRIAAK	45.33
3267	DRB1*11:03	B2RH57	194	208	VIKITKVQILRNAKN	45.34
3268	DRB1*11:03	B2RH57	293	307	HHYSIRRNHHYKLDG	45.68
3269	DRB1*11:03	B2RH57	413	427	PNGIGIQRRTNLFFT	47.05
3270	DRB1*11:03	B2RH57	360	374	NSLSFTVRIKGRDGS	47.77
3271	DRB1*11:03	B2RH57	412	426	KPNGIGIQRRTNLFF	48.00
3272	DRB1*11:03	B2RH57	414	428	NGIGIQRRTNLFFTV	48.37
3273	DRB1*11:03	B2RH57	270	284	EALYNGIKTRYAYV	48.61
3274	DRB1*11:03	B2RH57	358	372	FENSLSFTVRIKGRD	48.63
3275	DRB1*11:03	B2RH57	359	373	ENSLSFTVRIKGRDG	48.81
3276	DRB1*11:03	B2RH57	63	77	GEDLIKKVRIFVFRE	48.95
3277	DRB1*11:03	B2RH57	362	376	LSFTVRIKGRDGSRW	49.68
3278	DRB1*11:03	B2RH58	177	191	SIELKRVAAKLRLKK	11.99
3279	DRB1*11:03	B2RH58	180	194	LKRVAAKLRLKKPVL	12.33
3280	DRB1*11:03	B2RH58	178	192	IELKRVAAKLRLKKP	12.58
3281	DRB1*11:03	B2RH58	179	193	ELKRVAAKLRLKKPV	12.74
3282	DRB1*11:03	B2RH58	181	195	KRVAAKLRLKKPVLN	15.29
3283	DRB1*11:03	B2RH58	176	190	GSIELKRVAAKLRLK	15.94
3284	DRB1*11:03	B2RH58	260	274	RPEFVMMLKLKKTGT	16.50
3285	DRB1*11:03	B2RH58	182	196	RVAAKLRLKKPVLNI	16.64
3286	DRB1*11:03	B2RH58	175	189	LGSIELKRVAAKLRL	17.08
3287	DRB1*11:03	B2RH58	261	275	PEFVMMLKLKKTGTD	18.70
3288	DRB1*11:03	B2RH58	656	670	VKNDRFVKSARLKK	19.32
3289	DRB1*11:03	B2RH58	259	273	GRPEFVMMLKLKKTG	19.98
3290	DRB1*11:03	B2RH58	262	276	EFVMMLKLKKTGTDD	23.06
3291	DRB1*11:03	B2RH58	174	188	QLGSIELKRVAAKLR	23.83
3292	DRB1*11:03	B2RH58	183	197	VAAKLRLKKPVLNIS	24.66
3293	DRB1*11:03	B2RH58	258	272	EGRPEFVMMLKLKKT	26.34
3294	DRB1*11:03	B2RH58	263	277	FVMMLKLKKTGTDDN	27.93
3295	DRB1*11:03	B2RH58	597	611	RAEIQLVDKLQREQA	28.80
3296	DRB1*11:03	B2RH58	596	610	TRAEIQLVDKLQREQ	35.04
3297	DRB1*11:03	B2RH58	431	445	KNSIGFEKKIKIRQN	37.51
3298	DRB1*11:03	B2RH58	598	612	AEIQLVDKLQREQAG	37.58
3299	DRB1*11:03	B2RH58	184	198	AAKLRLKKPVLNISD	37.74
3300	DRB1*11:03	B2RH58	408	422	TKKIKVRSILPINNI	38.23
3301	DRB1*11:03	B2RH58	430	444	IKNSIGFEKKIKIRQ	38.91
3302	DRB1*11:03	B2RH58	595	609	PTRAETIQLVDKLQRE	38.92
3303	DRB1*11:03	B2RH58	173	187	KQLGSIELKRVAAKL	40.61
3304	DRB1*11:03	B2RH58	437	451	EKKIKIRQNPSQFII	40.79
3305	DRB1*11:03	B2RH58	438	452	KKIKIRQNPSQFIIN	41.39
3306	DRB1*11:03	B2RH58	257	271	NEGRPEFVMMLKLKK	41.75
3307	DRB1*11:03	B2RH58	407	421	NTKKIKVRSILPINN	42.27

3308	DRB1*11:03	B2RH58	599	613	EIQLVDKLQREQAGV	43.35
3309	DRB1*11:03	B2RH58	406	420	ANTKKIKVRSILPIN	43.76
3310	DRB1*11:03	B2RH58	429	443	TIKNSIGFEKKIKIR	46.23
3311	DRB1*11:03	B2RH58	409	423	KKIKVRSILPINNIP	46.55
3312	DRB1*11:03	B2RH59	287	301	HFYKMILKKAKAPGR	15.67
3313	DRB1*11:03	B2RH59	288	302	FYKMILKKAKAPGRP	16.97
3314	DRB1*11:03	B2RH59	133	147	LETIRMWARISYPSI	18.63
3315	DRB1*11:03	B2RH59	154	168	GQIQLLRNMAKFSL	18.98
3316	DRB1*11:03	B2RH59	134	148	ETIRMWARISYPSIA	19.52
3317	DRB1*11:03	B2RH59	155	169	QIQLLRNMAKFSLSV	19.77
3318	DRB1*11:03	B2RH59	289	303	YKMILKKAKAPGRPT	20.16
3319	DRB1*11:03	B2RH59	132	146	DLETIRMWARISYPS	20.24
3320	DRB1*11:03	B2RH59	286	300	NHFKYKMILKKAKAPG	21.13
3321	DRB1*11:03	B2RH59	131	145	DDLETIRMWARISYP	22.96
3322	DRB1*11:03	B2RH59	153	167	LGQIQLLRNMAKFSL	23.46
3323	DRB1*11:03	B2RH59	135	149	TIRMWARISYPSIAP	24.08
3324	DRB1*11:03	B2RH59	156	170	IQLLRNMAKFSLSVT	24.20
3325	DRB1*11:03	B2RH59	290	304	KMILKKAKAPGRPTL	26.93
3326	DRB1*11:03	B2RH59	285	299	RNHFKYKMILKKAKAP	27.12
3327	DRB1*11:03	B2RH59	284	298	TRNHFKYKMILKKAKA	28.93
3328	DRB1*11:03	B2RH59	152	166	NLGQIQLLRNMAKFS	29.19
3329	DRB1*11:03	B2RH59	157	171	QLLRNMAKFSLSVTP	30.62
3330	DRB1*11:03	B2RH59	130	144	ADDLETIRMWARISY	32.80
3331	DRB1*11:03	B2RH59	283	297	ITRNHFKYKMILKKAK	36.46
3332	DRB1*11:03	B2RH59	277	291	NKVRYNITRNHFKYKM	37.94
3333	DRB1*11:03	B2RH59	278	292	KVRYNITRNHFKYKMI	39.23
3334	DRB1*11:03	B2RH59	151	165	QNLGQIQLLRNMAKF	39.95
3335	DRB1*11:03	B2RH59	276	290	TNKVRYNITRNHFKYK	41.61
3336	DRB1*11:03	B2RH59	291	305	MILKKAKAPGRPTLQ	43.46
3337	DRB1*11:03	B2RH59	249	263	GITCLILKARYNLPN	43.66
3338	DRB1*11:03	B2RH59	250	264	ITCLILKARYNLPNA	44.32
3339	DRB1*11:03	B2RH59	422	436	KRSVTVLVREKYQYV	44.53
3340	DRB1*11:03	B2RH59	248	262	AGITCLILKARYNLP	49.53
3341	DRB1*11:04	A0PA81	166	180	TAQVHIIIRGYQEWL	16.07
3342	DRB1*11:04	A0PA81	165	179	RTAQVHIIIRGYQEW	16.46
3343	DRB1*11:04	A0PA81	167	181	AQVHIIIRGYQEWLE	17.83
3344	DRB1*11:04	A0PA81	164	178	RRTAQVHIIIRGYQE	18.89
3345	DRB1*11:04	A0PA81	163	177	YRRTAQVHIIIRGYQ	25.80
3346	DRB1*11:04	A0PA81	168	182	QVHIIIRGYQEWLEA	27.49
3347	DRB1*11:04	A0PA81	224	238	NGDFISPIIRVYPTL	29.89
3348	DRB1*11:04	A0PA81	225	239	GDFISPIIRVYPTLD	33.54
3349	DRB1*11:04	A0PA81	223	237	QNGDFISPIIRVYPT	45.43
3350	DRB1*11:04	A0PA81	226	240	DFISPIIRVYPTLDT	47.06

3351	DRB1*11:04	B2RH54	162	176	DPLKIKRVHARMAFT	12.37
3352	DRB1*11:04	B2RH54	163	177	PLKIKRVHARMAFTE	12.77
3353	DRB1*11:04	B2RH54	161	175	NDPLKIKRVHARMAF	13.90
3354	DRB1*11:04	B2RH54	164	178	LKIKRVHARMAFTEI	15.51
3355	DRB1*11:04	B2RH54	195	209	EKIYGLIAKKQSNLF	21.59
3356	DRB1*11:04	B2RH54	196	210	KIYGLIAKKQSNLFG	23.42
3357	DRB1*11:04	B2RH54	160	174	ENDPLKIKRVHARMA	26.29
3358	DRB1*11:04	B2RH54	194	208	PEKIYGLIAKKQSNL	26.38
3359	DRB1*11:04	B2RH54	165	179	KIKRVHARMAFTEIK	26.61
3360	DRB1*11:04	B2RH54	100	114	TGAMELVGKTLAEVK	27.87
3361	DRB1*11:04	B2RH54	101	115	GAMELVGKTLAEVKA	33.03
3362	DRB1*11:04	B2RH54	137	151	KTIVLKAGKNYIGYS	37.73
3363	DRB1*11:04	B2RH54	136	150	PKTIVLKAGKNYIGY	39.41
3364	DRB1*11:04	B2RH54	193	207	VPEKIYGLIAKKQSN	40.69
3365	DRB1*11:04	B2RH54	99	113	NTGAMELVGKTLAEV	43.12
3366	DRB1*11:04	B2RH54	32	46	NATISVVLKTSNSNR	44.08
3367	DRB1*11:04	B2RH54	33	47	ATISVVLKTSNSNRA	45.18
3368	DRB1*11:04	B2RH54	197	211	IYGLIAKKQSNLFGA	47.42
3369	DRB1*11:04	B2RH57	357	371	TFENSLSFTVRIKGR	23.41
3370	DRB1*11:04	B2RH57	197	211	ITKVQILRNAKNSRL	25.16
3371	DRB1*11:04	B2RH57	358	372	FENSLSFTVRIKGRD	25.68
3372	DRB1*11:04	B2RH57	360	374	NSLSFTVRIKGRDGS	26.51
3373	DRB1*11:04	B2RH57	193	207	DVIKITKVQILRNAK	27.20
3374	DRB1*11:04	B2RH57	359	373	ENSLSFTVRIKGRDG	27.32
3375	DRB1*11:04	B2RH57	198	212	TKVQILRNAKNSRLL	28.19
3376	DRB1*11:04	B2RH57	192	206	SDVIKITKVQILRNA	28.23
3377	DRB1*11:04	B2RH57	194	208	VIKITKVQILRNAKN	28.35
3378	DRB1*11:04	B2RH57	196	210	KITKVQILRNAKNSR	28.50
3379	DRB1*11:04	B2RH57	195	209	IKITKVQILRNAKNS	30.73
3380	DRB1*11:04	B2RH57	361	375	SLSFTVRIKGRDGSR	31.29
3381	DRB1*11:04	B2RH57	168	182	VQANISLNRIAAKIT	31.66
3382	DRB1*11:04	B2RH57	169	183	QANISLNRIAAKITL	31.74
3383	DRB1*11:04	B2RH57	191	205	GSDVIKITKVQILRN	32.50
3384	DRB1*11:04	B2RH57	167	181	TVQANISLNRIAAKI	33.10
3385	DRB1*11:04	B2RH57	199	213	KVQILRNAKNSRLL	36.75
3386	DRB1*11:04	B2RH57	400	414	GTTVYTIKVKALKPN	39.23
3387	DRB1*11:04	B2RH57	190	204	PGSDVIKITKVQILR	39.94
3388	DRB1*11:04	B2RH57	166	180	GTVQANISLNRIAIAK	42.69
3389	DRB1*11:04	B2RH57	170	184	ANISLNRIAIAKITLD	46.01
3390	DRB1*11:04	B2RH57	398	412	ADGTTVYTIKVKALK	47.90
3391	DRB1*11:04	B2RH57	401	415	TTVYTIKVKALKPNG	48.85
3392	DRB1*11:04	B2RH57	399	413	DGTTVYTIKVKALKP	48.99
3393	DRB1*11:04	B2RH58	260	274	RPEFVMMLKLKKTGT	9.57

3394	DRB1*11:04	B2RH58	261	275	PEFVMMLKLKKTGTD	10.41
3395	DRB1*11:04	B2RH58	259	273	GRPEFVMMLKLKKTG	10.54
3396	DRB1*11:04	B2RH58	258	272	EGRPEFVMMLKLKKT	11.46
3397	DRB1*11:04	B2RH58	262	276	EFVMMLKLKKTGTDD	12.56
3398	DRB1*11:04	B2RH58	257	271	NEGRPEFVMMLKLKK	16.52
3399	DRB1*11:04	B2RH58	177	191	SIELKRVAAKLRLKK	17.59
3400	DRB1*11:04	B2RH58	178	192	IELKRVAAKLRLKKP	18.70
3401	DRB1*11:04	B2RH58	175	189	LGSIELKRVAAKLRL	19.37
3402	DRB1*11:04	B2RH58	179	193	ELKRVAAKLRLKKPV	19.62
3403	DRB1*11:04	B2RH58	180	194	LKRVAAKLRLKKPVL	19.91
3404	DRB1*11:04	B2RH58	263	277	FVMMLKLKKTGTDDN	20.05
3405	DRB1*11:04	B2RH58	176	190	GSIELKRVAAKLRLK	20.38
3406	DRB1*11:04	B2RH58	174	188	QLGSIELKRVAAKLR	22.18
3407	DRB1*11:04	B2RH58	656	670	VKNDRFVKSARKLKK	25.71
3408	DRB1*11:04	B2RH58	181	195	KRVAAKLRLKKPVLN	26.55
3409	DRB1*11:04	B2RH58	597	611	RAEIQLVDKLQREQA	26.69
3410	DRB1*11:04	B2RH58	182	196	RVAAKLRLKKPVLNI	27.28
3411	DRB1*11:04	B2RH58	552	566	LNPLRLIYHSNQQR	28.81
3412	DRB1*11:04	B2RH58	596	610	TRAEIQLVDKLQREQ	32.40
3413	DRB1*11:04	B2RH58	183	197	VAAKLRLKKPVLNIS	32.72
3414	DRB1*11:04	B2RH58	630	644	KAIKILLPTASGNAT	33.24
3415	DRB1*11:04	B2RH58	173	187	KQLGSIELKRVAAKL	33.63
3416	DRB1*11:04	B2RH58	598	612	AEIQLVDKLQREQAG	34.65
3417	DRB1*11:04	B2RH58	595	609	PTRAETIQLVDKLQRE	35.29
3418	DRB1*11:04	B2RH58	629	643	DKAIKILLPTASGNA	37.92
3419	DRB1*11:04	B2RH58	551	565	TLNPLRLIYHSNQQN	38.27
3420	DRB1*11:04	B2RH58	599	613	EIQLVDKLQREQAGV	39.72
3421	DRB1*11:04	B2RH58	550	564	YTLNPLRLIYHSNQQ	39.89
3422	DRB1*11:04	B2RH58	410	424	KIKVRSILPINNIPK	42.52
3423	DRB1*11:04	B2RH58	553	567	NPLRLIYHSNQQNRY	42.62
3424	DRB1*11:04	B2RH58	431	445	KNSIGFEKKIKIRQN	43.05
3425	DRB1*11:04	B2RH58	184	198	AAKLRLKKPVLNISR	44.36
3426	DRB1*11:04	B2RH58	408	422	TKKIKVRSILPINNI	45.16
3427	DRB1*11:04	B2RH58	430	444	IKNSIGFEKKIKIRQ	47.61
3428	DRB1*11:04	B2RH58	628	642	PDKAIKILLPTASGN	48.01
3429	DRB1*11:04	B2RH58	409	423	KKIKVRSILPINNIP	49.73
3430	DRB1*11:04	B2RH59	287	301	HFYKMILKKAKAPGR	13.89
3431	DRB1*11:04	B2RH59	154	168	GQIQLLRNMAKFSLS	14.39
3432	DRB1*11:04	B2RH59	155	169	QIQLLRNMAKFSLSV	14.46
3433	DRB1*11:04	B2RH59	156	170	IQLLRNMAKFSLSVT	15.18
3434	DRB1*11:04	B2RH59	153	167	LGQIQLLRNMAKFSL	15.70
3435	DRB1*11:04	B2RH59	288	302	FYKMILKKAKAPGRP	16.13
3436	DRB1*11:04	B2RH59	286	300	NHFYKMILKKAKAPG	16.56

3437	DRB1*11:04	B2RH59	285	299	RNHFYKMILKKAKAP	17.73
3438	DRB1*11:04	B2RH59	284	298	TRNHFYKMILKKAKA	18.04
3439	DRB1*11:04	B2RH59	152	166	NLGQIQLLRNMAKFS	18.06
3440	DRB1*11:04	B2RH59	157	171	QLLRNMAKFSLSVTP	20.51
3441	DRB1*11:04	B2RH59	151	165	QNLGQIQLLRNMAKF	22.60
3442	DRB1*11:04	B2RH59	289	303	YKMILKKAKAPGRPT	24.04
3443	DRB1*11:04	B2RH59	133	147	LETIRMWARISYPSI	24.90
3444	DRB1*11:04	B2RH59	283	297	ITRNHFYKMILKKAK	28.71
3445	DRB1*11:04	B2RH59	134	148	ETIRMWARISYPSIA	29.81
3446	DRB1*11:04	B2RH59	132	146	DLETIRMWARISYPS	29.94
3447	DRB1*11:04	B2RH59	131	145	DDLETIRMWARISYP	35.41
3448	DRB1*11:04	B2RH59	150	164	NQNLGQIQLLRNMAK	36.78
3449	DRB1*11:04	B2RH59	158	172	LLRNMAKFSLSVTPP	38.82
3450	DRB1*11:04	B2RH59	135	149	TIRMWARISYPSIAP	40.19
3451	DRB1*11:04	B2RH59	249	263	GITCLILKARYNLPN	40.74
3452	DRB1*11:04	B2RH59	248	262	AGITCLILKARYNLP	41.19
3453	DRB1*11:04	B2RH59	290	304	KMILKKAKAPGRPTL	43.05
3454	DRB1*11:04	B2RH59	422	436	KRSVTVLVREKYQYV	46.29
3455	DRB1*11:04	B2RH59	250	264	ITCLILKARYNLPNA	48.34
3456	DRB1*11:04	B2RH59	247	261	GAGITCLILKARYNL	49.68
3457	DRB1*11:04	B2RHG4	135	149	SDLQTVKRTTAMPWS	39.64
3458	DRB1*11:04	B2RHG4	134	148	ESDLQTVKRTTAMPW	40.47
3459	DRB1*11:04	B2RHG4	174	188	NVPLVRAIAKVELNI	45.05
3460	DRB1*11:04	B2RHG4	170	184	RLLDNVPLVRAIAKV	46.07
3461	DRB1*11:04	B2RHG4	175	189	VPLVRAIAKVELNIS	48.20
3462	DRB1*11:04	B2RHG4	173	187	DNVPLVRAIAKVELN	48.57
3463	DRB1*11:04	B2RHG4	192	206	EKFQIVPIIVNGSLS	49.12
3464	DRB1*11:04	B2RHG4	193	207	KFQIVPIIVNGSLSE	49.82
3465	DRB1*11:06	B2RH54	162	176	DPLKIKRVHARMAFT	42.42
3466	DRB1*11:06	B2RH54	161	175	NDPLKIKRVHARMAF	47.13
3467	DRB1*11:06	B2RH54	163	177	PLKIKRVHARMAFTE	48.32
3468	DRB1*11:06	B2RH58	260	274	RPEFVMMLKLKKTGT	44.13
3469	DRB1*11:06	B2RH58	261	275	PEFVMMLKLKKTGTD	48.47
3470	DRB1*11:06	B2RH58	259	273	GRPEFVMMLKLKKTG	49.60
3471	DRB1*11:08	A0PA81	33	47	RPFRLTVRAWDADMQ	41.49
3472	DRB1*11:08	A0PA81	32	46	PRPFRLTVRAWDADM	46.47
3473	DRB1*11:08	A0PA81	30	44	DCPRPFRLTVRAWDA	47.13
3474	DRB1*11:08	B2RH54	195	209	EKIYGLIAKKQSNLF	38.16
3475	DRB1*11:08	B2RH54	163	177	PLKIKRVHARMAFTE	42.02
3476	DRB1*11:08	B2RH54	196	210	KIYGLIAKKQSNLFG	43.10
3477	DRB1*11:08	B2RH54	162	176	DPLKIKRVHARMAFT	44.49
3478	DRB1*11:08	B2RH57	169	183	QANISLNRIA AKITL	45.25
3479	DRB1*11:08	B2RH57	168	182	VQANISLNRIA AKIT	48.55

3480	DRB1*11:08	B2RH58	258	272	EGRPEFVMMLKLKKT	18.17
3481	DRB1*11:08	B2RH58	259	273	GRPEFVMMLKLKKTG	19.84
3482	DRB1*11:08	B2RH58	260	274	RPEFVMMLKLKKTGT	20.03
3483	DRB1*11:08	B2RH58	257	271	NEGRPEFVMMLKLKK	23.21
3484	DRB1*11:08	B2RH58	261	275	PEFVMMLKLKKTGTD	23.29
3485	DRB1*11:08	B2RH58	262	276	EFVMMLKLKKTGTDD	27.95
3486	DRB1*11:08	B2RH58	546	560	HWEYYTLNPLRLIYH	33.41
3487	DRB1*11:08	B2RH58	547	561	WEYYTLNPLRLIYHS	37.76
3488	DRB1*11:08	B2RH58	545	559	DHWEYYTLNPLRLIY	39.24
3489	DRB1*11:08	B2RH58	438	452	KKIKIRQNPSQFIIN	41.51
3490	DRB1*11:08	B2RH58	439	453	KIKIRQNPSQFIINT	41.54
3491	DRB1*11:08	B2RH58	437	451	EKKIKIRQNPSQFII	47.25
3492	DRB1*11:08	B2RH58	548	562	EYYTLNPLRLIYHSN	48.56
3493	DRB1*11:08	B2RH59	284	298	TRNHFYKMILKKAKA	33.06
3494	DRB1*11:08	B2RH59	162	176	MAKFSLSVTPPAESK	33.34
3495	DRB1*11:08	B2RH59	285	299	RNHFYKMILKKAKAP	34.37
3496	DRB1*11:08	B2RH59	287	301	HFYKMILKKAKAPGR	39.74
3497	DRB1*11:08	B2RH59	155	169	QIQLLRNMAKFSLSV	40.86
3498	DRB1*11:08	B2RH59	286	300	NHFYKMILKKAKAPG	41.13
3499	DRB1*11:08	B2RH59	154	168	GQIQLLRNMAKFSLS	42.97
3500	DRB1*11:08	B2RH59	153	167	LGQIQLLRNMAKFSL	46.55
3501	DRB1*11:08	B2RH59	520	534	QFRFKSNKVNSAENI	46.76
3502	DRB1*11:08	B2RH59	156	170	IQLLRNMAKFSLSVT	46.82
3503	DRB1*11:08	B2RH59	283	297	ITRNHFYKMILKKAK	47.66
3504	DRB1*11:08	B2RH59	503	517	KTLYKYVLTTMPQNK	48.42
3505	DRB1*11:08	B2RH59	161	175	NMAKFSLSVTPPAES	49.85
3506	DRB1*11:08	B2RH59	163	177	AKFSLSVTPPAESKL	49.88
3507	DRB1*11:08	B2RHG4	113	127	KVYVVANVDNAVKTA	40.25
3508	DRB1*11:08	B2RHG4	112	126	RKVYVVANVDNAVKT	41.26
3509	DRB1*11:08	B2RHG4	111	125	ERKVYVVANVDNAVK	49.08
3510	DRB1*11:10	A0PA81	33	47	RPFRLTVRAWDADMQ	30.44
3511	DRB1*11:10	A0PA81	30	44	DCPRPFRLTVRAWDA	34.41
3512	DRB1*11:10	A0PA81	32	46	PRPFRLTVRAWDADM	35.97
3513	DRB1*11:10	A0PA81	166	180	TAQVHIIIRGYQEWL	41.46
3514	DRB1*11:10	A0PA81	31	45	CPRPFRLTVRAWDAD	44.40
3515	DRB1*11:10	A0PA81	165	179	RTAQVHIIIRGYQEW	48.52
3516	DRB1*11:10	A0PA81	167	181	AQVHIIIRGYQEWLE	49.34
3517	DRB1*11:10	B2RH54	196	210	KIYGLIAKKQSNLFG	12.76
3518	DRB1*11:10	B2RH54	195	209	EKIYGLIAKKQSNLF	13.69
3519	DRB1*11:10	B2RH54	194	208	PEKIYGLIAKKQSNL	17.89
3520	DRB1*11:10	B2RH54	163	177	PLKIKRVHARMAFTE	26.32
3521	DRB1*11:10	B2RH54	162	176	DPLKIKRVHARMAFT	27.34
3522	DRB1*11:10	B2RH54	193	207	VPEKIYGLIAKKQSN	27.53

3523	DRB1*11:10	B2RH54	197	211	IYGLIAKKQSNLFGA	28.64
3524	DRB1*11:10	B2RH54	161	175	NDPLKIKRVHARMAF	34.05
3525	DRB1*11:10	B2RH54	164	178	LKIKRVHARMAFTEI	34.08
3526	DRB1*11:10	B2RH54	172	186	RMAFTEIKVQMSAAY	35.85
3527	DRB1*11:10	B2RH54	192	206	FVPEKIYGLIAKKQS	42.80
3528	DRB1*11:10	B2RH54	171	185	ARMAFTEIKVQMSAA	44.66
3529	DRB1*11:10	B2RH58	258	272	EGRPEFVMMLKLKKT	8.89
3530	DRB1*11:10	B2RH58	259	273	GRPEFVMMLKLKKTG	9.36
3531	DRB1*11:10	B2RH58	260	274	RPEFVMMLKLKKTGT	9.39
3532	DRB1*11:10	B2RH58	261	275	PEFVMMLKLKKTGTD	10.44
3533	DRB1*11:10	B2RH58	257	271	NEGRPEFVMMLKLKK	11.52
3534	DRB1*11:10	B2RH58	262	276	EFVMMLKLKKTGTDD	12.54
3535	DRB1*11:10	B2RH58	656	670	VKNDRFVKSARKLKK	23.55
3536	DRB1*11:10	B2RH58	263	277	FVMMLKLKKTGTDDN	30.54
3537	DRB1*11:10	B2RH58	177	191	SIELKRVAAKLRLKK	40.98
3538	DRB1*11:10	B2RH58	175	189	LGSIELKRVAAKLRL	45.78
3539	DRB1*11:10	B2RH58	176	190	GSIELKRVAAKLRLK	45.96
3540	DRB1*11:10	B2RH58	178	192	IELKRVAAKLRLKKP	48.99
3541	DRB1*11:10	B2RH59	284	298	TRNHFYKMILKKAKA	12.67
3542	DRB1*11:10	B2RH59	285	299	RNHFYKMILKKAKAP	13.51
3543	DRB1*11:10	B2RH59	287	301	HFYKMILKKAKAPGR	15.15
3544	DRB1*11:10	B2RH59	286	300	NHFYKMILKKAKAPG	16.24
3545	DRB1*11:10	B2RH59	288	302	FYKMILKKAKAPGRP	18.61
3546	DRB1*11:10	B2RH59	283	297	ITRNHFYKMILKKAK	19.50
3547	DRB1*11:10	B2RH59	155	169	QIQLLRNMAKFSLSV	37.57
3548	DRB1*11:10	B2RH59	154	168	GQIQLLRNMAKFSLS	38.33
3549	DRB1*11:10	B2RH59	153	167	LGQIQLLRNMAKFSL	38.45
3550	DRB1*11:10	B2RH59	156	170	IQLLRNMAKFSLSVT	38.49
3551	DRB1*11:10	B2RH59	503	517	KTLYKYVLTTMPQNK	41.30
3552	DRB1*11:10	B2RH59	152	166	NLGQIQLLRNMAKFS	44.67
3553	DRB1*11:10	B2RH59	431	445	EKYQYVFFKANTSSA	45.01
3554	DRB1*11:10	B2RH59	289	303	YKMILKKAKAPGRPT	45.42
3555	DRB1*11:10	B2RH59	432	446	KYQYVFFKANTSSAE	45.72
3556	DRB1*11:11	B2RH54	162	176	DPLKIKRVHARMAFT	29.72
3557	DRB1*11:11	B2RH54	163	177	PLKIKRVHARMAFTE	30.05
3558	DRB1*11:11	B2RH54	161	175	NDPLKIKRVHARMAF	34.77
3559	DRB1*11:11	B2RH54	164	178	LKIKRVHARMAFTEI	39.88
3560	DRB1*11:11	B2RH58	260	274	RPEFVMMLKLKKTGT	31.76
3561	DRB1*11:11	B2RH58	258	272	EGRPEFVMMLKLKKT	34.00
3562	DRB1*11:11	B2RH58	259	273	GRPEFVMMLKLKKTG	34.51
3563	DRB1*11:11	B2RH58	261	275	PEFVMMLKLKKTGTD	39.44
3564	DRB1*11:11	B2RH58	656	670	VKNDRFVKSARKLKK	43.71
3565	DRB1*11:11	B2RH58	177	191	SIELKRVAAKLRLKK	44.25

3566	DRB1*11:11	B2RH58	257	271	NEGRPEFVMMLKLKK	46.72
3567	DRB1*11:11	B2RH59	284	298	TRNHFYKMILKKAKA	33.23
3568	DRB1*11:11	B2RH59	285	299	RNHFYKMILKKAKAP	34.46
3569	DRB1*11:11	B2RH59	287	301	HFYKMILKKAKAPGR	36.27
3570	DRB1*11:11	B2RH59	286	300	NHFYKMILKKAKAPG	41.00
3571	DRB1*11:11	B2RH59	288	302	FYKMILKKAKAPGRP	41.84
3572	DRB1*11:11	B2RH59	155	169	QIQLLRNMAKFSLSV	49.24
3573	DRB1*11:12	A0PA81	33	47	RPFRLTVRAWDADMQ	30.44
3574	DRB1*11:12	A0PA81	30	44	DCPRPFRLTVRAWDA	34.41
3575	DRB1*11:12	A0PA81	32	46	PRPFRLTVRAWDADM	35.97
3576	DRB1*11:12	A0PA81	166	180	TAQVHIIIRGYQEWL	41.46
3577	DRB1*11:12	A0PA81	31	45	CPRPFRLTVRAWDAD	44.40
3578	DRB1*11:12	A0PA81	165	179	RTAQVHIIIRGYQEW	48.52
3579	DRB1*11:12	A0PA81	167	181	AQVHIIIRGYQEWLE	49.34
3580	DRB1*11:12	B2RH54	196	210	KIYGLIAKKQSNLFG	12.76
3581	DRB1*11:12	B2RH54	195	209	EKIYGLIAKKQSNLF	13.69
3582	DRB1*11:12	B2RH54	194	208	PEKIYGLIAKKQSNL	17.89
3583	DRB1*11:12	B2RH54	163	177	PLKIKRVHARMAFTE	26.32
3584	DRB1*11:12	B2RH54	162	176	DPLKIKRVHARMAFT	27.34
3585	DRB1*11:12	B2RH54	193	207	VPEKIYGLIAKKQSN	27.53
3586	DRB1*11:12	B2RH54	197	211	IYGLIAKKQSNLFGA	28.64
3587	DRB1*11:12	B2RH54	161	175	NDPLKIKRVHARMAF	34.05
3588	DRB1*11:12	B2RH54	164	178	LKIKRVHARMAFTEI	34.08
3589	DRB1*11:12	B2RH54	172	186	RMAFTEIKVQMSAAY	35.85
3590	DRB1*11:12	B2RH54	192	206	FVPEKIYGLIAKKQS	42.80
3591	DRB1*11:12	B2RH54	171	185	ARMAFTEIKVQMSAA	44.66
3592	DRB1*11:12	B2RH58	258	272	EGRPEFVMMLKLKKT	8.89
3593	DRB1*11:12	B2RH58	259	273	GRPEFVMMLKLKKTG	9.36
3594	DRB1*11:12	B2RH58	260	274	RPEFVMMLKLKKTGT	9.39
3595	DRB1*11:12	B2RH58	261	275	PEFVMMLKLKKTGTD	10.44
3596	DRB1*11:12	B2RH58	257	271	NEGRPEFVMMLKLKK	11.52
3597	DRB1*11:12	B2RH58	262	276	EFVMMLKLKKTGTDD	12.54
3598	DRB1*11:12	B2RH58	656	670	VKNDRFVKSARLKK	23.55
3599	DRB1*11:12	B2RH58	263	277	FVMMLKLKKTGTDDN	30.54
3600	DRB1*11:12	B2RH58	177	191	SIELKRVAAKLRLKK	40.98
3601	DRB1*11:12	B2RH58	175	189	LGSIELKRVAAKLRL	45.78
3602	DRB1*11:12	B2RH58	176	190	GSIELKRVAAKLRLK	45.96
3603	DRB1*11:12	B2RH58	178	192	IELKRVAAKLRLKKP	48.99
3604	DRB1*11:12	B2RH59	284	298	TRNHFYKMILKKAKA	12.67
3605	DRB1*11:12	B2RH59	285	299	RNHFYKMILKKAKAP	13.51
3606	DRB1*11:12	B2RH59	287	301	HFYKMILKKAKAPGR	15.15
3607	DRB1*11:12	B2RH59	286	300	NHFYKMILKKAKAPG	16.24
3608	DRB1*11:12	B2RH59	288	302	FYKMILKKAKAPGRP	18.61

3609	DRB1*11:12	B2RH59	283	297	ITRNHFYKMILKKAK	19.50
3610	DRB1*11:12	B2RH59	155	169	QIQLLRNMAKFSLSV	37.57
3611	DRB1*11:12	B2RH59	154	168	GQIQLLRNMAKFSLS	38.33
3612	DRB1*11:12	B2RH59	153	167	LGQIQLLRNMAKFSL	38.45
3613	DRB1*11:12	B2RH59	156	170	IQLLRNMAKFSLSVT	38.49
3614	DRB1*11:12	B2RH59	503	517	KTLYKYVLTTPQNK	41.30
3615	DRB1*11:12	B2RH59	152	166	NLGQIQLLRNMAKFS	44.67
3616	DRB1*11:12	B2RH59	431	445	EKYQYVFFKANTSSA	45.01
3617	DRB1*11:12	B2RH59	289	303	YKMILKKAKAPGRPT	45.42
3618	DRB1*11:12	B2RH59	432	446	KYQYVFFKANTSSAE	45.72
3619	DRB1*11:13	A0PA81	224	238	NGDFISPIIRVYPTL	39.74
3620	DRB1*11:13	A0PA81	225	239	GDFISPIIRVYPTLD	42.25
3621	DRB1*11:13	A0PA81	166	180	TAQVHIIIRGYQEWL	45.05
3622	DRB1*11:13	A0PA81	226	240	DFISPIIRVYPTLDT	47.87
3623	DRB1*11:13	A0PA81	165	179	RTAQVHIIIRGYQEW	48.30
3624	DRB1*11:13	B2RH54	162	176	DPLKIKRVHARMAFT	22.38
3625	DRB1*11:13	B2RH54	163	177	PLKIKRVHARMAFTE	22.98
3626	DRB1*11:13	B2RH54	161	175	NDPLKIKRVHARMAF	25.09
3627	DRB1*11:13	B2RH54	175	189	FTEIKVQMSAAYDNI	28.44
3628	DRB1*11:13	B2RH54	174	188	AFTEIKVQMSAAYDN	30.32
3629	DRB1*11:13	B2RH54	137	151	KTIVLKAGKNYIGYS	31.33
3630	DRB1*11:13	B2RH54	164	178	LKIKRVHARMAFTEI	31.46
3631	DRB1*11:13	B2RH54	136	150	PKTIVLKAGKNYIGY	32.82
3632	DRB1*11:13	B2RH54	173	187	MAFTEIKVQMSAAYD	33.84
3633	DRB1*11:13	B2RH54	176	190	TEIKVQMSAAYDNIY	36.81
3634	DRB1*11:13	B2RH54	160	174	ENDPLKIKRVHARMA	41.93
3635	DRB1*11:13	B2RH54	128	142	AGLIMTAEPKTIVLK	42.94
3636	DRB1*11:13	B2RH54	91	105	QRTLVMANTGAMEL	43.13
3637	DRB1*11:13	B2RH54	135	149	EPKTIVLKAGKNYIG	43.90
3638	DRB1*11:13	B2RH54	129	143	GLIMTAEPKTIVLKA	44.30
3639	DRB1*11:13	B2RH54	100	114	TGAMELVGKTLAEVK	44.35
3640	DRB1*11:13	B2RH54	172	186	RMAFTEIKVQMSAAY	44.47
3641	DRB1*11:13	B2RH54	92	106	RTLVMANTGAMELV	45.51
3642	DRB1*11:13	B2RH54	34	48	TISVVLKTSNSNRAF	46.50
3643	DRB1*11:13	B2RH54	138	152	TIVLKAGKNYIGYSG	47.39
3644	DRB1*11:13	B2RH54	33	47	ATISVVLKTSNSNRA	49.24
3645	DRB1*11:13	B2RH57	192	206	SDVIKITKVQILRNA	16.50
3646	DRB1*11:13	B2RH57	191	205	GSDVIKITKVQILRN	17.13
3647	DRB1*11:13	B2RH57	190	204	PGSDVIKITKVQILR	18.57
3648	DRB1*11:13	B2RH57	193	207	DVIKITKVQILRNAK	20.81
3649	DRB1*11:13	B2RH57	238	252	AQSIQASAPLYVYE	24.90
3650	DRB1*11:13	B2RH57	198	212	TKVQILRNAKNSRLL	25.04
3651	DRB1*11:13	B2RH57	199	213	KVQILRNAKNSRLL	25.71

3652	DRB1*11:13	B2RH57	239	253	QSIIQASAPLYVYEN	25.81
3653	DRB1*11:13	B2RH57	237	251	SAQSIIQASAPLYVY	27.62
3654	DRB1*11:13	B2RH57	189	203	TPGSDVIKITYKVQIL	30.00
3655	DRB1*11:13	B2RH57	414	428	NGIGIQRRTNLFFTV	30.96
3656	DRB1*11:13	B2RH57	413	427	PNGIGIQRRTNLFFT	31.02
3657	DRB1*11:13	B2RH57	194	208	VIKITKVQILRNAKN	31.80
3658	DRB1*11:13	B2RH57	197	211	ITKVQILRNAKNSRL	32.43
3659	DRB1*11:13	B2RH57	200	214	VQILRNAKNSRLLEG	33.37
3660	DRB1*11:13	B2RH57	63	77	GEDLIKKVRIFVFRE	33.92
3661	DRB1*11:13	B2RH57	79	93	LNGLWVLDKQKLFAS	34.89
3662	DRB1*11:13	B2RH57	169	183	QANISLNRIA AKITL	35.25
3663	DRB1*11:13	B2RH57	62	76	SGEDLIKKVRIFVFR	35.79
3664	DRB1*11:13	B2RH57	64	78	EDLIKKVRIFVFREG	35.81
3665	DRB1*11:13	B2RH57	412	426	KPNGIGIQRRTNLFF	36.15
3666	DRB1*11:13	B2RH57	168	182	VQANISLNRIA AKIT	38.32
3667	DRB1*11:13	B2RH57	78	92	GLNGLWVLDKQKLFA	38.83
3668	DRB1*11:13	B2RH57	167	181	TVQANISLNRIA AKI	40.14
3669	DRB1*11:13	B2RH57	80	94	NGLWVLDKQKLFASG	40.23
3670	DRB1*11:13	B2RH57	415	429	GIGIQRRTNLFFTVD	40.88
3671	DRB1*11:13	B2RH57	240	254	SIIQASAPLYVYENI	41.24
3672	DRB1*11:13	B2RH57	170	184	ANISLNRIA AKITLD	45.83
3673	DRB1*11:13	B2RH57	196	210	KITKVQILRNAKNSR	45.94
3674	DRB1*11:13	B2RH57	166	180	GTVQANISLNRIA AK	47.43
3675	DRB1*11:13	B2RH57	236	250	GSAQSIIQASAPLYV	47.77
3676	DRB1*11:13	B2RH57	171	185	NISLNRIA AKITLDI	48.73
3677	DRB1*11:13	B2RH57	172	186	ISLNRIA AKITLDIK	48.82
3678	DRB1*11:13	B2RH57	65	79	DLIKKVRIFVFREGL	49.19
3679	DRB1*11:13	B2RH58	597	611	RAEIQLVDKLQREQA	18.58
3680	DRB1*11:13	B2RH58	596	610	TRAEIQLVDKLQREQ	20.58
3681	DRB1*11:13	B2RH58	595	609	PTRAEIQLVDKLQRE	21.82
3682	DRB1*11:13	B2RH58	598	612	AEIQLVDKLQREQAG	22.78
3683	DRB1*11:13	B2RH58	177	191	SIELKRVA AKLRLKK	24.68
3684	DRB1*11:13	B2RH58	260	274	RPEFVMMLKLKKTGT	25.10
3685	DRB1*11:13	B2RH58	178	192	IELKRVA AKLRLKKP	27.29
3686	DRB1*11:13	B2RH58	259	273	GRPEFVMMLKLKKTG	27.60
3687	DRB1*11:13	B2RH58	176	190	GSIELKRVA AKLRLK	28.30
3688	DRB1*11:13	B2RH58	258	272	EGRPEFVMMLKLKKT	28.31
3689	DRB1*11:13	B2RH58	599	613	EIQLVDKLQREQAGV	28.45
3690	DRB1*11:13	B2RH58	261	275	PEFVMMLKLKKTGTD	28.93
3691	DRB1*11:13	B2RH58	594	608	LPTRAEIQLVDKLQR	29.07
3692	DRB1*11:13	B2RH58	175	189	LGSIELKRVA AKLRL	30.34
3693	DRB1*11:13	B2RH58	408	422	TKKIKVRSILPINNI	31.07
3694	DRB1*11:13	B2RH58	430	444	IKNSIGFEKKIKIRQ	31.23

3695	DRB1*11:13	B2RH58	431	445	KNSIGFEKKIKIRQN	32.08
3696	DRB1*11:13	B2RH58	429	443	TIKNSIGFEKKIKIR	34.18
3697	DRB1*11:13	B2RH58	409	423	KKIKVRSILPINNIP	34.72
3698	DRB1*11:13	B2RH58	179	193	ELKRVAAKLRLKKPV	35.04
3699	DRB1*11:13	B2RH58	438	452	KKIKIRQNPSQFIIN	36.46
3700	DRB1*11:13	B2RH58	262	276	EFVMMLKLKKTGTDD	37.65
3701	DRB1*11:13	B2RH58	437	451	EKKIKIRQNPSQFII	38.59
3702	DRB1*11:13	B2RH58	410	424	KIKVRSILPINNIPK	39.52
3703	DRB1*11:13	B2RH58	439	453	KIKIRQNPSQFIINT	39.63
3704	DRB1*11:13	B2RH58	422	436	IPKDISFTIKNSIGF	39.96
3705	DRB1*11:13	B2RH58	407	421	NTKKIKVRSILPINN	40.07
3706	DRB1*11:13	B2RH58	257	271	NEGRPEFVMMLKLKK	41.57
3707	DRB1*11:13	B2RH58	424	438	KDISFTIKNSIGFEK	42.37
3708	DRB1*11:13	B2RH58	174	188	QLGSIELKRVAAKLR	42.52
3709	DRB1*11:13	B2RH58	423	437	PKDISFTIKNSIGFE	43.30
3710	DRB1*11:13	B2RH58	133	147	SFLKTLVPNSILLQN	43.52
3711	DRB1*11:13	B2RH58	432	446	NSIGFEKKIKIRQNP	43.87
3712	DRB1*11:13	B2RH58	180	194	LKRVAAKLRLKKPVL	44.28
3713	DRB1*11:13	B2RH58	132	146	TSFLKTLVPNSILLQ	46.02
3714	DRB1*11:13	B2RH58	406	420	ANTKKIKVRSILPIN	47.97
3715	DRB1*11:13	B2RH59	155	169	QIQLLRNMAKFSLSV	16.00
3716	DRB1*11:13	B2RH59	156	170	IQLLRNMAKFSLSVT	16.51
3717	DRB1*11:13	B2RH59	154	168	GQIQLLRNMAKFSLS	17.15
3718	DRB1*11:13	B2RH59	153	167	LGQIQLLRNMAKFSL	19.92
3719	DRB1*11:13	B2RH59	133	147	LETIRMWARISYPSI	21.11
3720	DRB1*11:13	B2RH59	157	171	QLLRNMAKFSLSVTP	21.85
3721	DRB1*11:13	B2RH59	132	146	DLETIRMWARISYPS	23.42
3722	DRB1*11:13	B2RH59	134	148	ETIRMWARISYPSIA	25.62
3723	DRB1*11:13	B2RH59	131	145	DDLETIRMWARISYP	26.13
3724	DRB1*11:13	B2RH59	422	436	KRSVTVLVREKYQYV	28.18
3725	DRB1*11:13	B2RH59	423	437	RSVTVLVREKYQYVF	30.09
3726	DRB1*11:13	B2RH59	421	435	LKRSVTVLVREKYQY	30.25
3727	DRB1*11:13	B2RH59	419	433	PDLKRSVTVLVREKY	30.73
3728	DRB1*11:13	B2RH59	420	434	DLKRSVTVLVREKYQ	30.83
3729	DRB1*11:13	B2RH59	152	166	NLGQIQLLRNMAKFS	34.30
3730	DRB1*11:13	B2RH59	135	149	TIRMWARISYPSIAP	34.38
3731	DRB1*11:13	B2RH59	130	144	ADDLETIRMWARISY	35.22
3732	DRB1*11:13	B2RH59	424	438	SVTVLVREKYQYVFF	37.87
3733	DRB1*11:13	B2RH59	158	172	LLRNMAKFSLSVTPP	37.91
3734	DRB1*11:13	B2RH59	39	53	SGSIVSLEHHGLRGA	43.82
3735	DRB1*11:13	B2RH59	151	165	QNLGQIQLLRNMAKF	44.41
3736	DRB1*11:13	B2RH59	418	432	NPDLKRSVTVLVREK	45.78
3737	DRB1*11:13	B2RH59	40	54	GSIVSLEHHGLRGAS	48.60

3738	DRB1*11:13	B2RH59	97	111	VERRIHFIANYELAD	49.22
3739	DRB1*11:13	B2RH59	98	112	ERRIHFIANYELADP	49.83
3740	DRB1*11:13	B2RH59	248	262	AGITCLILKARYNLP	49.90
3741	DRB1*11:13	B2RHG4	185	199	ELNISLSEKFQIVPI	19.32
3742	DRB1*11:13	B2RHG4	184	198	VELNISLSEKFQIVP	21.23
3743	DRB1*11:13	B2RHG4	183	197	KVELNISLSEKFQIV	21.58
3744	DRB1*11:13	B2RHG4	186	200	LNISLSEKFQIVPII	23.51
3745	DRB1*11:13	B2RHG4	175	189	VPLVRAIAKVELNIS	26.17
3746	DRB1*11:13	B2RHG4	174	188	NVPLVRAIAKVELNI	26.77
3747	DRB1*11:13	B2RHG4	176	190	PLVRAIAKVELNISL	31.08
3748	DRB1*11:13	B2RHG4	173	187	DNVPLVRAIAKVELN	32.03
3749	DRB1*11:13	B2RHG4	182	196	AKVELNISLSEKFQI	38.01
3750	DRB1*11:13	B2RHG4	187	201	NISLSEKFQIVPIIV	43.06
3751	DRB1*11:13	B2RHG4	169	183	NRLLDNVPLVRAIAK	43.49
3752	DRB1*11:13	B2RHG4	193	207	KFQIVPIIVNGSLSE	44.22
3753	DRB1*11:13	B2RHG4	177	191	LVRAIAKVELNISLS	44.25
3754	DRB1*11:13	B2RHG4	172	186	LDNVPLVRAIAKVEL	44.57
3755	DRB1*11:13	B2RHG4	168	182	ANRLLDNVPLVRAIA	44.63
3756	DRB1*11:13	B2RHG4	192	206	EKFQIVPIIVNGSLS	49.87
3757	DRB1*11:14	A0PA81	70	84	IDRLMMDAAQVAARK	39.01
3758	DRB1*11:14	A0PA81	277	291	YIDLRGANLNVLVSV	39.07
3759	DRB1*11:14	A0PA81	69	83	RIDRLMMDAAQVAAR	45.06
3760	DRB1*11:14	A0PA81	278	292	IDLRGANLNVLVSVT	49.36
3761	DRB1*11:14	B2RH54	36	50	SVVLKTSNSNRAFGV	20.93
3762	DRB1*11:14	B2RH54	311	325	YYPVLVNFNSNNYTY	20.98
3763	DRB1*11:14	B2RH54	92	106	RTLVMANTGAMELV	21.77
3764	DRB1*11:14	B2RH54	34	48	TISVVLKTSNSNRAF	25.38
3765	DRB1*11:14	B2RH54	35	49	ISVVLKTSNSNRAFG	26.95
3766	DRB1*11:14	B2RH54	91	105	QRTLVMANTGAMEL	27.58
3767	DRB1*11:14	B2RH54	37	51	VVLKTSNSNRAFGVG	27.77
3768	DRB1*11:14	B2RH54	312	326	YPVLVNFNSNNYTYD	27.89
3769	DRB1*11:14	B2RH54	310	324	TYYPVLVNFNSNNYT	29.10
3770	DRB1*11:14	B2RH54	175	189	FTEIKVQMSAAYDNI	29.23
3771	DRB1*11:14	B2RH54	93	107	TLVVMANTGAMELVG	31.57
3772	DRB1*11:14	B2RH54	238	252	ANVPWLSRNYVAPAA	33.41
3773	DRB1*11:14	B2RH54	240	254	VPWLSRNYVAPAADA	34.18
3774	DRB1*11:14	B2RH54	174	188	AFTEIKVQMSAAYDN	37.35
3775	DRB1*11:14	B2RH54	173	187	MAFTEIKVQMSAAYD	37.44
3776	DRB1*11:14	B2RH54	313	327	PVLVNFNSNNYTYDS	38.88
3777	DRB1*11:14	B2RH54	239	253	NVPWLSRNYVAPAAD	40.83
3778	DRB1*11:14	B2RH54	172	186	RMAFTEIKVQMSAAY	42.17
3779	DRB1*11:14	B2RH54	309	323	KTYYPVLVNFNSNNY	42.37
3780	DRB1*11:14	B2RH54	176	190	TEIKVQMSAAYDNIY	43.31

3781	DRB1*11:14	B2RH54	94	108	LVVMANTGAMELVGK	45.03
3782	DRB1*11:14	B2RH54	90	104	GQRTLVMANTGAME	46.08
3783	DRB1*11:14	B2RH57	237	251	SAQSIIQASAPLYVY	11.85
3784	DRB1*11:14	B2RH57	238	252	AQSIIQASAPLYVYE	12.76
3785	DRB1*11:14	B2RH57	239	253	QSIIQASAPLYVYEN	14.28
3786	DRB1*11:14	B2RH57	236	250	GSAQSIIQASAPLYV	15.74
3787	DRB1*11:14	B2RH57	169	183	QANISLNRIAAKITL	19.39
3788	DRB1*11:14	B2RH57	240	254	SIIQASAPLYVYENI	20.41
3789	DRB1*11:14	B2RH57	292	306	NHHYSIRRNHHYKLD	21.72
3790	DRB1*11:14	B2RH57	294	308	HYSIRRNHHYKLDGT	22.51
3791	DRB1*11:14	B2RH57	293	307	HHYSIRRNHHYKLDG	23.15
3792	DRB1*11:14	B2RH57	167	181	TVQANISLNRIAAKI	23.75
3793	DRB1*11:14	B2RH57	291	305	ANHHYSIRRNHHYKL	23.75
3794	DRB1*11:14	B2RH57	168	182	VQANISLNRIAAKIT	24.28
3795	DRB1*11:14	B2RH57	198	212	TKVQILRNAKNSRLL	25.77
3796	DRB1*11:14	B2RH57	170	184	ANISLNRIAAKITLD	26.50
3797	DRB1*11:14	B2RH57	295	309	YSIRRNHHYKLDGTI	26.79
3798	DRB1*11:14	B2RH57	199	213	KVQILRNAKNSRLL	26.99
3799	DRB1*11:14	B2RH57	166	180	GTVQANISLNRIAAK	28.93
3800	DRB1*11:14	B2RH57	200	214	VQILRNAKNSRLL	33.06
3801	DRB1*11:14	B2RH57	171	185	NISLNRIAAKITLDI	37.21
3802	DRB1*11:14	B2RH57	192	206	SDVIKITKVQILRNA	39.10
3803	DRB1*11:14	B2RH57	191	205	GSDVIKITKVQILRN	43.33
3804	DRB1*11:14	B2RH57	241	255	IIQASAPLYVYENIG	43.44
3805	DRB1*11:14	B2RH57	190	204	PGSDVIKITKVQILR	44.49
3806	DRB1*11:14	B2RH57	197	211	ITKVQILRNAKNSRL	44.86
3807	DRB1*11:14	B2RH57	193	207	DVIKITKVQILRNAK	48.34
3808	DRB1*11:14	B2RH58	438	452	KKIKIRQNPSQFIIN	8.14
3809	DRB1*11:14	B2RH58	437	451	EKKIKIRQNPSQFII	8.15
3810	DRB1*11:14	B2RH58	439	453	KIKIRQNPSQFIINT	8.25
3811	DRB1*11:14	B2RH58	440	454	IKIRQNPSQFIINTF	9.98
3812	DRB1*11:14	B2RH58	102	116	YGQFNGNNSFKIYLV	10.61
3813	DRB1*11:14	B2RH58	436	450	FEKKIKIRQNPSQFI	12.83
3814	DRB1*11:14	B2RH58	101	115	MYGQFNGNNSFKIYL	12.97
3815	DRB1*11:14	B2RH58	111	125	FKIYLVANVNFSGSF	14.08
3816	DRB1*11:14	B2RH58	112	126	KIYLVANVNFSGSFE	14.30
3817	DRB1*11:14	B2RH58	441	455	KIRQNPSQFIINTFG	15.02
3818	DRB1*11:14	B2RH58	103	117	GQFNGNNSFKIYLVA	15.65
3819	DRB1*11:14	B2RH58	316	330	EDPVTINGSLSVIEW	17.29
3820	DRB1*11:14	B2RH58	110	124	SFKIYLVANVNFSGS	17.35
3821	DRB1*11:14	B2RH58	546	560	HWEYYTLNPLRLIYH	17.57
3822	DRB1*11:14	B2RH58	547	561	WEYYTLNPLRLIYHS	17.74
3823	DRB1*11:14	B2RH58	317	331	DPVTINGSLSVIEWT	17.77

3824	DRB1*11:14	B2RH58	100	114	SMYGQFNGNNSFKIY	18.53
3825	DRB1*11:14	B2RH58	314	328	NEEDPVTINGSLSVI	18.64
3826	DRB1*11:14	B2RH58	318	332	PVTINGSLSVIEWTS	18.66
3827	DRB1*11:14	B2RH58	315	329	EEDPVTINGSLSVIE	19.60
3828	DRB1*11:14	B2RH58	545	559	DHWEYYTLNPLRLIY	19.91
3829	DRB1*11:14	B2RH58	133	147	SFLKTLVPNSILLQN	20.96
3830	DRB1*11:14	B2RH58	132	146	TSFLKTLVPNSILLQ	22.28
3831	DRB1*11:14	B2RH58	548	562	EYYTLNPLRLIYHSN	22.29
3832	DRB1*11:14	B2RH58	113	127	IYLVANVNFSGSFEP	24.29
3833	DRB1*11:14	B2RH58	104	118	QFNGNNSFKIYLVAN	26.08
3834	DRB1*11:14	B2RH58	109	123	NSFKIYLVANVNFSG	26.31
3835	DRB1*11:14	B2RH58	134	148	FLKTLVPNSILLQND	26.51
3836	DRB1*11:14	B2RH58	463	477	EGNLAPNLNNKAIYQ	26.89
3837	DRB1*11:14	B2RH58	462	476	PEGNLAPNLNNKAIY	27.02
3838	DRB1*11:14	B2RH58	464	478	GNLAPNLNNKAIYQI	27.60
3839	DRB1*11:14	B2RH58	544	558	QDHWEYYTLNPLRLI	30.73
3840	DRB1*11:14	B2RH58	293	307	KKIRSNHLYDMAVTI	31.04
3841	DRB1*11:14	B2RH58	465	479	NLAPNLNNKAIYQIV	31.55
3842	DRB1*11:14	B2RH58	549	563	YYTLNPLRLIYHSNQ	34.50
3843	DRB1*11:14	B2RH58	313	327	LNEEDPVTINGSLSV	36.50
3844	DRB1*11:14	B2RH58	135	149	LKTLVPNSILLQNDG	36.86
3845	DRB1*11:14	B2RH58	99	113	ESMYGQFNGNNSFKI	39.07
3846	DRB1*11:14	B2RH58	291	305	SDKKIRSNHLYDMAV	40.40
3847	DRB1*11:14	B2RH58	556	570	RLIYHSNQONRYALM	40.49
3848	DRB1*11:14	B2RH58	555	569	LRLIYHSNQONRYAL	40.80
3849	DRB1*11:14	B2RH58	292	306	DKKIRSNHLYDMAVT	41.15
3850	DRB1*11:14	B2RH58	461	475	QPEGNLAPNLNNKAI	41.62
3851	DRB1*11:14	B2RH58	114	128	YLVANVNFSGSFEPN	44.29
3852	DRB1*11:14	B2RH58	408	422	TKKIKVRSILPINNI	45.58
3853	DRB1*11:14	B2RH58	3	17	TNRILNIICPPILFL	45.73
3854	DRB1*11:14	B2RH58	131	145	ETSFLKTLVPNSILL	46.01
3855	DRB1*11:14	B2RH58	67	81	LTLVFYKNGTKVWQA	46.93
3856	DRB1*11:14	B2RH58	2	16	RTNRILNIICPPILF	47.87
3857	DRB1*11:14	B2RH59	520	534	QFRFKSNKVNSAENI	16.39
3858	DRB1*11:14	B2RH59	521	535	FRFKSNKVNSAENIA	19.58
3859	DRB1*11:14	B2RH59	155	169	QIQLLRNMAKFSLSV	20.67
3860	DRB1*11:14	B2RH59	278	292	KVRYNITRNHFYKMI	22.66
3861	DRB1*11:14	B2RH59	418	432	NPDLKRSVTVLVREK	23.91
3862	DRB1*11:14	B2RH59	519	533	LQFRFKSNKVNSAEN	23.95
3863	DRB1*11:14	B2RH59	154	168	GQIQLLRNMAKFSLS	24.00
3864	DRB1*11:14	B2RH59	518	532	ELQFRFKSNKVNSAE	24.89
3865	DRB1*11:14	B2RH59	153	167	LGQIQLLRNMAKFSL	25.13
3866	DRB1*11:14	B2RH59	416	430	QGNPDLKRSVTVLV	25.39

3867	DRB1*11:14	B2RH59	279	293	VRYNITRNHFYKMIL	25.51
3868	DRB1*11:14	B2RH59	417	431	GNPDLKRSVTVLVRE	26.90
3869	DRB1*11:14	B2RH59	419	433	PDLKRSVTVLVREKY	26.93
3870	DRB1*11:14	B2RH59	280	294	RYNITRNHFYKMILK	27.01
3871	DRB1*11:14	B2RH59	277	291	NKVRYNITRNHFYKM	27.23
3872	DRB1*11:14	B2RH59	156	170	IQLLRNMAKFSLSVT	28.44
3873	DRB1*11:14	B2RH59	522	536	RFKSNKVNSAENIAV	31.45
3874	DRB1*11:14	B2RH59	517	531	KELQFRFKSNKVNSA	33.00
3875	DRB1*11:14	B2RH59	420	434	DLKRSVTVLVREKYQ	37.82
3876	DRB1*11:14	B2RH59	152	166	NLGQIQLLRNMAKFS	37.90
3877	DRB1*11:14	B2RH59	332	346	SGMLTVDHTYTMVQ	41.71
3878	DRB1*11:14	B2RH59	415	429	VQGNPDLKRSVTVLV	42.54
3879	DRB1*11:14	B2RH59	281	295	YNITRNHFYKMILKK	43.56
3880	DRB1*11:14	B2RH59	157	171	QLLRNMAKFSLSVTP	46.10
3881	DRB1*11:14	B2RH59	331	345	GSGMLTVDHTYTMV	48.20
3882	DRB1*11:14	B2RH59	523	537	FKSNKVNSAENIAVK	48.50
3883	DRB1*11:14	B2RHG4	113	127	KVYVAVNDNAVKTA	15.40
3884	DRB1*11:14	B2RHG4	196	210	IVPIIVNGSLSEFKF	16.44
3885	DRB1*11:14	B2RHG4	112	126	RKVYVAVNDNAVKT	17.41
3886	DRB1*11:14	B2RHG4	195	209	QIVPIIVNGSLSEFK	17.62
3887	DRB1*11:14	B2RHG4	111	125	ERKVYVAVNDNAV	18.64
3888	DRB1*11:14	B2RHG4	197	211	VPIIVNGSLSEFKFR	19.26
3889	DRB1*11:14	B2RHG4	114	128	VYVAVNDNAVKTAL	19.63
3890	DRB1*11:14	B2RHG4	194	208	FQIVPIIVNGSLSEF	23.08
3891	DRB1*11:14	B2RHG4	193	207	KFQIVPIIVNGSLSE	30.08
3892	DRB1*11:14	B2RHG4	198	212	PIIVNGSLSEFKFRY	30.11
3893	DRB1*11:14	B2RHG4	110	124	GERKVYVAVNDNAV	31.21
3894	DRB1*11:14	B2RHG4	115	129	YVAVNDNAVKTALD	33.71
3895	DRB1*11:14	B2RHG4	183	197	KVELNISLSEKFQIV	33.83
3896	DRB1*11:14	B2RHG4	167	181	LANRLLDNVPLVRAI	40.46
3897	DRB1*11:14	B2RHG4	168	182	ANRLLDNVPLVRAIA	40.81
3898	DRB1*11:14	B2RHG4	182	196	AKVELNISLSEKFQI	43.79
3899	DRB1*11:27	B2RH58	260	274	RPEFVMMLKLKKTGT	28.43
3900	DRB1*11:27	B2RH58	258	272	EGRPEFVMMLKLKKT	28.51
3901	DRB1*11:27	B2RH58	259	273	GRPEFVMMLKLKKTG	29.28
3902	DRB1*11:27	B2RH58	261	275	PEFVMMLKLKKTGTD	35.12
3903	DRB1*11:27	B2RH58	257	271	NEGRPEFVMMLKLKK	42.04
3904	DRB1*11:27	B2RH58	262	276	EFVMMLKLKKTGTDD	46.73
3905	DRB1*11:27	B2RH59	284	298	TRNHFYKMILKKAKA	43.51
3906	DRB1*11:27	B2RH59	285	299	RNHFYKMILKKAKAP	46.42
3907	DRB1*11:28	A0PA81	33	47	RPFRLTVRAWADMQ	30.44
3908	DRB1*11:28	A0PA81	30	44	DCPRPFRLTVRAWDA	34.41
3909	DRB1*11:28	A0PA81	32	46	PRPFRLTVRAWDADM	35.97

3910	DRB1*11:28	AOPA81	166	180	TAQVHIIIRGYQEWL	41.46
3911	DRB1*11:28	AOPA81	31	45	CPRPFRLTVRAWDAD	44.40
3912	DRB1*11:28	AOPA81	165	179	RTAQVHIIIRGYQEW	48.52
3913	DRB1*11:28	AOPA81	167	181	AQVHIIIRGYQEWLE	49.34
3914	DRB1*11:28	B2RH54	196	210	KIYGLIAKKQSNLFG	12.76
3915	DRB1*11:28	B2RH54	195	209	EKIYGLIAKKQSNLF	13.69
3916	DRB1*11:28	B2RH54	194	208	PEKIYGLIAKKQSNL	17.89
3917	DRB1*11:28	B2RH54	163	177	PLKIKRVHARMAFTE	26.32
3918	DRB1*11:28	B2RH54	162	176	DPLKIKRVHARMAFT	27.34
3919	DRB1*11:28	B2RH54	193	207	VPEKIYGLIAKKQSN	27.53
3920	DRB1*11:28	B2RH54	197	211	IYGLIAKKQSNLFGA	28.64
3921	DRB1*11:28	B2RH54	161	175	NDPLKIKRVHARMAF	34.05
3922	DRB1*11:28	B2RH54	164	178	LKIKRVHARMAFTEI	34.08
3923	DRB1*11:28	B2RH54	172	186	RMAFTEIKVQMSAAY	35.85
3924	DRB1*11:28	B2RH54	192	206	FVPEKIYGLIAKKQS	42.80
3925	DRB1*11:28	B2RH54	171	185	ARMAFTEIKVQMSAA	44.66
3926	DRB1*11:28	B2RH58	258	272	EGRPEFVMMLKLKKT	8.89
3927	DRB1*11:28	B2RH58	259	273	GRPEFVMMLKLKKTG	9.36
3928	DRB1*11:28	B2RH58	260	274	RPEFVMMLKLKKTGT	9.39
3929	DRB1*11:28	B2RH58	261	275	PEFVMMLKLKKTGTD	10.44
3930	DRB1*11:28	B2RH58	257	271	NEGRPEFVMMLKLKK	11.52
3931	DRB1*11:28	B2RH58	262	276	EFVMMLKLKKTGTDD	12.54
3932	DRB1*11:28	B2RH58	656	670	VKNDRFVKSARLKK	23.55
3933	DRB1*11:28	B2RH58	263	277	FVMMLKLKKTGTDDN	30.54
3934	DRB1*11:28	B2RH58	177	191	SIELKRVAAKLRLKK	40.98
3935	DRB1*11:28	B2RH58	175	189	LGSIELKRVAAKLRL	45.78
3936	DRB1*11:28	B2RH58	176	190	GSIELKRVAAKLRLK	45.96
3937	DRB1*11:28	B2RH58	178	192	IELKRVAAKLRLKKP	48.99
3938	DRB1*11:28	B2RH59	284	298	TRNHFYKMILKKAKA	12.67
3939	DRB1*11:28	B2RH59	285	299	RNHFYKMILKKAKAP	13.51
3940	DRB1*11:28	B2RH59	287	301	HFYKMILKKAKAPGR	15.15
3941	DRB1*11:28	B2RH59	286	300	NHFYKMILKKAKAPG	16.24
3942	DRB1*11:28	B2RH59	288	302	FYKMILKKAKAPGRP	18.61
3943	DRB1*11:28	B2RH59	283	297	ITRNHFYKMILKKAK	19.50
3944	DRB1*11:28	B2RH59	155	169	QIQLLRNMAKFSLSV	37.57
3945	DRB1*11:28	B2RH59	154	168	GQIQLLRNMAKFSLS	38.33
3946	DRB1*11:28	B2RH59	153	167	LGQIQLLRNMAKFSL	38.45
3947	DRB1*11:28	B2RH59	156	170	IQLLRNMAKFSLSVT	38.49
3948	DRB1*11:28	B2RH59	503	517	KTLYKYVLTTPQNK	41.30
3949	DRB1*11:28	B2RH59	152	166	NLGQIQLLRNMAKFS	44.67
3950	DRB1*11:28	B2RH59	431	445	EKYQYVFFKANTSSA	45.01
3951	DRB1*11:28	B2RH59	289	303	YKMILKKAKAPGRPT	45.42
3952	DRB1*11:28	B2RH59	432	446	KYQYVFFKANTSSAE	45.72

3953	DRB1*11:29	AOPA81	33	47	RPFRLTVRAWDADMQ	30.44
3954	DRB1*11:29	AOPA81	30	44	DCPRPFRLTVRAWDA	34.41
3955	DRB1*11:29	AOPA81	32	46	PRPFRLTVRAWDADM	35.97
3956	DRB1*11:29	AOPA81	166	180	TAQVHIIIRGYQEWL	41.46
3957	DRB1*11:29	AOPA81	31	45	CPRPFRLTVRAWDAD	44.40
3958	DRB1*11:29	AOPA81	165	179	RTAQVHIIIRGYQEW	48.52
3959	DRB1*11:29	AOPA81	167	181	AQVHIIIRGYQEWLE	49.34
3960	DRB1*11:29	B2RH54	196	210	KIYGLIAKKQSNLFG	12.76
3961	DRB1*11:29	B2RH54	195	209	EKIYGLIAKKQSNLF	13.69
3962	DRB1*11:29	B2RH54	194	208	PEKIYGLIAKKQSNL	17.89
3963	DRB1*11:29	B2RH54	163	177	PLKIKRVHARMAFTE	26.32
3964	DRB1*11:29	B2RH54	162	176	DPLKIKRVHARMAFT	27.34
3965	DRB1*11:29	B2RH54	193	207	VPEKIYGLIAKKQSN	27.53
3966	DRB1*11:29	B2RH54	197	211	IYGLIAKKQSNLFGA	28.64
3967	DRB1*11:29	B2RH54	161	175	NDPLKIKRVHARMAF	34.05
3968	DRB1*11:29	B2RH54	164	178	LKIKRVHARMAFTEI	34.08
3969	DRB1*11:29	B2RH54	172	186	RMAFTEIKVQMSAAY	35.85
3970	DRB1*11:29	B2RH54	192	206	FVPEKIYGLIAKKQS	42.80
3971	DRB1*11:29	B2RH54	171	185	ARMAFTEIKVQMSAA	44.66
3972	DRB1*11:29	B2RH58	258	272	EGRPEFVMMLKLKKT	8.89
3973	DRB1*11:29	B2RH58	259	273	GRPEFVMMLKLKKTG	9.36
3974	DRB1*11:29	B2RH58	260	274	RPEFVMMLKLKKTGT	9.39
3975	DRB1*11:29	B2RH58	261	275	PEFVMMLKLKKTGTD	10.44
3976	DRB1*11:29	B2RH58	257	271	NEGRPEFVMMLKLKK	11.52
3977	DRB1*11:29	B2RH58	262	276	EFVMMLKLKKTGTDD	12.54
3978	DRB1*11:29	B2RH58	656	670	VKNDRFVKSARKLKK	23.55
3979	DRB1*11:29	B2RH58	263	277	FVMMLKLKKTGTDDN	30.54
3980	DRB1*11:29	B2RH58	177	191	SIELKRVAAKLRLKK	40.98
3981	DRB1*11:29	B2RH58	175	189	LGSIELKRVAAKLRL	45.78
3982	DRB1*11:29	B2RH58	176	190	GSIELKRVAAKLRLK	45.96
3983	DRB1*11:29	B2RH58	178	192	IELKRVAAKLRLKKP	48.99
3984	DRB1*11:29	B2RH59	284	298	TRNHFYKMILKKAKA	12.67
3985	DRB1*11:29	B2RH59	285	299	RNHFYKMILKKAKAP	13.51
3986	DRB1*11:29	B2RH59	287	301	HFYKMILKKAKAPGR	15.15
3987	DRB1*11:29	B2RH59	286	300	NHFYKMILKKAKAPG	16.24
3988	DRB1*11:29	B2RH59	288	302	FYKMILKKAKAPGRP	18.61
3989	DRB1*11:29	B2RH59	283	297	ITRNHFYKMILKKAK	19.50
3990	DRB1*11:29	B2RH59	155	169	QIQLLRNMAKFSLSV	37.57
3991	DRB1*11:29	B2RH59	154	168	GQIQLLRNMAKFSLS	38.33
3992	DRB1*11:29	B2RH59	153	167	LGQIQLLRNMAKFSL	38.45
3993	DRB1*11:29	B2RH59	156	170	IQLLRNMAKFSLSVT	38.49
3994	DRB1*11:29	B2RH59	503	517	KTLYKYVLTTPQNK	41.30
3995	DRB1*11:29	B2RH59	152	166	NLGQIQLLRNMAKFS	44.67

3996	DRB1*11:29	B2RH59	431	445	EKYQYVFFKANTSSA	45.01
3997	DRB1*11:29	B2RH59	289	303	YKMILKKAKAPGRPT	45.42
3998	DRB1*11:29	B2RH59	432	446	KYQYVFFKANTSSAE	45.72
3999	DRB1*11:37	B2RH54	196	210	KIYGLIAKKQSNLFG	31.29
4000	DRB1*11:37	B2RH54	195	209	EKIYGLIAKKQSNLF	31.42
4001	DRB1*11:37	B2RH54	194	208	PEKIYGLIAKKQSNL	40.60
4002	DRB1*11:37	B2RH58	260	274	RPEFVMMLKLKKTGT	17.17
4003	DRB1*11:37	B2RH58	258	272	EGRPEFVMMLKLKKT	17.58
4004	DRB1*11:37	B2RH58	259	273	GRPEFVMMLKLKKTG	17.69
4005	DRB1*11:37	B2RH58	261	275	PEFVMMLKLKKTGTD	22.12
4006	DRB1*11:37	B2RH58	257	271	NEGRPEFVMMLKLKK	25.33
4007	DRB1*11:37	B2RH58	262	276	EFVMMLKLKKTGTDD	29.60
4008	DRB1*11:37	B2RH59	284	298	TRNHFYKMILKKAKA	24.33
4009	DRB1*11:37	B2RH59	285	299	RNHFYKMILKKAKAP	26.00
4010	DRB1*11:37	B2RH59	286	300	NHFYKMILKKAKAPG	31.13
4011	DRB1*11:37	B2RH59	287	301	HFYKMILKKAKAPGR	31.30
4012	DRB1*11:37	B2RH59	288	302	FYKMILKKAKAPGRP	39.74
4013	DRB1*11:37	B2RH59	283	297	ITRNHFYKMILKKAK	40.01
4014	DRB1*11:42	A0PA81	166	180	TAQVHIIIRGYQEWL	21.62
4015	DRB1*11:42	A0PA81	165	179	RTAQVHIIIRGYQEW	22.60
4016	DRB1*11:42	A0PA81	164	178	RRTAQVHIIIRGYQE	25.30
4017	DRB1*11:42	A0PA81	167	181	AQVHIIIRGYQEWLE	27.47
4018	DRB1*11:42	A0PA81	224	238	NGDFISPIIRVYPTL	29.80
4019	DRB1*11:42	A0PA81	225	239	GDFISPIIRVYPTLD	31.15
4020	DRB1*11:42	A0PA81	163	177	YRRTAQVHIIIRGYQ	34.52
4021	DRB1*11:42	A0PA81	223	237	QNGDFISPIIRVYPT	40.05
4022	DRB1*11:42	A0PA81	226	240	DFISPIIRVYPTLDT	40.09
4023	DRB1*11:42	A0PA81	168	182	QVHIIIRGYQEWLEA	44.33
4024	DRB1*11:42	A0PA81	227	241	FISPIIRVYPTLDTT	47.14
4025	DRB1*11:42	B2RH54	162	176	DPLKIKRVHARMAFT	13.02
4026	DRB1*11:42	B2RH54	163	177	PLKIKRVHARMAFTE	13.11
4027	DRB1*11:42	B2RH54	161	175	NDPLKIKRVHARMAF	14.72
4028	DRB1*11:42	B2RH54	164	178	LKIKRVHARMAFTEI	17.18
4029	DRB1*11:42	B2RH54	137	151	KTIVLKAGKNYIGYS	21.67
4030	DRB1*11:42	B2RH54	136	150	PKTIVLKAGKNYIGY	23.57
4031	DRB1*11:42	B2RH54	175	189	FTEIKVQMSAAYDNI	24.47
4032	DRB1*11:42	B2RH54	160	174	ENDPLKIKRVHARMA	24.69
4033	DRB1*11:42	B2RH54	100	114	TGAMELVGKTLAEVK	24.79
4034	DRB1*11:42	B2RH54	195	209	EKIYGLIAKKQSNLF	25.69
4035	DRB1*11:42	B2RH54	174	188	AFTEIKVQMSAAYDN	26.07
4036	DRB1*11:42	B2RH54	165	179	KIKRVHARMAFTEIK	28.33
4037	DRB1*11:42	B2RH54	91	105	QRTLVMANTGAMEL	28.48
4038	DRB1*11:42	B2RH54	196	210	KIYGLIAKKQSNLFG	28.76

4039	DRB1*11:42	B2RH54	173	187	MAFTEIKVQMSAAYD	29.52
4040	DRB1*11:42	B2RH54	33	47	ATISVVLKTSNSNRA	30.10
4041	DRB1*11:42	B2RH54	101	115	GAMELVGKTLAEVKA	30.12
4042	DRB1*11:42	B2RH54	32	46	NATISVVLKTSNSNR	30.56
4043	DRB1*11:42	B2RH54	135	149	EPKTIVLKAGKNYIG	31.44
4044	DRB1*11:42	B2RH54	92	106	RTLVMANTGAMELV	31.50
4045	DRB1*11:42	B2RH54	176	190	TEIKVQMSAAYDNIY	33.27
4046	DRB1*11:42	B2RH54	34	48	TISVVLKTSNSNRAF	33.66
4047	DRB1*11:42	B2RH54	194	208	PEKIYGLIAKKQSNL	34.36
4048	DRB1*11:42	B2RH54	138	152	TIVLKAGKNYIGYSG	34.64
4049	DRB1*11:42	B2RH54	99	113	NTGAMELVGKTLAEV	34.99
4050	DRB1*11:42	B2RH54	90	104	GQRTLVMANTGAME	35.19
4051	DRB1*11:42	B2RH54	197	211	IYGLIAKKQSNLFGA	37.26
4052	DRB1*11:42	B2RH54	172	186	RMAFTEIKVQMSAAY	37.41
4053	DRB1*11:42	B2RH54	134	148	AEPKTIVLKAGKNYI	40.80
4054	DRB1*11:42	B2RH54	31	45	GNATISVVLKTSNSN	45.22
4055	DRB1*11:42	B2RH54	102	116	AMELVGKTLAEVKAL	47.25
4056	DRB1*11:42	B2RH57	198	212	TKVQILRNAKNSRLL	16.94
4057	DRB1*11:42	B2RH57	192	206	SDVIKITKVQILRNA	17.74
4058	DRB1*11:42	B2RH57	197	211	ITKVQILRNAKNSRL	17.76
4059	DRB1*11:42	B2RH57	191	205	GSDVIKITKVQILRN	17.88
4060	DRB1*11:42	B2RH57	199	213	KVQILRNAKNSRLLE	19.85
4061	DRB1*11:42	B2RH57	193	207	DVIKITKVQILRNAK	19.91
4062	DRB1*11:42	B2RH57	190	204	PGSDVIKITKVQILR	21.31
4063	DRB1*11:42	B2RH57	196	210	KITKVQILRNAKNSR	22.16
4064	DRB1*11:42	B2RH57	169	183	QANISLNRIAAKITL	22.46
4065	DRB1*11:42	B2RH57	168	182	VQANISLNRIAAKIT	22.77
4066	DRB1*11:42	B2RH57	167	181	TVQANISLNRIAAKI	24.39
4067	DRB1*11:42	B2RH57	194	208	VIKITKVQILRNAKN	24.52
4068	DRB1*11:42	B2RH57	195	209	IKITKVQILRNAKNS	26.67
4069	DRB1*11:42	B2RH57	357	371	TFENSLSFTVRIKGR	26.68
4070	DRB1*11:42	B2RH57	358	372	FENSLSFTVRIKGRD	27.75
4071	DRB1*11:42	B2RH57	200	214	VQILRNAKNSRLLEG	28.28
4072	DRB1*11:42	B2RH57	360	374	NSLSFTVRIKGRDGS	29.50
4073	DRB1*11:42	B2RH57	63	77	GEDLIKKVRIFVFRE	29.51
4074	DRB1*11:42	B2RH57	359	373	ENSLSFTVRIKGRDG	29.99
4075	DRB1*11:42	B2RH57	166	180	GTVQANISLNRIAAC	30.56
4076	DRB1*11:42	B2RH57	170	184	ANISLNRIAACITLD	30.69
4077	DRB1*11:42	B2RH57	62	76	SGEDLIKKVRIFVFR	32.50
4078	DRB1*11:42	B2RH57	64	78	EDLIKKVRIFVFREG	32.79
4079	DRB1*11:42	B2RH57	414	428	NGIGIQRRTNLFFTV	33.18
4080	DRB1*11:42	B2RH57	400	414	GTTVYTIKVKALKPN	33.96
4081	DRB1*11:42	B2RH57	413	427	PNGIGIQRRTNLFFT	34.31

4082	DRB1*11:42	B2RH57	238	252	AQSIIQASAPLYVYE	34.66
4083	DRB1*11:42	B2RH57	189	203	TPGSDVIKITKVQIL	35.82
4084	DRB1*11:42	B2RH57	361	375	SLSFTVRIKGRDGSR	35.97
4085	DRB1*11:42	B2RH57	412	426	KPNGIGIQRRTNLFF	36.88
4086	DRB1*11:42	B2RH57	239	253	QSIIQASAPLYVYEN	36.94
4087	DRB1*11:42	B2RH57	237	251	SAQSIIQASAPLYVY	37.30
4088	DRB1*11:42	B2RH57	399	413	DGTTVYTIVKALKP	37.73
4089	DRB1*11:42	B2RH57	80	94	NGLWVLDKQKLFASG	38.50
4090	DRB1*11:42	B2RH57	79	93	LNGLWVLDKQKLFAS	38.58
4091	DRB1*11:42	B2RH57	398	412	ADGTTVYTIVKALK	38.99
4092	DRB1*11:42	B2RH57	171	185	NISLNRIAAKITLDI	39.38
4093	DRB1*11:42	B2RH57	401	415	TTVYTIVKALKPNG	39.86
4094	DRB1*11:42	B2RH57	165	179	QGTVQANISLNRIAA	40.59
4095	DRB1*11:42	B2RH57	172	186	ISLNRIAAKITLDIK	42.53
4096	DRB1*11:42	B2RH57	402	416	TVYTIVKALKPNGI	42.54
4097	DRB1*11:42	B2RH57	269	283	VEALYNGIKTRYAY	44.71
4098	DRB1*11:42	B2RH57	403	417	VYTIVKALKPENGIG	45.13
4099	DRB1*11:42	B2RH57	415	429	GIGIQRRTNLFFTV	46.19
4100	DRB1*11:42	B2RH57	65	79	DLIKKVRIFFVREGL	46.79
4101	DRB1*11:42	B2RH57	81	95	GLWVLDKQKLFASGQ	46.79
4102	DRB1*11:42	B2RH57	404	418	YTIKVKALKPENGIGI	47.01
4103	DRB1*11:42	B2RH57	78	92	GLNGLWVLDKQKLFA	47.24
4104	DRB1*11:42	B2RH58	260	274	RPEFVMMLKLKKTGT	12.39
4105	DRB1*11:42	B2RH58	261	275	PEFVMMLKLKKTGTD	13.25
4106	DRB1*11:42	B2RH58	259	273	GRPEFVMMLKLKKTG	13.34
4107	DRB1*11:42	B2RH58	597	611	RAEIQLVDKLQREQA	13.51
4108	DRB1*11:42	B2RH58	258	272	EGRPEFVMMLKLKKT	13.61
4109	DRB1*11:42	B2RH58	177	191	SIELKRVAAKLRLKK	14.21
4110	DRB1*11:42	B2RH58	596	610	TRAEIQLVDKLQREQ	14.90
4111	DRB1*11:42	B2RH58	262	276	EFVMMLKLKKTGTDD	15.28
4112	DRB1*11:42	B2RH58	595	609	PTRAEIQLVDKLQRE	15.31
4113	DRB1*11:42	B2RH58	178	192	IELKRVAAKLRLKKP	15.85
4114	DRB1*11:42	B2RH58	176	190	GSIELKRVAAKLRLK	16.14
4115	DRB1*11:42	B2RH58	598	612	AEIQLVDKLQREQAG	16.15
4116	DRB1*11:42	B2RH58	175	189	LGSIELKRVAAKLRL	16.66
4117	DRB1*11:42	B2RH58	179	193	ELKRVAAKLRLKKPV	18.98
4118	DRB1*11:42	B2RH58	599	613	EIQLVDKLQREQAGV	19.36
4119	DRB1*11:42	B2RH58	257	271	NEGRPEFVMMLKLKK	19.59
4120	DRB1*11:42	B2RH58	174	188	QLGSIELKRVAAKLR	20.55
4121	DRB1*11:42	B2RH58	594	608	LPTRAEIQLVDKLQR	20.68
4122	DRB1*11:42	B2RH58	180	194	LKRVAAKLRLKKPVL	21.47
4123	DRB1*11:42	B2RH58	656	670	VKNDRFVKSARKLKK	24.37
4124	DRB1*11:42	B2RH58	410	424	KIKVRSILPINNIPK	27.04

4125	DRB1*11:42	B2RH58	413	427	VRSILPINNIPKDIS	27.09
4126	DRB1*11:42	B2RH58	263	277	FVMMLKLKKTGTDDN	27.18
4127	DRB1*11:42	B2RH58	412	426	KVRSILPINNIPKDI	27.37
4128	DRB1*11:42	B2RH58	430	444	IKNSIGFEKKIKIRQ	27.86
4129	DRB1*11:42	B2RH58	431	445	KNSIGFEKKIKIRQN	28.05
4130	DRB1*11:42	B2RH58	552	566	LNPLRLIYHSNQQNR	28.82
4131	DRB1*11:42	B2RH58	411	425	IKVRSILPINNIPKD	29.42
4132	DRB1*11:42	B2RH58	181	195	KRVAAKLRLKKPVLN	29.66
4133	DRB1*11:42	B2RH58	408	422	TKKIKVRSILPINNI	30.07
4134	DRB1*11:42	B2RH58	173	187	KQLGSIELKRVAAKL	30.13
4135	DRB1*11:42	B2RH58	414	428	RSILPINNIPKDISF	31.33
4136	DRB1*11:42	B2RH58	429	443	TIKNSIGFEKKIKIR	31.80
4137	DRB1*11:42	B2RH58	182	196	RVAAKLRLKKPVLNI	32.12
4138	DRB1*11:42	B2RH58	409	423	KKIKVRSILPINNIP	32.98
4139	DRB1*11:42	B2RH58	629	643	DKAIKILLPTASGNA	34.06
4140	DRB1*11:42	B2RH58	630	644	KAIKILLPTASGNAT	34.09
4141	DRB1*11:42	B2RH58	553	567	NPLRLIYHSNQQNRY	34.95
4142	DRB1*11:42	B2RH58	183	197	VAAKLRLKKPVLNIS	35.11
4143	DRB1*11:42	B2RH58	551	565	TLNPLRLIYHSNQQN	37.64
4144	DRB1*11:42	B2RH58	600	614	IQLVDKLQREQAGVV	39.46
4145	DRB1*11:42	B2RH58	432	446	NSIGFEKKIKIRQNP	39.79
4146	DRB1*11:42	B2RH58	554	568	PLRLIYHSNQQNRYA	39.93
4147	DRB1*11:42	B2RH58	407	421	NTKKIKVRSILPINN	40.35
4148	DRB1*11:42	B2RH58	438	452	KKIKIRQNPSQFIIN	40.51
4149	DRB1*11:42	B2RH58	550	564	YTLNPLRLIYHSNQQ	41.20
4150	DRB1*11:42	B2RH58	628	642	PDKAIKILLPTASGN	41.32
4151	DRB1*11:42	B2RH58	415	429	SILPINNIPKDISFT	41.35
4152	DRB1*11:42	B2RH58	437	451	EKKIKIRQNPSQFII	41.75
4153	DRB1*11:42	B2RH58	172	186	GKQLGSIELKRVAAK	41.77
4154	DRB1*11:42	B2RH58	549	563	YYTLNPLRLIYHSNQ	42.92
4155	DRB1*11:42	B2RH58	184	198	AAKLRLKKPVLNISR	43.01
4156	DRB1*11:42	B2RH58	416	430	ILPINNIPKDISFTI	47.22
4157	DRB1*11:42	B2RH58	548	562	EYYTLNPLRLIYHSN	49.06
4158	DRB1*11:42	B2RH59	154	168	GQIQLLRNMAKFSL	11.45
4159	DRB1*11:42	B2RH59	155	169	QIQLLRNMAKFSLSV	11.49
4160	DRB1*11:42	B2RH59	156	170	IQLLRNMAKFSLSVT	12.27
4161	DRB1*11:42	B2RH59	153	167	LGQIQLLRNMAKFSL	13.42
4162	DRB1*11:42	B2RH59	133	147	LETIRMWARISYPSI	16.38
4163	DRB1*11:42	B2RH59	152	166	NLGQIQLLRNMAKFS	16.58
4164	DRB1*11:42	B2RH59	157	171	QLLRNMAKFSLSVTP	16.71
4165	DRB1*11:42	B2RH59	132	146	DLETIRMWARISYPS	17.56
4166	DRB1*11:42	B2RH59	134	148	ETIRMWARISYPSIA	19.09
4167	DRB1*11:42	B2RH59	131	145	DDLETIRMWARISYP	19.20

4168	DRB1*11:42	B2RH59	287	301	HFYKMILKKAKAPGR	19.28
4169	DRB1*11:42	B2RH59	151	165	QNLGQIQLLRNMAKF	20.12
4170	DRB1*11:42	B2RH59	288	302	FYKMILKKAKAPGRP	22.12
4171	DRB1*11:42	B2RH59	286	300	NHFKYKMILKKAKAPG	22.82
4172	DRB1*11:42	B2RH59	285	299	RNHFKYKMILKKAKAP	23.79
4173	DRB1*11:42	B2RH59	284	298	TRNHFKYKMILKKAKA	26.75
4174	DRB1*11:42	B2RH59	135	149	TIRMWARISYPSIAP	26.92
4175	DRB1*11:42	B2RH59	130	144	ADDLETIRMWARISY	27.06
4176	DRB1*11:42	B2RH59	422	436	KRSVTVLVREKYQYV	28.18
4177	DRB1*11:42	B2RH59	421	435	LKRSVTVLVREKYQY	29.44
4178	DRB1*11:42	B2RH59	289	303	YKMILKKAKAPGRPT	30.71
4179	DRB1*11:42	B2RH59	158	172	LLRNMAKFSLSVTPP	30.82
4180	DRB1*11:42	B2RH59	420	434	DLKRSVTVLVREKYQ	30.87
4181	DRB1*11:42	B2RH59	423	437	RSVTVLVREKYQYVF	31.25
4182	DRB1*11:42	B2RH59	150	164	NQNLGQIQLLRNMAK	31.43
4183	DRB1*11:42	B2RH59	419	433	PDLKRSVTVLVREKY	31.44
4184	DRB1*11:42	B2RH59	248	262	AGITCLILKARYNLP	36.75
4185	DRB1*11:42	B2RH59	249	263	GITCLILKARYNLPN	37.41
4186	DRB1*11:42	B2RH59	283	297	ITRNHFKYKMILKKAK	40.34
4187	DRB1*11:42	B2RH59	247	261	GAGITCLILKARYNL	40.46
4188	DRB1*11:42	B2RH59	424	438	SVTVLVREKYQYVFF	41.67
4189	DRB1*11:42	B2RH59	250	264	ITCLILKARYNLPNA	44.20
4190	DRB1*11:42	B2RH59	459	473	GNELLISAKLPDVLN	45.14
4191	DRB1*11:42	B2RH59	458	472	QGNELLISAKLPDVL	48.08
4192	DRB1*11:42	B2RH59	290	304	KMILKKAKAPGRPTL	48.71
4193	DRB1*11:42	B2RH59	277	291	NKVRYNITRNHFKYM	49.82
4194	DRB1*11:42	B2RHG4	174	188	NVPLVRAIAKVELNI	26.27
4195	DRB1*11:42	B2RHG4	175	189	VPLVRAIAKVELNIS	26.53
4196	DRB1*11:42	B2RHG4	173	187	DNVPLVRAIAKVELN	29.37
4197	DRB1*11:42	B2RHG4	185	199	ELNISLSEKFQIVPI	32.35
4198	DRB1*11:42	B2RHG4	193	207	KFQIVPIIVNGSLSE	32.35
4199	DRB1*11:42	B2RHG4	176	190	PLVRAIAKVELNISL	32.83
4200	DRB1*11:42	B2RHG4	192	206	EKFQIVPIIVNGSLS	34.13
4201	DRB1*11:42	B2RHG4	169	183	NRLLDNVPLVRAIAK	34.23
4202	DRB1*11:42	B2RHG4	135	149	SDLQTVKRRTTAMPWS	35.95
4203	DRB1*11:42	B2RHG4	183	197	KVELNISLSEKFQIV	36.83
4204	DRB1*11:42	B2RHG4	134	148	ESDLQTVKRRTTAMPW	36.98
4205	DRB1*11:42	B2RHG4	172	186	LDNVPLVRAIAKVEL	37.09
4206	DRB1*11:42	B2RHG4	170	184	RLLDNVPLVRAIAKV	37.28
4207	DRB1*11:42	B2RHG4	184	198	VELNISLSEKFQIVP	37.41
4208	DRB1*11:42	B2RHG4	168	182	ANRLLDNVPLVRAIA	39.92
4209	DRB1*11:42	B2RHG4	186	200	LNISLSEKFQIVPII	41.84
4210	DRB1*11:42	B2RHG4	191	205	SEKFQIVPIIVNGSL	43.77

4211	DRB1*11:42	B2RHG4	132	146	ANESDLQTVKRRTAM	47.75
4212	DRB1*11:46	A0PA81	166	180	TAQVHIIIRGYQEWL	16.07
4213	DRB1*11:46	A0PA81	165	179	RTAQVHIIIRGYQEW	16.46
4214	DRB1*11:46	A0PA81	167	181	AQVHIIIRGYQEWLE	17.83
4215	DRB1*11:46	A0PA81	164	178	RRTAQVHIIIRGYQE	18.89
4216	DRB1*11:46	A0PA81	163	177	YRRTAQVHIIIRGYQ	25.80
4217	DRB1*11:46	A0PA81	168	182	QVHIIIRGYQEWLEA	27.49
4218	DRB1*11:46	A0PA81	224	238	NGDFISPIIRVYPTL	29.89
4219	DRB1*11:46	A0PA81	225	239	GDFISPIIRVYPTLD	33.54
4220	DRB1*11:46	A0PA81	223	237	QNGDFISPIIRVYPT	45.43
4221	DRB1*11:46	A0PA81	226	240	DFISPIIRVYPTLDT	47.06
4222	DRB1*11:46	B2RH54	162	176	DPLKIKRVHARMAFT	12.37
4223	DRB1*11:46	B2RH54	163	177	PLKIKRVHARMAFTE	12.77
4224	DRB1*11:46	B2RH54	161	175	NDPLKIKRVHARMAF	13.90
4225	DRB1*11:46	B2RH54	164	178	LKIKRVHARMAFTEI	15.51
4226	DRB1*11:46	B2RH54	195	209	EKIYGLIAKKQSNLF	21.59
4227	DRB1*11:46	B2RH54	196	210	KIYGLIAKKQSNLFG	23.42
4228	DRB1*11:46	B2RH54	160	174	ENDPLKIKRVHARMA	26.29
4229	DRB1*11:46	B2RH54	194	208	PEKIYGLIAKKQSNL	26.38
4230	DRB1*11:46	B2RH54	165	179	KIKRVHARMAFTEIK	26.61
4231	DRB1*11:46	B2RH54	100	114	TGAMELVGKTLAEVK	27.87
4232	DRB1*11:46	B2RH54	101	115	GAMELVGKTLAEVKA	33.03
4233	DRB1*11:46	B2RH54	137	151	KTIVLKAGKNYIGYS	37.73
4234	DRB1*11:46	B2RH54	136	150	PKTIVLKAGKNYIGY	39.41
4235	DRB1*11:46	B2RH54	193	207	VPEKIYGLIAKKQSN	40.69
4236	DRB1*11:46	B2RH54	99	113	NTGAMELVGKTLAEV	43.12
4237	DRB1*11:46	B2RH54	32	46	NATISVVLKTSNSNR	44.08
4238	DRB1*11:46	B2RH54	33	47	ATISVVLKTSNSNRA	45.18
4239	DRB1*11:46	B2RH54	197	211	IYGLIAKKQSNLFGA	47.42
4240	DRB1*11:46	B2RH57	357	371	TFENSLSFTVRIKGR	23.41
4241	DRB1*11:46	B2RH57	197	211	ITKVQILRNAKNSRL	25.16
4242	DRB1*11:46	B2RH57	358	372	FENSLSFTVRIKGRD	25.68
4243	DRB1*11:46	B2RH57	360	374	NSLSFTVRIKGRDGS	26.51
4244	DRB1*11:46	B2RH57	193	207	DVIKITKVQILRNAK	27.20
4245	DRB1*11:46	B2RH57	359	373	ENSLSFTVRIKGRDG	27.32
4246	DRB1*11:46	B2RH57	198	212	TKVQILRNAKNSRLL	28.19
4247	DRB1*11:46	B2RH57	192	206	SDVIKITKVQILRNA	28.23
4248	DRB1*11:46	B2RH57	194	208	VIKITKVQILRNAKN	28.35
4249	DRB1*11:46	B2RH57	196	210	KITKVQILRNAKNSR	28.50
4250	DRB1*11:46	B2RH57	195	209	IKITKVQILRNAKNS	30.73
4251	DRB1*11:46	B2RH57	361	375	SLSFTVRIKGRDGSR	31.29
4252	DRB1*11:46	B2RH57	168	182	VQANISLNRIA AKIT	31.66
4253	DRB1*11:46	B2RH57	169	183	QANISLNRIA AKITL	31.74

4254	DRB1*11:46	B2RH57	191	205	GSDVIKITKVQILRN	32.50
4255	DRB1*11:46	B2RH57	167	181	TVQANISLNRIAAKI	33.10
4256	DRB1*11:46	B2RH57	199	213	KVQILRNAKNSRLLE	36.75
4257	DRB1*11:46	B2RH57	400	414	GTTVYTIKVKALKPN	39.23
4258	DRB1*11:46	B2RH57	190	204	PGSDVIKITKVQILR	39.94
4259	DRB1*11:46	B2RH57	166	180	GTVQANISLNRIAAK	42.69
4260	DRB1*11:46	B2RH57	170	184	ANISLNRIAAKITLD	46.01
4261	DRB1*11:46	B2RH57	398	412	ADGTTVYTIKVKALK	47.90
4262	DRB1*11:46	B2RH57	401	415	TTVYTIKVKALKPNG	48.85
4263	DRB1*11:46	B2RH57	399	413	DGTTVYTIKVKALKP	48.99
4264	DRB1*11:46	B2RH58	260	274	RPEFVMMLKLKKTGT	9.57
4265	DRB1*11:46	B2RH58	261	275	PEFVMMLKLKKTGTD	10.41
4266	DRB1*11:46	B2RH58	259	273	GRPEFVMMLKLKKTG	10.54
4267	DRB1*11:46	B2RH58	258	272	EGRPEFVMMLKLKKT	11.46
4268	DRB1*11:46	B2RH58	262	276	EFVMMLKLKKTGTDD	12.56
4269	DRB1*11:46	B2RH58	257	271	NEGRPEFVMMLKLKK	16.52
4270	DRB1*11:46	B2RH58	177	191	SIELKRVAAKLRLKK	17.59
4271	DRB1*11:46	B2RH58	178	192	IELKRVAAKLRLKKP	18.70
4272	DRB1*11:46	B2RH58	175	189	LGSIELKRVAAKLRL	19.37
4273	DRB1*11:46	B2RH58	179	193	ELKRVAAKLRLKKPV	19.62
4274	DRB1*11:46	B2RH58	180	194	LKRVAAKLRLKKPVL	19.91
4275	DRB1*11:46	B2RH58	263	277	FVMMLKLKKTGTDDN	20.05
4276	DRB1*11:46	B2RH58	176	190	GSIELKRVAAKLRLK	20.38
4277	DRB1*11:46	B2RH58	174	188	QLGSIELKRVAAKLR	22.18
4278	DRB1*11:46	B2RH58	656	670	VKNDRFVKSARKLKK	25.71
4279	DRB1*11:46	B2RH58	181	195	KRVAAKLRLKKPVLN	26.55
4280	DRB1*11:46	B2RH58	597	611	RAEIQLVDKLQREQA	26.69
4281	DRB1*11:46	B2RH58	182	196	RVAAKLRLKKPVLNI	27.28
4282	DRB1*11:46	B2RH58	552	566	LNPLRLIYHSNQQR	28.81
4283	DRB1*11:46	B2RH58	596	610	TRAEIQLVDKLQREQ	32.40
4284	DRB1*11:46	B2RH58	183	197	VAAKLRLKKPVLNIS	32.72
4285	DRB1*11:46	B2RH58	630	644	KAIKILLPTASGNAT	33.24
4286	DRB1*11:46	B2RH58	173	187	KQLGSIELKRVAAKL	33.63
4287	DRB1*11:46	B2RH58	598	612	AEIQLVDKLQREQAG	34.65
4288	DRB1*11:46	B2RH58	595	609	PTRAEIQLVDKLQRE	35.29
4289	DRB1*11:46	B2RH58	629	643	DKAIKILLPTASGNA	37.92
4290	DRB1*11:46	B2RH58	551	565	TLNPLRLIYHSNQQN	38.27
4291	DRB1*11:46	B2RH58	599	613	EIQLVDKLQREQAGV	39.72
4292	DRB1*11:46	B2RH58	550	564	YTLNPLRLIYHSNQQ	39.89
4293	DRB1*11:46	B2RH58	410	424	KIKVRSILPINNIPK	42.52
4294	DRB1*11:46	B2RH58	553	567	NPLRLIYHSNQQNRY	42.62
4295	DRB1*11:46	B2RH58	431	445	KNSIGFEKKIKIRQN	43.05
4296	DRB1*11:46	B2RH58	184	198	AAKLRLKKPVLNISR	44.36

4297	DRB1*11:46	B2RH58	408	422	TKKIKVRSILPINNI	45.16
4298	DRB1*11:46	B2RH58	430	444	IKNSIGFEKKIKIRQ	47.61
4299	DRB1*11:46	B2RH58	628	642	PDKAIKILLPTASGN	48.01
4300	DRB1*11:46	B2RH58	409	423	KKIKVRSILPINNIP	49.73
4301	DRB1*11:46	B2RH59	287	301	HFYKMILKKAKAPGR	13.89
4302	DRB1*11:46	B2RH59	154	168	GQIQLLRNMAKFSL	14.39
4303	DRB1*11:46	B2RH59	155	169	QIQLLRNMAKFSLSV	14.46
4304	DRB1*11:46	B2RH59	156	170	IQLLRNMAKFSLSVT	15.18
4305	DRB1*11:46	B2RH59	153	167	LGQIQLLRNMAKFSL	15.70
4306	DRB1*11:46	B2RH59	288	302	FYKMILKKAKAPGRP	16.13
4307	DRB1*11:46	B2RH59	286	300	NHFYKMILKKAKAPG	16.56
4308	DRB1*11:46	B2RH59	285	299	RNHFYKMILKKAKAP	17.73
4309	DRB1*11:46	B2RH59	284	298	TRNHFYKMILKKAKA	18.04
4310	DRB1*11:46	B2RH59	152	166	NLGQIQLLRNMAKFS	18.06
4311	DRB1*11:46	B2RH59	157	171	QLLRNMAKFSLSVTP	20.51
4312	DRB1*11:46	B2RH59	151	165	QNLGQIQLLRNMAKF	22.60
4313	DRB1*11:46	B2RH59	289	303	YKMILKKAKAPGRPT	24.04
4314	DRB1*11:46	B2RH59	133	147	LETIRMWARISYPSI	24.90
4315	DRB1*11:46	B2RH59	283	297	ITRNHFYKMILKKAK	28.71
4316	DRB1*11:46	B2RH59	134	148	ETIRMWARISYPSIA	29.81
4317	DRB1*11:46	B2RH59	132	146	DLETIRMWARISYPS	29.94
4318	DRB1*11:46	B2RH59	131	145	DDLETIRMWARISYP	35.41
4319	DRB1*11:46	B2RH59	150	164	NQNLGQIQLLRNMAK	36.78
4320	DRB1*11:46	B2RH59	158	172	LLRNMAKFSLSVTPP	38.82
4321	DRB1*11:46	B2RH59	135	149	TIRMWARISYPSIAP	40.19
4322	DRB1*11:46	B2RH59	249	263	GITCLILKARYNLPN	40.74
4323	DRB1*11:46	B2RH59	248	262	AGITCLILKARYNLP	41.19
4324	DRB1*11:46	B2RH59	290	304	KMILKKAKAPGRPTL	43.05
4325	DRB1*11:46	B2RH59	422	436	KRSVTVLVREKYQYV	46.29
4326	DRB1*11:46	B2RH59	250	264	ITCLILKARYNLPNA	48.34
4327	DRB1*11:46	B2RH59	247	261	GAGITCLILKARYNL	49.68
4328	DRB1*11:46	B2RHG4	135	149	SDLQTVKRTTAMPWS	39.64
4329	DRB1*11:46	B2RHG4	134	148	ESDLQTVKRTTAMPW	40.47
4330	DRB1*11:46	B2RHG4	174	188	NVPLVRAIAKVELNI	45.05
4331	DRB1*11:46	B2RHG4	170	184	RLLDNVPLVRAIAKV	46.07
4332	DRB1*11:46	B2RHG4	175	189	VPLVRAIAKVELNIS	48.20
4333	DRB1*11:46	B2RHG4	173	187	DNVPLVRAIAKVELN	48.57
4334	DRB1*11:46	B2RHG4	192	206	EKFQIVPIIVNGSLS	49.12
4335	DRB1*11:46	B2RHG4	193	207	KFQIVPIIVNGSLSE	49.82
4336	DRB1*11:49	A0PA81	33	47	RPFRLTVRAWDADMQ	30.44
4337	DRB1*11:49	A0PA81	30	44	DCPRPFRLTVRAWDA	34.41
4338	DRB1*11:49	A0PA81	32	46	PRPFRLTVRAWDADM	35.97
4339	DRB1*11:49	A0PA81	166	180	TAQVHIIIRGYQEWL	41.46

4340	DRB1*11:49	A0PA81	31	45	CPRPFRLTVRAWDAD	44.40
4341	DRB1*11:49	A0PA81	165	179	RTAQVHIIIRGYQEW	48.52
4342	DRB1*11:49	A0PA81	167	181	AQVHIIIRGYQEWLE	49.34
4343	DRB1*11:49	B2RH54	196	210	KIYGLIAKKQSNLFG	12.76
4344	DRB1*11:49	B2RH54	195	209	EKIYGLIAKKQSNLF	13.69
4345	DRB1*11:49	B2RH54	194	208	PEKIYGLIAKKQSNL	17.89
4346	DRB1*11:49	B2RH54	163	177	PLKIKRVHARMAFTE	26.32
4347	DRB1*11:49	B2RH54	162	176	DPLKIKRVHARMAFT	27.34
4348	DRB1*11:49	B2RH54	193	207	VPEKIYGLIAKKQSN	27.53
4349	DRB1*11:49	B2RH54	197	211	IYGLIAKKQSNLFGA	28.64
4350	DRB1*11:49	B2RH54	161	175	NDPLKIKRVHARMAF	34.05
4351	DRB1*11:49	B2RH54	164	178	LKIKRVHARMAFTEI	34.08
4352	DRB1*11:49	B2RH54	172	186	RMAFTEIKVQMSAAY	35.85
4353	DRB1*11:49	B2RH54	192	206	FVPEKIYGLIAKKQS	42.80
4354	DRB1*11:49	B2RH54	171	185	ARMAFTEIKVQMSAA	44.66
4355	DRB1*11:49	B2RH58	258	272	EGRPEFVMMLKLKKT	8.89
4356	DRB1*11:49	B2RH58	259	273	GRPEFVMMLKLKKTG	9.36
4357	DRB1*11:49	B2RH58	260	274	RPEFVMMLKLKKTGT	9.39
4358	DRB1*11:49	B2RH58	261	275	PEFVMMLKLKKTGTD	10.44
4359	DRB1*11:49	B2RH58	257	271	NEGRPEFVMMLKLKK	11.52
4360	DRB1*11:49	B2RH58	262	276	EFVMMLKLKKTGTDD	12.54
4361	DRB1*11:49	B2RH58	656	670	VKNDRFVKSARKLKK	23.55
4362	DRB1*11:49	B2RH58	263	277	FVMMLKLKKTGTDDN	30.54
4363	DRB1*11:49	B2RH58	177	191	SIELKRVAAKLRLKK	40.98
4364	DRB1*11:49	B2RH58	175	189	LGSIELKRVAAKLRL	45.78
4365	DRB1*11:49	B2RH58	176	190	GSIELKRVAAKLRLK	45.96
4366	DRB1*11:49	B2RH58	178	192	IELKRVAAKLRLKKP	48.99
4367	DRB1*11:49	B2RH59	284	298	TRNHFYKMILKKAKA	12.67
4368	DRB1*11:49	B2RH59	285	299	RNHFYKMILKKAKAP	13.51
4369	DRB1*11:49	B2RH59	287	301	HFYKMILKKAKAPGR	15.15
4370	DRB1*11:49	B2RH59	286	300	NHFYKMILKKAKAPG	16.24
4371	DRB1*11:49	B2RH59	288	302	FYKMILKKAKAPGRP	18.61
4372	DRB1*11:49	B2RH59	283	297	ITRNHFYKMILKKAK	19.50
4373	DRB1*11:49	B2RH59	155	169	QIQLLRNMAKFSLSV	37.57
4374	DRB1*11:49	B2RH59	154	168	GQIQLLRNMAKFSLS	38.33
4375	DRB1*11:49	B2RH59	153	167	LGQIQLLRNMAKFSL	38.45
4376	DRB1*11:49	B2RH59	156	170	IQLLRNMAKFSLSVT	38.49
4377	DRB1*11:49	B2RH59	503	517	KTLYKYVLTTPQNK	41.30
4378	DRB1*11:49	B2RH59	152	166	NLGQIQLLRNMAKFS	44.67
4379	DRB1*11:49	B2RH59	431	445	EKYQYVFFKANTSSA	45.01
4380	DRB1*11:49	B2RH59	289	303	YKMILKKAKAPGRPT	45.42
4381	DRB1*11:49	B2RH59	432	446	KYQYVFFKANTSSAE	45.72
4382	DRB1*11:54	B2RH58	260	274	RPEFVMMLKLKKTGT	47.28

4383	DRB1*11:58	A0PA81	166	180	TAQVHIIIRGYQEWL	16.07
4384	DRB1*11:58	A0PA81	165	179	RTAQVHIIIRGYQEW	16.46
4385	DRB1*11:58	A0PA81	167	181	AQVHIIIRGYQEWLE	17.83
4386	DRB1*11:58	A0PA81	164	178	RRTAQVHIIIRGYQE	18.89
4387	DRB1*11:58	A0PA81	163	177	YRRTAQVHIIIRGYQ	25.80
4388	DRB1*11:58	A0PA81	168	182	QVHIIIRGYQEWLEA	27.49
4389	DRB1*11:58	A0PA81	224	238	NGDFISPIIRVYPTL	29.89
4390	DRB1*11:58	A0PA81	225	239	GDFISPIIRVYPTLD	33.54
4391	DRB1*11:58	A0PA81	223	237	QNGDFISPIIRVYPT	45.43
4392	DRB1*11:58	A0PA81	226	240	DFISPIIRVYPTLDT	47.06
4393	DRB1*11:58	B2RH54	162	176	DPLKIKRVHARMAFT	12.37
4394	DRB1*11:58	B2RH54	163	177	PLKIKRVHARMAFTE	12.77
4395	DRB1*11:58	B2RH54	161	175	NDPLKIKRVHARMAF	13.90
4396	DRB1*11:58	B2RH54	164	178	LKIKRVHARMAFTEI	15.51
4397	DRB1*11:58	B2RH54	195	209	EKIYGLIAKKQSNLF	21.59
4398	DRB1*11:58	B2RH54	196	210	KIYGLIAKKQSNLFG	23.42
4399	DRB1*11:58	B2RH54	160	174	ENDPLKIKRVHARMA	26.29
4400	DRB1*11:58	B2RH54	194	208	PEKIYGLIAKKQSNL	26.38
4401	DRB1*11:58	B2RH54	165	179	KIKRVHARMAFTEIK	26.61
4402	DRB1*11:58	B2RH54	100	114	TGAMELVGKTLAEVK	27.87
4403	DRB1*11:58	B2RH54	101	115	GAMELVGKTLAEVKA	33.03
4404	DRB1*11:58	B2RH54	137	151	KTIVLKAGKNYIGYS	37.73
4405	DRB1*11:58	B2RH54	136	150	PKTIVLKAGKNYIGY	39.41
4406	DRB1*11:58	B2RH54	193	207	VPEKIYGLIAKKQSN	40.69
4407	DRB1*11:58	B2RH54	99	113	NTGAMELVGKTLAEV	43.12
4408	DRB1*11:58	B2RH54	32	46	NATISVVLKTSNSNR	44.08
4409	DRB1*11:58	B2RH54	33	47	ATISVVLKTSNSNRA	45.18
4410	DRB1*11:58	B2RH54	197	211	IYGLIAKKQSNLFGA	47.42
4411	DRB1*11:58	B2RH57	357	371	TFENSLSFTVRIKGR	23.41
4412	DRB1*11:58	B2RH57	197	211	ITKVQILRNAKNSRL	25.16
4413	DRB1*11:58	B2RH57	358	372	FENSLSFTVRIKGRD	25.68
4414	DRB1*11:58	B2RH57	360	374	NSLSFTVRIKGRDGS	26.51
4415	DRB1*11:58	B2RH57	193	207	DVIKITKVQILRNAK	27.20
4416	DRB1*11:58	B2RH57	359	373	ENSLSFTVRIKGRDG	27.32
4417	DRB1*11:58	B2RH57	198	212	TKVQILRNAKNSRLL	28.19
4418	DRB1*11:58	B2RH57	192	206	SDVIKITKVQILRNA	28.23
4419	DRB1*11:58	B2RH57	194	208	VIKITKVQILRNAKN	28.35
4420	DRB1*11:58	B2RH57	196	210	KITKVQILRNAKNSR	28.50
4421	DRB1*11:58	B2RH57	195	209	IKITKVQILRNAKNS	30.73
4422	DRB1*11:58	B2RH57	361	375	SLSFTVRIKGRDGSR	31.29
4423	DRB1*11:58	B2RH57	168	182	VQANISLNRIA AKIT	31.66
4424	DRB1*11:58	B2RH57	169	183	QANISLNRIA AKITL	31.74
4425	DRB1*11:58	B2RH57	191	205	GSDVIKITKVQILRN	32.50

4426	DRB1*11:58	B2RH57	167	181	TVQANISLNRIAAKI	33.10
4427	DRB1*11:58	B2RH57	199	213	KVQILRNAKNSRLLE	36.75
4428	DRB1*11:58	B2RH57	400	414	GTTVYTIKVKALKPN	39.23
4429	DRB1*11:58	B2RH57	190	204	PGSDVIKITYKVQILR	39.94
4430	DRB1*11:58	B2RH57	166	180	GTVQANISLNRIAAK	42.69
4431	DRB1*11:58	B2RH57	170	184	ANISLNRIAAKITLD	46.01
4432	DRB1*11:58	B2RH57	398	412	ADGTTVYTIKVKALK	47.90
4433	DRB1*11:58	B2RH57	401	415	TTVYTIKVKALKPNG	48.85
4434	DRB1*11:58	B2RH57	399	413	DGTTVYTIKVKALKP	48.99
4435	DRB1*11:58	B2RH58	260	274	RPEFVMMLKLKKTGT	9.57
4436	DRB1*11:58	B2RH58	261	275	PEFVMMLKLKKTGTD	10.41
4437	DRB1*11:58	B2RH58	259	273	GRPEFVMMLKLKKTG	10.54
4438	DRB1*11:58	B2RH58	258	272	EGRPEFVMMLKLKKT	11.46
4439	DRB1*11:58	B2RH58	262	276	EFVMMLKLKKTGTDD	12.56
4440	DRB1*11:58	B2RH58	257	271	NEGRPEFVMMLKLKK	16.52
4441	DRB1*11:58	B2RH58	177	191	SIELKRVAAKLRLKK	17.59
4442	DRB1*11:58	B2RH58	178	192	IELKRVAAKLRLKKP	18.70
4443	DRB1*11:58	B2RH58	175	189	LGSIELKRVAAKLRL	19.37
4444	DRB1*11:58	B2RH58	179	193	ELKRVAAKLRLKKPV	19.62
4445	DRB1*11:58	B2RH58	180	194	LKRVAAKLRLKKPVL	19.91
4446	DRB1*11:58	B2RH58	263	277	FVMMLKLKKTGTDDN	20.05
4447	DRB1*11:58	B2RH58	176	190	GSIELKRVAAKLRLK	20.38
4448	DRB1*11:58	B2RH58	174	188	QLGSIELKRVAAKLR	22.18
4449	DRB1*11:58	B2RH58	656	670	VKNDRFVKSARKLKK	25.71
4450	DRB1*11:58	B2RH58	181	195	KRVAAKLRLKKPVLN	26.55
4451	DRB1*11:58	B2RH58	597	611	RAEIQLVDKLQREQA	26.69
4452	DRB1*11:58	B2RH58	182	196	RVAAKLRLKKPVLNI	27.28
4453	DRB1*11:58	B2RH58	552	566	LNPLRLIYHSNQNR	28.81
4454	DRB1*11:58	B2RH58	596	610	TRAEIQLVDKLQREQ	32.40
4455	DRB1*11:58	B2RH58	183	197	VAAKLRLKKPVLNIS	32.72
4456	DRB1*11:58	B2RH58	630	644	KAIKILLPTASGNAT	33.24
4457	DRB1*11:58	B2RH58	173	187	KQLGSIELKRVAAKL	33.63
4458	DRB1*11:58	B2RH58	598	612	AEIQLVDKLQREQAG	34.65
4459	DRB1*11:58	B2RH58	595	609	PTRAETIQLVDKLQRE	35.29
4460	DRB1*11:58	B2RH58	629	643	DKAIKILLPTASGNA	37.92
4461	DRB1*11:58	B2RH58	551	565	TLNPLRLIYHSNQQN	38.27
4462	DRB1*11:58	B2RH58	599	613	EIQLVDKLQREQAGV	39.72
4463	DRB1*11:58	B2RH58	550	564	YTLNPLRLIYHSNQQ	39.89
4464	DRB1*11:58	B2RH58	410	424	KIKVRSILPINNIPK	42.52
4465	DRB1*11:58	B2RH58	553	567	NPLRLIYHSNQQNRY	42.62
4466	DRB1*11:58	B2RH58	431	445	KNSIGFEKKIKIRQN	43.05
4467	DRB1*11:58	B2RH58	184	198	AAKLRLKKPVLNISD	44.36
4468	DRB1*11:58	B2RH58	408	422	TKKIKVRSILPINNI	45.16

4469	DRB1*11:58	B2RH58	430	444	IKNSIGFEKKIKIRQ	47.61
4470	DRB1*11:58	B2RH58	628	642	PDKAIKILLPTASGN	48.01
4471	DRB1*11:58	B2RH58	409	423	KKIKVRSILPINNIP	49.73
4472	DRB1*11:58	B2RH59	287	301	HFYKMILKKAKAPGR	13.89
4473	DRB1*11:58	B2RH59	154	168	GQIQLLRNMAKFSL	14.39
4474	DRB1*11:58	B2RH59	155	169	QIQLLRNMAKFSLSV	14.46
4475	DRB1*11:58	B2RH59	156	170	IQLLRNMAKFSLSVT	15.18
4476	DRB1*11:58	B2RH59	153	167	LGQIQLLRNMAKFSL	15.70
4477	DRB1*11:58	B2RH59	288	302	FYKMILKKAKAPGRP	16.13
4478	DRB1*11:58	B2RH59	286	300	NHFYKMILKKAKAPG	16.56
4479	DRB1*11:58	B2RH59	285	299	RNHFYKMILKKAKAP	17.73
4480	DRB1*11:58	B2RH59	284	298	TRNHFYKMILKKAKA	18.04
4481	DRB1*11:58	B2RH59	152	166	NLGQIQLLRNMAKFS	18.06
4482	DRB1*11:58	B2RH59	157	171	QLLRNMAKFSLSVTP	20.51
4483	DRB1*11:58	B2RH59	151	165	QNLGQIQLLRNMAKF	22.60
4484	DRB1*11:58	B2RH59	289	303	YKMILKKAKAPGRPT	24.04
4485	DRB1*11:58	B2RH59	133	147	LETIRMWARISYPSI	24.90
4486	DRB1*11:58	B2RH59	283	297	ITRNHFYKMILKKAK	28.71
4487	DRB1*11:58	B2RH59	134	148	ETIRMWARISYPSIA	29.81
4488	DRB1*11:58	B2RH59	132	146	DLETIRMWARISYPS	29.94
4489	DRB1*11:58	B2RH59	131	145	DDLETIRMWARISYP	35.41
4490	DRB1*11:58	B2RH59	150	164	NQNLGQIQLLRNMAK	36.78
4491	DRB1*11:58	B2RH59	158	172	LLRNMAKFSLSVTPP	38.82
4492	DRB1*11:58	B2RH59	135	149	TIRMWARISYPSIAP	40.19
4493	DRB1*11:58	B2RH59	249	263	GITCLILKARYNLPN	40.74
4494	DRB1*11:58	B2RH59	248	262	AGITCLILKARYNLP	41.19
4495	DRB1*11:58	B2RH59	290	304	KMILKKAKAPGRPTL	43.05
4496	DRB1*11:58	B2RH59	422	436	KRSVTVLVREKYQYV	46.29
4497	DRB1*11:58	B2RH59	250	264	ITCLILKARYNLPNA	48.34
4498	DRB1*11:58	B2RH59	247	261	GAGITCLILKARYNL	49.68
4499	DRB1*11:58	B2RHG4	135	149	SDLQTVKRRTTAMPWS	39.64
4500	DRB1*11:58	B2RHG4	134	148	ESDLQTVKRRTTAMPW	40.47
4501	DRB1*11:58	B2RHG4	174	188	NVPLVRAIAKVELNI	45.05
4502	DRB1*11:58	B2RHG4	170	184	RLLDNVPLVRAIAKV	46.07
4503	DRB1*11:58	B2RHG4	175	189	VPLVRAIAKVELNIS	48.20
4504	DRB1*11:58	B2RHG4	173	187	DNVPLVRAIAKVELN	48.57
4505	DRB1*11:58	B2RHG4	192	206	EKFQIVPIIVNGSLS	49.12
4506	DRB1*11:58	B2RHG4	193	207	KFQIVPIIVNGSLSE	49.82
4507	DRB1*11:62	A0PA81	33	47	RPFRLTVRAWDADMQ	30.44
4508	DRB1*11:62	A0PA81	30	44	DCPRPFRLTVRAWDA	34.41
4509	DRB1*11:62	A0PA81	32	46	PRPFRLTVRAWDADM	35.97
4510	DRB1*11:62	A0PA81	166	180	TAQVHIIIRGYQEWL	41.46
4511	DRB1*11:62	A0PA81	31	45	CPRPFRLTVRAWDAD	44.40

4512	DRB1*11:62	AOPA81	165	179	RTAQVHIIIRGYQEW	48.52
4513	DRB1*11:62	AOPA81	167	181	AQVHIIIRGYQEWLE	49.34
4514	DRB1*11:62	B2RH54	196	210	KIYGLIAKKQSNLFG	12.76
4515	DRB1*11:62	B2RH54	195	209	EKIYGLIAKKQSNLF	13.69
4516	DRB1*11:62	B2RH54	194	208	PEKIYGLIAKKQSNL	17.89
4517	DRB1*11:62	B2RH54	163	177	PLKIKRVHARMAFTE	26.32
4518	DRB1*11:62	B2RH54	162	176	DPLKIKRVHARMAFT	27.34
4519	DRB1*11:62	B2RH54	193	207	VPEKIYGLIAKKQSN	27.53
4520	DRB1*11:62	B2RH54	197	211	IYGLIAKKQSNLFGA	28.64
4521	DRB1*11:62	B2RH54	161	175	NDPLKIKRVHARMAF	34.05
4522	DRB1*11:62	B2RH54	164	178	LKIKRVHARMAFTEI	34.08
4523	DRB1*11:62	B2RH54	172	186	RMAFTEIKVQMSAAY	35.85
4524	DRB1*11:62	B2RH54	192	206	FVPEKIYGLIAKKQS	42.80
4525	DRB1*11:62	B2RH54	171	185	ARMAFTEIKVQMSAA	44.66
4526	DRB1*11:62	B2RH58	258	272	EGRPEFVMMLKLKKT	8.89
4527	DRB1*11:62	B2RH58	259	273	GRPEFVMMLKLKKTG	9.36
4528	DRB1*11:62	B2RH58	260	274	RPEFVMMLKLKKTGT	9.39
4529	DRB1*11:62	B2RH58	261	275	PEFVMMLKLKKTGTD	10.44
4530	DRB1*11:62	B2RH58	257	271	NEGRPEFVMMLKLKK	11.52
4531	DRB1*11:62	B2RH58	262	276	EFVMMLKLKKTGTDD	12.54
4532	DRB1*11:62	B2RH58	656	670	VKNDRFVKSARLKK	23.55
4533	DRB1*11:62	B2RH58	263	277	FVMMLKLKKTGTDDN	30.54
4534	DRB1*11:62	B2RH58	177	191	SIELKRVAAKLRLKK	40.98
4535	DRB1*11:62	B2RH58	175	189	LGSIELKRVAAKLRL	45.78
4536	DRB1*11:62	B2RH58	176	190	GSIELKRVAAKLRLK	45.96
4537	DRB1*11:62	B2RH58	178	192	IELKRVAAKLRLKKP	48.99
4538	DRB1*11:62	B2RH59	284	298	TRNHFYKMILKKAKA	12.67
4539	DRB1*11:62	B2RH59	285	299	RNHFYKMILKKAKAP	13.51
4540	DRB1*11:62	B2RH59	287	301	HFYKMILKKAKAPGR	15.15
4541	DRB1*11:62	B2RH59	286	300	NHFYKMILKKAKAPG	16.24
4542	DRB1*11:62	B2RH59	288	302	FYKMILKKAKAPGRP	18.61
4543	DRB1*11:62	B2RH59	283	297	ITRNHFYKMILKKAK	19.50
4544	DRB1*11:62	B2RH59	155	169	QIQLLRNMAKFSLSV	37.57
4545	DRB1*11:62	B2RH59	154	168	GQIQLLRNMAKFSLS	38.33
4546	DRB1*11:62	B2RH59	153	167	LGQIQLLRNMAKFSL	38.45
4547	DRB1*11:62	B2RH59	156	170	IQLLRNMAKFSLSVT	38.49
4548	DRB1*11:62	B2RH59	503	517	KTLYKYVLTTPQNK	41.30
4549	DRB1*11:62	B2RH59	152	166	NLGQIQLLRNMAKFS	44.67
4550	DRB1*11:62	B2RH59	431	445	EKYQYVFFKANTSSA	45.01
4551	DRB1*11:62	B2RH59	289	303	YKMILKKAKAPGRPT	45.42
4552	DRB1*11:62	B2RH59	432	446	KYQYVFFKANTSSAE	45.72
4553	DRB1*11:65	B2RH54	163	177	PLKIKRVHARMAFTE	11.10
4554	DRB1*11:65	B2RH54	162	176	DPLKIKRVHARMAFT	11.87

4555	DRB1*11:65	B2RH54	161	175	NDPLKIKRVHARMAF	13.88
4556	DRB1*11:65	B2RH54	164	178	LKIKRVHARMAFTEI	14.61
4557	DRB1*11:65	B2RH54	137	151	KTIVLKAGKNYIGYS	23.98
4558	DRB1*11:65	B2RH54	160	174	ENDPLKIKRVHARMA	24.77
4559	DRB1*11:65	B2RH54	165	179	KIKRVHARMAFTEIK	25.28
4560	DRB1*11:65	B2RH54	136	150	PKTIVLKAGKNYIGY	26.21
4561	DRB1*11:65	B2RH54	175	189	FTEIKVQMSAAYDNI	27.62
4562	DRB1*11:65	B2RH54	174	188	AFTEIKVQMSAAYDN	31.52
4563	DRB1*11:65	B2RH54	197	211	IYGLIAKKQSNLFGA	33.57
4564	DRB1*11:65	B2RH54	138	152	TIVLKAGKNYIGYSG	34.66
4565	DRB1*11:65	B2RH54	173	187	MAFTEIKVQMSAAYD	34.72
4566	DRB1*11:65	B2RH54	135	149	EPKTIVLKAGKNYIG	36.11
4567	DRB1*11:65	B2RH54	198	212	YGLIAKKQSNLFGAT	36.78
4568	DRB1*11:65	B2RH54	176	190	TEIKVQMSAAYDNIY	37.49
4569	DRB1*11:65	B2RH54	196	210	KIYGLIAKKQSNLFG	40.94
4570	DRB1*11:65	B2RH54	134	148	AEPKTIVLKAGKNYI	41.94
4571	DRB1*11:65	B2RH54	172	186	RMAFTEIKVQMSAAY	43.55
4572	DRB1*11:65	B2RH54	34	48	TISVVLKTSNSNRAF	49.00
4573	DRB1*11:65	B2RH57	198	212	TKVQILRNAKNSRLL	18.96
4574	DRB1*11:65	B2RH57	199	213	KVQILRNAKNSRLL	20.12
4575	DRB1*11:65	B2RH57	169	183	QANISLNRIA AKITL	24.07
4576	DRB1*11:65	B2RH57	200	214	VQILRNAKNSRLL	24.20
4577	DRB1*11:65	B2RH57	197	211	ITKVQILRNAKNSRL	25.65
4578	DRB1*11:65	B2RH57	192	206	SDVIKITKVQILRNA	27.67
4579	DRB1*11:65	B2RH57	167	181	TVQANISLNRIA AKI	30.00
4580	DRB1*11:65	B2RH57	168	182	VQANISLNRIA AKIT	30.17
4581	DRB1*11:65	B2RH57	63	77	GEDLIKKVRIFVFRE	30.28
4582	DRB1*11:65	B2RH57	170	184	ANISLNRIA AKITLD	30.33
4583	DRB1*11:65	B2RH57	414	428	NGIGIQRRTNLFFTV	30.35
4584	DRB1*11:65	B2RH57	191	205	GSDVIKITKVQILRN	31.19
4585	DRB1*11:65	B2RH57	193	207	DVIKITKVQILRNAK	31.39
4586	DRB1*11:65	B2RH57	62	76	SGEDLIKKVRIFVFR	31.50
4587	DRB1*11:65	B2RH57	237	251	SAQSIIQASAPLYVY	32.06
4588	DRB1*11:65	B2RH57	238	252	AQSIIQASAPLYVYE	32.07
4589	DRB1*11:65	B2RH57	64	78	EDLIKKVRIFVFR	33.29
4590	DRB1*11:65	B2RH57	239	253	QSIIQASAPLYVYEN	34.38
4591	DRB1*11:65	B2RH57	293	307	HHYSIRRNHHYKLDG	34.84
4592	DRB1*11:65	B2RH57	294	308	HYSIRRNHHYKLDGT	35.11
4593	DRB1*11:65	B2RH57	413	427	PNGIGIQRRTNLFFT	35.50
4594	DRB1*11:65	B2RH57	292	306	NHHYSIRRNHHYKLD	35.61
4595	DRB1*11:65	B2RH57	166	180	GTVQANISLNRIA AK	35.62
4596	DRB1*11:65	B2RH57	190	204	PGSDVIKITKVQILR	36.00
4597	DRB1*11:65	B2RH57	171	185	NISLNRIA AKITLDI	37.93

4598	DRB1*11:65	B2RH57	194	208	VIKITKVQILRNAKN	38.83
4599	DRB1*11:65	B2RH57	415	429	GIGIQRRTNLFFTVD	39.31
4600	DRB1*11:65	B2RH57	295	309	YSIRRNHHYKLDGTI	40.41
4601	DRB1*11:65	B2RH57	201	215	QILRNAKNSRLLEGT	40.56
4602	DRB1*11:65	B2RH57	412	426	KPNGIGIQRRTNLFF	41.29
4603	DRB1*11:65	B2RH57	172	186	ISLNRIA AKITLDIK	43.49
4604	DRB1*11:65	B2RH57	65	79	DLIKKVRI FVFREGL	44.10
4605	DRB1*11:65	B2RH57	196	210	KITKVQILRNAKNSR	44.21
4606	DRB1*11:65	B2RH57	291	305	ANHHYSIRRNHHYKL	44.90
4607	DRB1*11:65	B2RH57	165	179	QGTVQANISLNRIAA	45.10
4608	DRB1*11:65	B2RH58	177	191	SIELKRVA AKLRLKK	12.16
4609	DRB1*11:65	B2RH58	178	192	IELKRVA AKLRLKKP	13.95
4610	DRB1*11:65	B2RH58	176	190	GSIELKRVA AKLRLK	15.10
4611	DRB1*11:65	B2RH58	175	189	LGSIELKRVA AKLRL	16.97
4612	DRB1*11:65	B2RH58	179	193	ELKRVA AKLRLKKPV	18.06
4613	DRB1*11:65	B2RH58	180	194	LKRVA AKLRLKKPVL	19.57
4614	DRB1*11:65	B2RH58	438	452	KKIKIRQNPSQFIIN	21.41
4615	DRB1*11:65	B2RH58	437	451	EKKIKIRQNPSQFII	21.95
4616	DRB1*11:65	B2RH58	439	453	KIKIRQNPSQFIINT	25.30
4617	DRB1*11:65	B2RH58	182	196	RVA AKLRLKKPVLNI	25.62
4618	DRB1*11:65	B2RH58	408	422	TKKIKVRSILPINNI	25.62
4619	DRB1*11:65	B2RH58	181	195	KRVA AKLRLKKPVLN	26.27
4620	DRB1*11:65	B2RH58	409	423	KKIKVRSILPINNIP	29.13
4621	DRB1*11:65	B2RH58	174	188	QLGSIELKRVA AKLR	29.36
4622	DRB1*11:65	B2RH58	597	611	RAEIQLV DKLQREQA	30.34
4623	DRB1*11:65	B2RH58	407	421	NTKKIKVRSILPINN	31.11
4624	DRB1*11:65	B2RH58	183	197	VAAKLRLKKPVLNIS	32.53
4625	DRB1*11:65	B2RH58	595	609	PTRA EIQLV DKLQRE	33.05
4626	DRB1*11:65	B2RH58	596	610	TRA EIQLV DKLQREQ	33.43
4627	DRB1*11:65	B2RH58	656	670	VKNDRFVKS AKRLKK	33.70
4628	DRB1*11:65	B2RH58	406	420	ANTKKIKVRSILPIN	33.96
4629	DRB1*11:65	B2RH58	410	424	KIKVRSILPINNIPK	34.17
4630	DRB1*11:65	B2RH58	598	612	AEIQLV DKLQREQAG	37.02
4631	DRB1*11:65	B2RH58	555	569	LRLIYHSNQ QNRYAL	38.59
4632	DRB1*11:65	B2RH58	436	450	FEKKIKIRQNPSQFI	39.92
4633	DRB1*11:65	B2RH58	260	274	RPEFVMMLKLKKTGT	41.36
4634	DRB1*11:65	B2RH58	413	427	VRSILPINNIPKDIS	42.12
4635	DRB1*11:65	B2RH58	594	608	LPTRA EIQLV DKLQR	42.47
4636	DRB1*11:65	B2RH58	412	426	KVRSILPINNIPKDI	43.77
4637	DRB1*11:65	B2RH58	599	613	EIQLV DKLQREQAGV	43.80
4638	DRB1*11:65	B2RH58	259	273	GRPEFVMMLKLKKTG	44.68
4639	DRB1*11:65	B2RH58	184	198	AAKLRLKKPVLNISD	45.59
4640	DRB1*11:65	B2RH58	554	568	PLRLIYHSNQ QNRYA	45.67

4641	DRB1*11:65	B2RH58	405	419	DANTKKIKVRSILPI	47.61
4642	DRB1*11:65	B2RH58	430	444	IKNSIGFEKKIKIRQ	48.19
4643	DRB1*11:65	B2RH58	258	272	EGRPEFVMMLKLKKT	48.74
4644	DRB1*11:65	B2RH58	411	425	IKVRSILPINNIPKD	49.06
4645	DRB1*11:65	B2RH59	133	147	LETIRMWARISYPSI	15.51
4646	DRB1*11:65	B2RH59	155	169	QIQLLRNMAKFSLSV	15.91
4647	DRB1*11:65	B2RH59	154	168	GQIQLLRNMAKFSL	16.43
4648	DRB1*11:65	B2RH59	134	148	ETIRMWARISYPSIA	16.63
4649	DRB1*11:65	B2RH59	135	149	TIRMWARISYPSIAP	17.19
4650	DRB1*11:65	B2RH59	132	146	DLETIRMWARISYPS	18.28
4651	DRB1*11:65	B2RH59	153	167	LGQIQLLRNMAKFSL	18.49
4652	DRB1*11:65	B2RH59	156	170	IQLLRNMAKFSLSVT	18.68
4653	DRB1*11:65	B2RH59	131	145	DDLETIRMWARISYP	20.16
4654	DRB1*11:65	B2RH59	130	144	ADDLETIRMWARISY	23.64
4655	DRB1*11:65	B2RH59	157	171	QLLRNMAKFSLSVTP	25.65
4656	DRB1*11:65	B2RH59	152	166	NLGQIQLLRNMAKFS	25.93
4657	DRB1*11:65	B2RH59	151	165	QNLGQIQLLRNMAKF	35.91
4658	DRB1*11:65	B2RH59	287	301	HFYKMILKKAKAPGR	36.10
4659	DRB1*11:65	B2RH59	288	302	FYKMILKKAKAPGRP	37.43
4660	DRB1*11:65	B2RH59	278	292	KVRYNITRNHFYKMI	38.50
4661	DRB1*11:65	B2RH59	277	291	NKVRYNITRNHFYKM	39.98
4662	DRB1*11:65	B2RH59	249	263	GITCLILKARYNLPN	42.37
4663	DRB1*11:65	B2RH59	248	262	AGITCLILKARYNLP	42.51
4664	DRB1*11:65	B2RH59	289	303	YKMILKKAKAPGRPT	44.40
4665	DRB1*11:65	B2RH59	276	290	TNKVRYNITRNHFYK	44.44
4666	DRB1*11:65	B2RH59	250	264	ITCLILKARYNLPNA	46.14
4667	DRB1*11:65	B2RH59	280	294	RYNITRNHFYKMILK	47.34
4668	DRB1*11:65	B2RH59	279	293	VRYNITRNHFYKMIL	47.66
4669	DRB1*11:65	B2RH59	290	304	KMILKKAKAPGRPTL	49.49
4670	DRB1*11:65	B2RH59	423	437	RSVTVLVREKYQYVF	49.77
4671	DRB1*11:65	B2RHG4	183	197	KVELNISLSEKFQIV	38.96
4672	DRB1*11:65	B2RHG4	185	199	ELNISLSEKFQIVPI	44.58
4673	DRB1*11:65	B2RHG4	168	182	ANRLLDNVPLVRAIA	46.80
4674	DRB1*11:65	B2RHG4	186	200	LNISLSEKFQIVPII	49.23
4675	DRB1*11:65	B2RHG4	169	183	NRLLDNVPLVRAIAK	49.76
4676	DRB1*11:74	A0PA81	33	47	RPFRLTVRAWDADMQ	30.44
4677	DRB1*11:74	A0PA81	30	44	DCPRPFRLTVRAWDA	34.41
4678	DRB1*11:74	A0PA81	32	46	PRPFRLTVRAWDADM	35.97
4679	DRB1*11:74	A0PA81	166	180	TAQVHIIIRGYQEWL	41.46
4680	DRB1*11:74	A0PA81	31	45	CPRPFRLTVRAWDAD	44.40
4681	DRB1*11:74	A0PA81	165	179	RTAQVHIIIRGYQEW	48.52
4682	DRB1*11:74	A0PA81	167	181	AQVHIIIRGYQEWLE	49.34
4683	DRB1*11:74	B2RH54	196	210	KIYGLIAKKQSNLFG	12.76

4684	DRB1*11:74	B2RH54	195	209	EKIYGLIAKKQSNLF	13.69
4685	DRB1*11:74	B2RH54	194	208	PEKIYGLIAKKQSNL	17.89
4686	DRB1*11:74	B2RH54	163	177	PLKIKRVHARMAFTE	26.32
4687	DRB1*11:74	B2RH54	162	176	DPLKIKRVHARMAFT	27.34
4688	DRB1*11:74	B2RH54	193	207	VPEKIYGLIAKKQSN	27.53
4689	DRB1*11:74	B2RH54	197	211	IYGLIAKKQSNLFGA	28.64
4690	DRB1*11:74	B2RH54	161	175	NDPLKIKRVHARMAF	34.05
4691	DRB1*11:74	B2RH54	164	178	LKIKRVHARMAFTEI	34.08
4692	DRB1*11:74	B2RH54	172	186	RMAFTEIKVQMSAAY	35.85
4693	DRB1*11:74	B2RH54	192	206	FVPEKIYGLIAKKQS	42.80
4694	DRB1*11:74	B2RH54	171	185	ARMAFTEIKVQMSAA	44.66
4695	DRB1*11:74	B2RH58	258	272	EGRPEFVMMLKLKKT	8.89
4696	DRB1*11:74	B2RH58	259	273	GRPEFVMMLKLKKTG	9.36
4697	DRB1*11:74	B2RH58	260	274	RPEFVMMLKLKKTGT	9.39
4698	DRB1*11:74	B2RH58	261	275	PEFVMMLKLKKTGTD	10.44
4699	DRB1*11:74	B2RH58	257	271	NEGRPEFVMMLKLKK	11.52
4700	DRB1*11:74	B2RH58	262	276	EFVMMLKLKKTGTDD	12.54
4701	DRB1*11:74	B2RH58	656	670	VKNDRFVKSARLKK	23.55
4702	DRB1*11:74	B2RH58	263	277	FVMMLKLKKTGTDDN	30.54
4703	DRB1*11:74	B2RH58	177	191	SIELKRVAAKLRLKK	40.98
4704	DRB1*11:74	B2RH58	175	189	LGSIELKRVAAKLRL	45.78
4705	DRB1*11:74	B2RH58	176	190	GSIELKRVAAKLRLK	45.96
4706	DRB1*11:74	B2RH58	178	192	IELKRVAAKLRLKKP	48.99
4707	DRB1*11:74	B2RH59	284	298	TRNHFYKMILKKAKA	12.67
4708	DRB1*11:74	B2RH59	285	299	RNHFYKMILKKAKAP	13.51
4709	DRB1*11:74	B2RH59	287	301	HFYKMILKKAKAPGR	15.15
4710	DRB1*11:74	B2RH59	286	300	NHFYKMILKKAKAPG	16.24
4711	DRB1*11:74	B2RH59	288	302	FYKMILKKAKAPGRP	18.61
4712	DRB1*11:74	B2RH59	283	297	ITRNHFYKMILKKAK	19.50
4713	DRB1*11:74	B2RH59	155	169	QIQLLRNMAKFSLSV	37.57
4714	DRB1*11:74	B2RH59	154	168	GQIQLLRNMAKFSLS	38.33
4715	DRB1*11:74	B2RH59	153	167	LGQIQLLRNMAKFSL	38.45
4716	DRB1*11:74	B2RH59	156	170	IQLLRNMAKFSLSVT	38.49
4717	DRB1*11:74	B2RH59	503	517	KTLYKYVLTTPQNK	41.30
4718	DRB1*11:74	B2RH59	152	166	NLGQIQLLRNMAKFS	44.67
4719	DRB1*11:74	B2RH59	431	445	EKYQYVFFKANTSSA	45.01
4720	DRB1*11:74	B2RH59	289	303	YKMILKKAKAPGRPT	45.42
4721	DRB1*11:74	B2RH59	432	446	KYQYVFFKANTSSAE	45.72
4722	DRB1*11:84	A0PA81	166	180	TAQVHIIIRGYQEWL	44.05
4723	DRB1*11:84	B2RH54	162	176	DPLKIKRVHARMAFT	27.69
4724	DRB1*11:84	B2RH54	163	177	PLKIKRVHARMAFTE	28.09
4725	DRB1*11:84	B2RH54	161	175	NDPLKIKRVHARMAF	31.94
4726	DRB1*11:84	B2RH54	164	178	LKIKRVHARMAFTEI	34.80

4727	DRB1*11:84	B2RH58	260	274	RPEFVMMLKLKKTGT	22.64
4728	DRB1*11:84	B2RH58	259	273	GRPEFVMMLKLKKTG	24.20
4729	DRB1*11:84	B2RH58	258	272	EGRPEFVMMLKLKKT	24.38
4730	DRB1*11:84	B2RH58	261	275	PEFVMMLKLKKTGTD	26.13
4731	DRB1*11:84	B2RH58	262	276	EFVMMLKLKKTGTDD	33.11
4732	DRB1*11:84	B2RH58	177	191	SIELKRVAAKLRLKK	33.95
4733	DRB1*11:84	B2RH58	257	271	NEGRPEFVMMLKLKK	37.59
4734	DRB1*11:84	B2RH58	178	192	IELKRVAAKLRLKKP	39.08
4735	DRB1*11:84	B2RH58	179	193	ELKRVAAKLRLKKPV	43.98
4736	DRB1*11:84	B2RH58	176	190	GSIELKRVAAKLRLK	44.20
4737	DRB1*11:84	B2RH58	180	194	LKRVAAKLRLKKPVL	45.94
4738	DRB1*11:84	B2RH58	175	189	LGSIELKRVAAKLRL	46.36
4739	DRB1*11:84	B2RH59	155	169	QIQLLRNMAKFSLSV	30.67
4740	DRB1*11:84	B2RH59	154	168	GQIQLLRNMAKFSLS	31.78
4741	DRB1*11:84	B2RH59	153	167	LGQIQLLRNMAKFSL	33.96
4742	DRB1*11:84	B2RH59	156	170	IQLLRNMAKFSLSVT	34.56
4743	DRB1*11:84	B2RH59	152	166	NLGQIQLLRNMAKFS	42.22
4744	DRB1*11:84	B2RH59	287	301	HFYKMILKKAKAPGR	42.40
4745	DRB1*11:84	B2RH59	285	299	RNHFYKMILKKAKAP	48.23
4746	DRB1*11:84	B2RH59	288	302	FYKMILKKAKAPGRP	49.18
4747	DRB1*12:01	B2RH54	175	189	FTEIKVQMSAAYDNI	42.56
4748	DRB1*12:01	B2RH54	173	187	MAFTEIKVQMSAAYD	49.38
4749	DRB1*12:01	B2RH57	63	77	GEDLIKKVRIFVFRE	43.62
4750	DRB1*12:01	B2RH57	62	76	SGEDLIKKVRIFVFR	44.22
4751	DRB1*12:01	B2RH57	64	78	EDLIKKVRIFVFREG	48.73
4752	DRB1*12:01	B2RHG4	267	281	DANGKVTALRIVTYL	39.60
4753	DRB1*12:01	B2RHG4	268	282	ANGKVTALRIVTYLN	41.34
4754	DRB1*12:01	B2RHG4	270	284	GKVTALRIVTYLNER	48.73
4755	DRB1*12:02	B2RH54	162	176	DPLKIKRVHARMAFT	46.59
4756	DRB1*12:02	B2RH54	161	175	NDPLKIKRVHARMAF	49.83
4757	DRB1*12:02	B2RH57	63	77	GEDLIKKVRIFVFRE	45.06
4758	DRB1*12:02	B2RH57	64	78	EDLIKKVRIFVFREG	46.76
4759	DRB1*12:02	B2RH57	62	76	SGEDLIKKVRIFVFR	47.28
4760	DRB1*12:02	B2RH59	154	168	GQIQLLRNMAKFSLS	40.54
4761	DRB1*12:02	B2RH59	153	167	LGQIQLLRNMAKFSL	43.42
4762	DRB1*12:02	B2RH59	155	169	QIQLLRNMAKFSLSV	44.78
4763	DRB1*12:02	B2RHG4	268	282	ANGKVTALRIVTYLN	41.91
4764	DRB1*12:02	B2RHG4	267	281	DANGKVTALRIVTYL	42.93
4765	DRB1*12:02	B2RHG4	270	284	GKVTALRIVTYLNER	47.15
4766	DRB1*12:02	B2RHG4	269	283	NGKVTALRIVTYLNE	48.27
4767	DRB1*12:03	B2RH54	175	189	FTEIKVQMSAAYDNI	22.33
4768	DRB1*12:03	B2RH54	174	188	AFTEIKVQMSAAYDN	26.13
4769	DRB1*12:03	B2RH54	173	187	MAFTEIKVQMSAAYD	27.32

4770	DRB1*12:03	B2RH54	176	190	TEIKVQMSAAYDNIY	32.20
4771	DRB1*12:03	B2RH54	172	186	RMAFTEIKVQMSAAY	33.94
4772	DRB1*12:03	B2RH54	52	66	DDESKVAKLTVMVYN	42.35
4773	DRB1*12:03	B2RH54	177	191	EIKVQMSAAYDNIYT	43.54
4774	DRB1*12:03	B2RH54	53	67	DESKVAKLTVMVYNG	46.50
4775	DRB1*12:03	B2RH57	63	77	GEDLIKKVRIFVFRE	27.24
4776	DRB1*12:03	B2RH57	64	78	EDLIKKVRIFVVFREG	27.52
4777	DRB1*12:03	B2RH57	62	76	SGEDLIKKVRIFVFR	28.65
4778	DRB1*12:03	B2RH57	65	79	DLIKKVRIFVVFREGL	31.01
4779	DRB1*12:03	B2RH57	237	251	SAQSIIQASAPLYVY	36.20
4780	DRB1*12:03	B2RH57	238	252	AQSIIQASAPLYVYE	38.36
4781	DRB1*12:03	B2RH57	66	80	LIKKVRIFVVFREGLN	42.73
4782	DRB1*12:03	B2RH57	192	206	SDVIKITKVQILRNA	43.54
4783	DRB1*12:03	B2RH57	239	253	QSIIQASAPLYVYEN	44.85
4784	DRB1*12:03	B2RH57	191	205	GSDVIKITKVQILRN	46.48
4785	DRB1*12:03	B2RH57	61	75	YSGEDLIKKVRIFVF	49.82
4786	DRB1*12:03	B2RH58	132	146	TSFLKTLVPNSILLQ	43.25
4787	DRB1*12:03	B2RH58	131	145	ETSFLKTLVPNSILL	49.51
4788	DRB1*12:03	B2RH59	154	168	GQIQLLRNMAKFSL	31.60
4789	DRB1*12:03	B2RH59	155	169	QIQLLRNMAKFSLSV	32.18
4790	DRB1*12:03	B2RH59	153	167	LGQIQLLRNMAKFSL	33.72
4791	DRB1*12:03	B2RH59	156	170	IQLLRNMAKFSLSVT	38.45
4792	DRB1*12:03	B2RHG4	268	282	ANGKVTALRIVTYLN	28.79
4793	DRB1*12:03	B2RHG4	267	281	DANGKVTALRIVTYL	29.90
4794	DRB1*12:03	B2RHG4	269	283	NGKVTALRIVTYLNE	31.32
4795	DRB1*12:03	B2RHG4	270	284	GKVTALRIVTYLNER	33.86
4796	DRB1*12:03	B2RHG4	266	280	LDANGKVTALRIVTY	43.98
4797	DRB1*12:03	B2RHG4	271	285	KVTALRIVTYLNERD	45.73
4798	DRB1*12:16	B2RH57	270	284	EALYNGIKTRYAYV	49.07
4799	DRB1*12:16	B2RH58	546	560	HWEYYTLNPLRLIYH	24.02
4800	DRB1*12:16	B2RH58	547	561	WEYYTLNPLRLIYHS	24.68
4801	DRB1*12:16	B2RH58	545	559	DHWEYYTLNPLRLIY	28.87
4802	DRB1*12:16	B2RH58	548	562	EYYTLNPLRLIYHSN	30.73
4803	DRB1*12:16	B2RH58	544	558	QDHWEEYTLNPLRLI	33.94
4804	DRB1*12:16	B2RH58	258	272	EGRPEFVMMLKLKKT	48.84
4805	DRB1*12:16	B2RH58	260	274	RPEFVMMLKLKKTGT	49.25
4806	DRB1*12:16	B2RH59	154	168	GQIQLLRNMAKFSL	42.04
4807	DRB1*12:16	B2RH59	155	169	QIQLLRNMAKFSLSV	42.75
4808	DRB1*12:16	B2RH59	278	292	KVRYNITRNHFYKMI	43.36
4809	DRB1*12:16	B2RH59	153	167	LGQIQLLRNMAKFSL	46.43
4810	DRB1*12:16	B2RH59	156	170	IQLLRNMAKFSLSVT	49.22
4811	DRB1*13:01	B2RH54	163	177	PLKIKRVHARMAFTE	11.10
4812	DRB1*13:01	B2RH54	162	176	DPLKIKRVHARMAFT	11.87

4813	DRB1*13:01	B2RH54	161	175	NDPLKIKRVHARMAF	13.88
4814	DRB1*13:01	B2RH54	164	178	LKIKRVHARMAFTEI	14.61
4815	DRB1*13:01	B2RH54	137	151	KTIVLKAGKNYIGYS	23.98
4816	DRB1*13:01	B2RH54	160	174	ENDPLKIKRVHARMA	24.77
4817	DRB1*13:01	B2RH54	165	179	KIKRVHARMAFTEIK	25.28
4818	DRB1*13:01	B2RH54	136	150	PKTIVLKAGKNYIGY	26.21
4819	DRB1*13:01	B2RH54	175	189	FTEIKVQMSAAYDNI	27.62
4820	DRB1*13:01	B2RH54	174	188	AFTEIKVQMSAAYDN	31.52
4821	DRB1*13:01	B2RH54	197	211	IYGLIAKKQSNLFGA	33.57
4822	DRB1*13:01	B2RH54	138	152	TIVLKAGKNYIGYSG	34.66
4823	DRB1*13:01	B2RH54	173	187	MAFTEIKVQMSAAYD	34.72
4824	DRB1*13:01	B2RH54	135	149	EPKTIVLKAGKNYIG	36.11
4825	DRB1*13:01	B2RH54	198	212	YGLIAKKQSNLFGAT	36.78
4826	DRB1*13:01	B2RH54	176	190	TEIKVQMSAAYDNIY	37.49
4827	DRB1*13:01	B2RH54	196	210	KIYGLIAKKQSNLFG	40.94
4828	DRB1*13:01	B2RH54	134	148	AEPKTIVLKAGKNYI	41.94
4829	DRB1*13:01	B2RH54	172	186	RMAFTEIKVQMSAAY	43.55
4830	DRB1*13:01	B2RH54	34	48	TISVVLKTSNSNRAF	49.00
4831	DRB1*13:01	B2RH57	198	212	TKVQILRNAKNSRLL	18.96
4832	DRB1*13:01	B2RH57	199	213	KVQILRNAKNSRLL	20.12
4833	DRB1*13:01	B2RH57	169	183	QANISLNRIAAKITL	24.07
4834	DRB1*13:01	B2RH57	200	214	VQILRNAKNSRLL	24.20
4835	DRB1*13:01	B2RH57	197	211	ITKVQILRNAKNSRL	25.65
4836	DRB1*13:01	B2RH57	192	206	SDVIKITKVQILRNA	27.67
4837	DRB1*13:01	B2RH57	167	181	TVQANISLNRIAAKI	30.00
4838	DRB1*13:01	B2RH57	168	182	VQANISLNRIAAKIT	30.17
4839	DRB1*13:01	B2RH57	63	77	GEDLIKKVRIFVFRE	30.28
4840	DRB1*13:01	B2RH57	170	184	ANISLNRIAAKITLD	30.33
4841	DRB1*13:01	B2RH57	414	428	NGIGIQRRTNLFFTV	30.35
4842	DRB1*13:01	B2RH57	191	205	GSDVIKITKVQILRN	31.19
4843	DRB1*13:01	B2RH57	193	207	DVIKITKVQILRNAK	31.39
4844	DRB1*13:01	B2RH57	62	76	SGEDLIKKVRIFVFR	31.50
4845	DRB1*13:01	B2RH57	237	251	SAQSIIQASAPLYVY	32.06
4846	DRB1*13:01	B2RH57	238	252	AQSIIQASAPLYVYE	32.07
4847	DRB1*13:01	B2RH57	64	78	EDLIKKVRIFVVFREG	33.29
4848	DRB1*13:01	B2RH57	239	253	QSIIQASAPLYVYEN	34.38
4849	DRB1*13:01	B2RH57	293	307	HHYSIRRNHHYKLDG	34.84
4850	DRB1*13:01	B2RH57	294	308	HYSIRRNHHYKLDGT	35.11
4851	DRB1*13:01	B2RH57	413	427	PNGIGIQRRTNLFFT	35.50
4852	DRB1*13:01	B2RH57	292	306	NHHYSIRRNHHYKLD	35.61
4853	DRB1*13:01	B2RH57	166	180	GTVQANISLNRIA	35.62
4854	DRB1*13:01	B2RH57	190	204	PGSDVIKITKVQILR	36.00
4855	DRB1*13:01	B2RH57	171	185	NISLNRIA	37.93

4856	DRB1*13:01	B2RH57	194	208	VIKITKVQILRNAKN	38.83
4857	DRB1*13:01	B2RH57	415	429	GIGIQRRTNLFFTVD	39.31
4858	DRB1*13:01	B2RH57	295	309	YSIRRNHHYKLDGTI	40.41
4859	DRB1*13:01	B2RH57	201	215	QILRNAKNSRLLEGT	40.56
4860	DRB1*13:01	B2RH57	412	426	KPNGIGIQRRTNLFF	41.29
4861	DRB1*13:01	B2RH57	172	186	ISLNRIAAKITLDIK	43.49
4862	DRB1*13:01	B2RH57	65	79	DLIKKVRIFFVREGL	44.10
4863	DRB1*13:01	B2RH57	196	210	KITKVQILRNAKNSR	44.21
4864	DRB1*13:01	B2RH57	291	305	ANHHYSIRRNHHYKL	44.90
4865	DRB1*13:01	B2RH57	165	179	QGTVQANISLNRIAA	45.10
4866	DRB1*13:01	B2RH58	177	191	SIELKRVAAKLRLKK	12.16
4867	DRB1*13:01	B2RH58	178	192	IELKRVAAKLRLKKP	13.95
4868	DRB1*13:01	B2RH58	176	190	GSIELKRVAAKLRLK	15.10
4869	DRB1*13:01	B2RH58	175	189	LGSIELKRVAAKLRL	16.97
4870	DRB1*13:01	B2RH58	179	193	ELKRVAAKLRLKKPV	18.06
4871	DRB1*13:01	B2RH58	180	194	LKRVAAKLRLKKPVL	19.57
4872	DRB1*13:01	B2RH58	438	452	KKIKIRQNPSQFIIN	21.41
4873	DRB1*13:01	B2RH58	437	451	EKKIKIRQNPSQFII	21.95
4874	DRB1*13:01	B2RH58	439	453	KIKIRQNPSQFIINT	25.30
4875	DRB1*13:01	B2RH58	182	196	RVAAKLRLKKPVLNI	25.62
4876	DRB1*13:01	B2RH58	408	422	TKKIKVRSILPINNI	25.62
4877	DRB1*13:01	B2RH58	181	195	KRVAAKLRLKKPVLN	26.27
4878	DRB1*13:01	B2RH58	409	423	KKIKVRSILPINNIP	29.13
4879	DRB1*13:01	B2RH58	174	188	QLGSIELKRVAAKLR	29.36
4880	DRB1*13:01	B2RH58	597	611	RAEIQLVDKLQREQA	30.34
4881	DRB1*13:01	B2RH58	407	421	NTKKIKVRSILPINN	31.11
4882	DRB1*13:01	B2RH58	183	197	VAAKLRLKKPVLNIS	32.53
4883	DRB1*13:01	B2RH58	595	609	PTRAIEQLVDKLQRE	33.05
4884	DRB1*13:01	B2RH58	596	610	TRAIEQLVDKLQREQ	33.43
4885	DRB1*13:01	B2RH58	656	670	VKNDRFVKSARLKK	33.70
4886	DRB1*13:01	B2RH58	406	420	ANTKKIKVRSILPIN	33.96
4887	DRB1*13:01	B2RH58	410	424	KIKVRSILPINNIPK	34.17
4888	DRB1*13:01	B2RH58	598	612	AEIQLVDKLQREQAG	37.02
4889	DRB1*13:01	B2RH58	555	569	LRLIYHSNQONRYAL	38.59
4890	DRB1*13:01	B2RH58	436	450	FEKKIKIRQNPSQFI	39.92
4891	DRB1*13:01	B2RH58	260	274	RPEFVMMLKLKKTGT	41.36
4892	DRB1*13:01	B2RH58	413	427	VRSILPINNIPKDIS	42.12
4893	DRB1*13:01	B2RH58	594	608	LPTRAIEQLVDKLQR	42.47
4894	DRB1*13:01	B2RH58	412	426	KVRSILPINNIPKDI	43.77
4895	DRB1*13:01	B2RH58	599	613	EIQLVDKLQREQAGV	43.80
4896	DRB1*13:01	B2RH58	259	273	GRPEFVMMLKLKKTG	44.68
4897	DRB1*13:01	B2RH58	184	198	AAKLRLKKPVLNISD	45.59
4898	DRB1*13:01	B2RH58	554	568	PLRLIYHSNQONRYA	45.67

4899	DRB1*13:01	B2RH58	405	419	DANTKKIKVRSILPI	47.61
4900	DRB1*13:01	B2RH58	430	444	IKNSIGFEKKIKIRQ	48.19
4901	DRB1*13:01	B2RH58	258	272	EGRPEFVMMLKLKKT	48.74
4902	DRB1*13:01	B2RH58	411	425	IKVRSILPINNIPKD	49.06
4903	DRB1*13:01	B2RH59	133	147	LETIRMWARISYPSI	15.51
4904	DRB1*13:01	B2RH59	155	169	QIQLLRNMAKFSLSV	15.91
4905	DRB1*13:01	B2RH59	154	168	GQIQLLRNMAKFSL	16.43
4906	DRB1*13:01	B2RH59	134	148	ETIRMWARISYPSIA	16.63
4907	DRB1*13:01	B2RH59	135	149	TIRMWARISYPSIAP	17.19
4908	DRB1*13:01	B2RH59	132	146	DLETIRMWARISYPS	18.28
4909	DRB1*13:01	B2RH59	153	167	LGQIQLLRNMAKFSL	18.49
4910	DRB1*13:01	B2RH59	156	170	IQLLRNMAKFSLSVT	18.68
4911	DRB1*13:01	B2RH59	131	145	DDLETIRMWARISYP	20.16
4912	DRB1*13:01	B2RH59	130	144	ADDLETIRMWARISY	23.64
4913	DRB1*13:01	B2RH59	157	171	QLLRNMAKFSLSVTP	25.65
4914	DRB1*13:01	B2RH59	152	166	NLGQIQLLRNMAKFS	25.93
4915	DRB1*13:01	B2RH59	151	165	QNLGQIQLLRNMAKF	35.91
4916	DRB1*13:01	B2RH59	287	301	HFYKMILKKAKAPGR	36.10
4917	DRB1*13:01	B2RH59	288	302	FYKMILKKAKAPGRP	37.43
4918	DRB1*13:01	B2RH59	278	292	KVRYNITRNHFYKMI	38.50
4919	DRB1*13:01	B2RH59	277	291	NKVRYNITRNHFYKM	39.98
4920	DRB1*13:01	B2RH59	249	263	GITCLILKARYNLPN	42.37
4921	DRB1*13:01	B2RH59	248	262	AGITCLILKARYNLP	42.51
4922	DRB1*13:01	B2RH59	289	303	YKMILKKAKAPGRPT	44.40
4923	DRB1*13:01	B2RH59	276	290	TNKVRYNITRNHFYK	44.44
4924	DRB1*13:01	B2RH59	250	264	ITCLILKARYNLPNA	46.14
4925	DRB1*13:01	B2RH59	280	294	RYNITRNHFYKMILK	47.34
4926	DRB1*13:01	B2RH59	279	293	VRYNITRNHFYKMIL	47.66
4927	DRB1*13:01	B2RH59	290	304	KMILKKAKAPGRPTL	49.49
4928	DRB1*13:01	B2RH59	423	437	RSVTVLVREKYQYVF	49.77
4929	DRB1*13:01	B2RHG4	183	197	KVELNISLSEKFQIV	38.96
4930	DRB1*13:01	B2RHG4	185	199	ELNISLSEKFQIVPI	44.58
4931	DRB1*13:01	B2RHG4	168	182	ANRLLDNVPLVRAIA	46.80
4932	DRB1*13:01	B2RHG4	186	200	LNISLSEKFQIVPII	49.23
4933	DRB1*13:01	B2RHG4	169	183	NRLLDNVPLVRAIAK	49.76
4934	DRB1*13:02	A0PA81	70	84	IDRLMMDAAQVAARK	39.01
4935	DRB1*13:02	A0PA81	277	291	YIDLRGANLNVLVSV	39.07
4936	DRB1*13:02	A0PA81	69	83	RIDRLMMDAAQVAAR	45.06
4937	DRB1*13:02	A0PA81	278	292	IDLRGANLNVLVSVT	49.36
4938	DRB1*13:02	B2RH54	36	50	SVVLKTSNSNRAFGV	20.93
4939	DRB1*13:02	B2RH54	311	325	YYPVLVNFNSNNYTY	20.98
4940	DRB1*13:02	B2RH54	92	106	RTLVMANTGAMELV	21.77
4941	DRB1*13:02	B2RH54	34	48	TISVVLKTSNSNRAF	25.38

4942	DRB1*13:02	B2RH54	35	49	ISVVLKTSNSNRAFG	26.95
4943	DRB1*13:02	B2RH54	91	105	QRTLVMANTGAMEL	27.58
4944	DRB1*13:02	B2RH54	37	51	VVLKTSNSNRAFGVG	27.77
4945	DRB1*13:02	B2RH54	312	326	YPVLVNFNSNNYTYD	27.89
4946	DRB1*13:02	B2RH54	310	324	TYYPVLVNFNSNNYT	29.10
4947	DRB1*13:02	B2RH54	175	189	FTEIKVQMSAAYDNI	29.23
4948	DRB1*13:02	B2RH54	93	107	TLVVMANTGAMELVG	31.57
4949	DRB1*13:02	B2RH54	238	252	ANVPWLSRNYVAPAA	33.41
4950	DRB1*13:02	B2RH54	240	254	VPWLSRNYVAPAADA	34.18
4951	DRB1*13:02	B2RH54	174	188	AFTEIKVQMSAAYDN	37.35
4952	DRB1*13:02	B2RH54	173	187	MAFTEIKVQMSAAYD	37.44
4953	DRB1*13:02	B2RH54	313	327	PVLVNFNSNNYTYDS	38.88
4954	DRB1*13:02	B2RH54	239	253	NVPWLSRNYVAPAAD	40.83
4955	DRB1*13:02	B2RH54	172	186	RMAFTEIKVQMSAAY	42.17
4956	DRB1*13:02	B2RH54	309	323	KTYYPVLVNFNSNNY	42.37
4957	DRB1*13:02	B2RH54	176	190	TEIKVQMSAAYDNIY	43.31
4958	DRB1*13:02	B2RH54	94	108	LVVMANTGAMELVGK	45.03
4959	DRB1*13:02	B2RH54	90	104	GQRTLVMANTGAME	46.08
4960	DRB1*13:02	B2RH57	237	251	SAQSIIQASAPLYVY	11.85
4961	DRB1*13:02	B2RH57	238	252	AQSIIQASAPLYVYE	12.76
4962	DRB1*13:02	B2RH57	239	253	QSIIQASAPLYVYEN	14.28
4963	DRB1*13:02	B2RH57	236	250	GSAQSIIQASAPLYV	15.74
4964	DRB1*13:02	B2RH57	169	183	QANISLNRIA AKITL	19.39
4965	DRB1*13:02	B2RH57	240	254	SIIQASAPLYVYENI	20.41
4966	DRB1*13:02	B2RH57	292	306	NHHYSIRRNHHYKLD	21.72
4967	DRB1*13:02	B2RH57	294	308	HYSIRRNHHYKLDGT	22.51
4968	DRB1*13:02	B2RH57	293	307	HHYSIRRNHHYKLDG	23.15
4969	DRB1*13:02	B2RH57	167	181	TVQANISLNRIA AKI	23.75
4970	DRB1*13:02	B2RH57	291	305	ANHHYSIRRNHHYKL	23.75
4971	DRB1*13:02	B2RH57	168	182	VQANISLNRIA AKIT	24.28
4972	DRB1*13:02	B2RH57	198	212	TKVQILRNAKNSRL	25.77
4973	DRB1*13:02	B2RH57	170	184	ANISLNRIA AKITLD	26.50
4974	DRB1*13:02	B2RH57	295	309	YSIRRNHHYKLDGTI	26.79
4975	DRB1*13:02	B2RH57	199	213	KVQILRNAKNSRLLE	26.99
4976	DRB1*13:02	B2RH57	166	180	GTVQANISLNRIA AK	28.93
4977	DRB1*13:02	B2RH57	200	214	VQILRNAKNSRLLEG	33.06
4978	DRB1*13:02	B2RH57	171	185	NISLNRIA AKITLDI	37.21
4979	DRB1*13:02	B2RH57	192	206	SDVIKITKVQILRNA	39.10
4980	DRB1*13:02	B2RH57	191	205	GSDVIKITKVQILRN	43.33
4981	DRB1*13:02	B2RH57	241	255	IIQASAPLYVYENIG	43.44
4982	DRB1*13:02	B2RH57	190	204	PGSDVIKITKVQILR	44.49
4983	DRB1*13:02	B2RH57	197	211	ITKVQILRNAKNSRL	44.86
4984	DRB1*13:02	B2RH57	193	207	DVIKITKVQILRNAK	48.34

4985	DRB1*13:02	B2RH58	438	452	KKIKIRQNPSQFIIN	8.14
4986	DRB1*13:02	B2RH58	437	451	EKKIKIRQNPSQFII	8.15
4987	DRB1*13:02	B2RH58	439	453	KIKIRQNPSQFIINT	8.25
4988	DRB1*13:02	B2RH58	440	454	IKIRQNPSQFIINTF	9.98
4989	DRB1*13:02	B2RH58	102	116	YGQFNGNNSFKIYLV	10.61
4990	DRB1*13:02	B2RH58	436	450	FEKKIKIRQNPSQFI	12.83
4991	DRB1*13:02	B2RH58	101	115	MYGQFNGNNSFKIYL	12.97
4992	DRB1*13:02	B2RH58	111	125	FKIYLVANVNFSGSF	14.08
4993	DRB1*13:02	B2RH58	112	126	KIYLVANVNFSGSFE	14.30
4994	DRB1*13:02	B2RH58	441	455	KIRQNPSQFIINTFG	15.02
4995	DRB1*13:02	B2RH58	103	117	GQFNGNNSFKIYLVA	15.65
4996	DRB1*13:02	B2RH58	316	330	EDPVTINGSLSVIEW	17.29
4997	DRB1*13:02	B2RH58	110	124	SFKIYLVANVNFSGS	17.35
4998	DRB1*13:02	B2RH58	546	560	HWEYYTLNPLRLIYH	17.57
4999	DRB1*13:02	B2RH58	547	561	WEYYTLNPLRLIYHS	17.74
5000	DRB1*13:02	B2RH58	317	331	DPVTINGSLSVIEWT	17.77
5001	DRB1*13:02	B2RH58	100	114	SMYGQFNGNNSFKIY	18.53
5002	DRB1*13:02	B2RH58	314	328	NEEDPVTINGSLSVI	18.64
5003	DRB1*13:02	B2RH58	318	332	PVTINGSLSVIEWTS	18.66
5004	DRB1*13:02	B2RH58	315	329	EEDPVTINGSLSVIE	19.60
5005	DRB1*13:02	B2RH58	545	559	DHWEYYTLNPLRLIY	19.91
5006	DRB1*13:02	B2RH58	133	147	SFLKTLVPNSILLQN	20.96
5007	DRB1*13:02	B2RH58	132	146	TSFLKTLVPNSILLQ	22.28
5008	DRB1*13:02	B2RH58	548	562	EYYTLNPLRLIYHSN	22.29
5009	DRB1*13:02	B2RH58	113	127	IYLVANVNFSGSFEP	24.29
5010	DRB1*13:02	B2RH58	104	118	QFNGNNSFKIYLVAN	26.08
5011	DRB1*13:02	B2RH58	109	123	NSFKIYLVANVNFSG	26.31
5012	DRB1*13:02	B2RH58	134	148	FLKTLVPNSILLQND	26.51
5013	DRB1*13:02	B2RH58	463	477	EGNLAPNLNNKAIYQ	26.89
5014	DRB1*13:02	B2RH58	462	476	PEGNLAPNLNNKAIY	27.02
5015	DRB1*13:02	B2RH58	464	478	GNLAPNLNNKAIYQI	27.60
5016	DRB1*13:02	B2RH58	544	558	QDHWEEYYTLNPLRLI	30.73
5017	DRB1*13:02	B2RH58	293	307	KKIRSNHLYDMAVTI	31.04
5018	DRB1*13:02	B2RH58	465	479	NLAPNLNNKAIYQIV	31.55
5019	DRB1*13:02	B2RH58	549	563	YYTLNPLRLIYHSNQ	34.50
5020	DRB1*13:02	B2RH58	313	327	LNEEDPVTINGSLSV	36.50
5021	DRB1*13:02	B2RH58	135	149	LKTLVPNSILLQNDG	36.86
5022	DRB1*13:02	B2RH58	99	113	ESMYGQFNGNNSFKI	39.07
5023	DRB1*13:02	B2RH58	291	305	SDKKIRSNHLYDMAV	40.40
5024	DRB1*13:02	B2RH58	556	570	RLIYHSNQONRYALM	40.49
5025	DRB1*13:02	B2RH58	555	569	LRLIYHSNQONRYAL	40.80
5026	DRB1*13:02	B2RH58	292	306	DKKIRSNHLYDMAVT	41.15
5027	DRB1*13:02	B2RH58	461	475	QPEGNLAPNLNNKAI	41.62

5028	DRB1*13:02	B2RH58	114	128	YLVANVNFSGSFEPN	44.29
5029	DRB1*13:02	B2RH58	408	422	TKKIKVRSILPINNI	45.58
5030	DRB1*13:02	B2RH58	3	17	TNRILNIICPPILFL	45.73
5031	DRB1*13:02	B2RH58	131	145	ETSFLKTLVPNSILL	46.01
5032	DRB1*13:02	B2RH58	67	81	LTLVIFYKNGTKVWQA	46.93
5033	DRB1*13:02	B2RH58	2	16	RTNRILNIICPPILF	47.87
5034	DRB1*13:02	B2RH59	520	534	QFRFKSNKVNSAENI	16.39
5035	DRB1*13:02	B2RH59	521	535	FRFKSNKVNSAENIA	19.58
5036	DRB1*13:02	B2RH59	155	169	QIQLLRNMAKFSLSV	20.67
5037	DRB1*13:02	B2RH59	278	292	KVRYNITRNHFYKMI	22.66
5038	DRB1*13:02	B2RH59	418	432	NPDLKRSVTVLVREK	23.91
5039	DRB1*13:02	B2RH59	519	533	LQFRFKSNKVNSAEN	23.95
5040	DRB1*13:02	B2RH59	154	168	GQIQLLRNMAKFSLS	24.00
5041	DRB1*13:02	B2RH59	518	532	ELQFRFKSNKVNSAE	24.89
5042	DRB1*13:02	B2RH59	153	167	LGQIQLLRNMAKFSL	25.13
5043	DRB1*13:02	B2RH59	416	430	QGNPDLKRSVTVLVR	25.39
5044	DRB1*13:02	B2RH59	279	293	VRYNITRNHFYKMIL	25.51
5045	DRB1*13:02	B2RH59	417	431	GNPDLKRSVTVLVRE	26.90
5046	DRB1*13:02	B2RH59	419	433	PDLKRSVTVLVREKY	26.93
5047	DRB1*13:02	B2RH59	280	294	RYNITRNHFYKMILK	27.01
5048	DRB1*13:02	B2RH59	277	291	NKVRYNITRNHFYKM	27.23
5049	DRB1*13:02	B2RH59	156	170	IQLLRNMAKFSLSVT	28.44
5050	DRB1*13:02	B2RH59	522	536	RFKSNKVNSAENIAV	31.45
5051	DRB1*13:02	B2RH59	517	531	KELQFRFKSNKVNSA	33.00
5052	DRB1*13:02	B2RH59	420	434	DLKRSVTVLVREKYQ	37.82
5053	DRB1*13:02	B2RH59	152	166	NLGQIQLLRNMAKFS	37.90
5054	DRB1*13:02	B2RH59	332	346	SGMLTVDHTYTMVFVQ	41.71
5055	DRB1*13:02	B2RH59	415	429	VQGNPDLKRSVTVLV	42.54
5056	DRB1*13:02	B2RH59	281	295	YNITRNHFYKMILKK	43.56
5057	DRB1*13:02	B2RH59	157	171	QLLRNMAKFSLSVTP	46.10
5058	DRB1*13:02	B2RH59	331	345	GSGMLTVDHTYTMVFV	48.20
5059	DRB1*13:02	B2RH59	523	537	FKSNKVNSAENIAVK	48.50
5060	DRB1*13:02	B2RHG4	113	127	KVYVVANVDNAVKTA	15.40
5061	DRB1*13:02	B2RHG4	196	210	IVPIIVNGSLSEFKF	16.44
5062	DRB1*13:02	B2RHG4	112	126	RKVYVVANVDNAVKT	17.41
5063	DRB1*13:02	B2RHG4	195	209	QIVPIIVNGSLSEFK	17.62
5064	DRB1*13:02	B2RHG4	111	125	ERKVYVVANVDNAVK	18.64
5065	DRB1*13:02	B2RHG4	197	211	VPIIVNGSLSEFKFR	19.26
5066	DRB1*13:02	B2RHG4	114	128	VYVVANVDNAVKTAL	19.63
5067	DRB1*13:02	B2RHG4	194	208	FQIVPIIVNGSLSEF	23.08
5068	DRB1*13:02	B2RHG4	193	207	KFQIVPIIVNGSLSE	30.08
5069	DRB1*13:02	B2RHG4	198	212	PIIVNGSLSEFKFRY	30.11
5070	DRB1*13:02	B2RHG4	110	124	GERKVYVVANVDNAV	31.21

5071	DRB1*13:02	B2RHG4	115	129	YVVANVDNAVKTALD	33.71
5072	DRB1*13:02	B2RHG4	183	197	KVELNISLSEKFQIV	33.83
5073	DRB1*13:02	B2RHG4	167	181	LANRLLDNVPLVRAI	40.46
5074	DRB1*13:02	B2RHG4	168	182	ANRLLDNVPLVRAIA	40.81
5075	DRB1*13:02	B2RHG4	182	196	AKVELNISLSEKFQI	43.79
5076	DRB1*13:03	A0PA81	33	47	RPFRLTVRAWDADMQ	46.36
5077	DRB1*13:03	A0PA81	30	44	DCPRPFRLTVRAWDA	49.38
5078	DRB1*13:05	A0PA81	33	47	RPFRLTVRAWDADMQ	30.44
5079	DRB1*13:05	A0PA81	30	44	DCPRPFRLTVRAWDA	34.41
5080	DRB1*13:05	A0PA81	32	46	PRPFRLTVRAWDADM	35.97
5081	DRB1*13:05	A0PA81	166	180	TAQVHIIIRGYQEWL	41.46
5082	DRB1*13:05	A0PA81	31	45	CPRPFRLTVRAWDAD	44.40
5083	DRB1*13:05	A0PA81	165	179	RTAQVHIIIRGYQEW	48.52
5084	DRB1*13:05	A0PA81	167	181	AQVHIIIRGYQEWLE	49.34
5085	DRB1*13:05	B2RH54	196	210	KIYGLIAKKQSNLFG	12.76
5086	DRB1*13:05	B2RH54	195	209	EKIYGLIAKKQSNLF	13.69
5087	DRB1*13:05	B2RH54	194	208	PEKIYGLIAKKQSNL	17.89
5088	DRB1*13:05	B2RH54	163	177	PLKIKRVHARMAFTE	26.32
5089	DRB1*13:05	B2RH54	162	176	DPLKIKRVHARMAFT	27.34
5090	DRB1*13:05	B2RH54	193	207	VPEKIYGLIAKKQSN	27.53
5091	DRB1*13:05	B2RH54	197	211	IYGLIAKKQSNLFGA	28.64
5092	DRB1*13:05	B2RH54	161	175	NDPLKIKRVHARMAF	34.05
5093	DRB1*13:05	B2RH54	164	178	LKIKRVHARMAFTEI	34.08
5094	DRB1*13:05	B2RH54	172	186	RMAFTEIKVQMSAAY	35.85
5095	DRB1*13:05	B2RH54	192	206	FVPEKIYGLIAKKQS	42.80
5096	DRB1*13:05	B2RH54	171	185	ARMAFTEIKVQMSAA	44.66
5097	DRB1*13:05	B2RH58	258	272	EGRPEFVMMLKLKKT	8.89
5098	DRB1*13:05	B2RH58	259	273	GRPEFVMMLKLKKTG	9.36
5099	DRB1*13:05	B2RH58	260	274	RPEFVMMLKLKKTGT	9.39
5100	DRB1*13:05	B2RH58	261	275	PEFVMMLKLKKTGTD	10.44
5101	DRB1*13:05	B2RH58	257	271	NEGRPEFVMMLKLKK	11.52
5102	DRB1*13:05	B2RH58	262	276	EFVMMLKLKKTGTDD	12.54
5103	DRB1*13:05	B2RH58	656	670	VKNDRFVKSARLKK	23.55
5104	DRB1*13:05	B2RH58	263	277	FVMMLKLKKTGTDDN	30.54
5105	DRB1*13:05	B2RH58	177	191	SIELKRVAAKLRLKK	40.98
5106	DRB1*13:05	B2RH58	175	189	LGSIELKRVAAKLRL	45.78
5107	DRB1*13:05	B2RH58	176	190	GSIELKRVAAKLRLK	45.96
5108	DRB1*13:05	B2RH58	178	192	IELKRVAAKLRLKKP	48.99
5109	DRB1*13:05	B2RH59	284	298	TRNHFYKMILKKAKA	12.67
5110	DRB1*13:05	B2RH59	285	299	RNHFYKMILKKAKAP	13.51
5111	DRB1*13:05	B2RH59	287	301	HFYKMILKKAKAPGR	15.15
5112	DRB1*13:05	B2RH59	286	300	NHFYKMILKKAKAPG	16.24
5113	DRB1*13:05	B2RH59	288	302	FYKMILKKAKAPGRP	18.61

5114	DRB1*13:05	B2RH59	283	297	ITRNHFYKMILKKAK	19.50
5115	DRB1*13:05	B2RH59	155	169	QIQLLRNMAKFSLSV	37.57
5116	DRB1*13:05	B2RH59	154	168	GQIQLLRNMAKFSLS	38.33
5117	DRB1*13:05	B2RH59	153	167	LGQIQLLRNMAKFSL	38.45
5118	DRB1*13:05	B2RH59	156	170	IQLLRNMAKFSLSVT	38.49
5119	DRB1*13:05	B2RH59	503	517	KTLYKYVLTTPQNK	41.30
5120	DRB1*13:05	B2RH59	152	166	NLGQIQLLRNMAKFS	44.67
5121	DRB1*13:05	B2RH59	431	445	EKYQYVFFKANTSSA	45.01
5122	DRB1*13:05	B2RH59	289	303	YKMILKKAKAPGRPT	45.42
5123	DRB1*13:05	B2RH59	432	446	KYQYVFFKANTSSAE	45.72
5124	DRB1*13:07	B2RH54	196	210	KIYGLIAKKQSNLFG	31.29
5125	DRB1*13:07	B2RH54	195	209	EKIYGLIAKKQSNLF	31.42
5126	DRB1*13:07	B2RH54	194	208	PEKIYGLIAKKQSNL	40.60
5127	DRB1*13:07	B2RH58	260	274	RPEFVMMLKLKKTGT	17.17
5128	DRB1*13:07	B2RH58	258	272	EGRPEFVMMLKLKKT	17.58
5129	DRB1*13:07	B2RH58	259	273	GRPEFVMMLKLKKTG	17.69
5130	DRB1*13:07	B2RH58	261	275	PEFVMMLKLKKTGTD	22.12
5131	DRB1*13:07	B2RH58	257	271	NEGRPEFVMMLKLKK	25.33
5132	DRB1*13:07	B2RH58	262	276	EFVMMLKLKKTGTDD	29.60
5133	DRB1*13:07	B2RH59	284	298	TRNHFYKMILKKAKA	24.33
5134	DRB1*13:07	B2RH59	285	299	RNHFYKMILKKAKAP	26.00
5135	DRB1*13:07	B2RH59	286	300	NHFYKMILKKAKAPG	31.13
5136	DRB1*13:07	B2RH59	287	301	HFYKMILKKAKAPGR	31.30
5137	DRB1*13:07	B2RH59	288	302	FYKMILKKAKAPGRP	39.74
5138	DRB1*13:07	B2RH59	283	297	ITRNHFYKMILKKAK	40.01
5139	DRB1*13:11	A0PA81	166	180	TAQVHIIIRGYQEWL	16.07
5140	DRB1*13:11	A0PA81	165	179	RTAQVHIIIRGYQEW	16.46
5141	DRB1*13:11	A0PA81	167	181	AQVHIIIRGYQEWLE	17.83
5142	DRB1*13:11	A0PA81	164	178	RRTAQVHIIIRGYQE	18.89
5143	DRB1*13:11	A0PA81	163	177	YRRTAQVHIIIRGYQ	25.80
5144	DRB1*13:11	A0PA81	168	182	QVHIIIRGYQEWLEA	27.49
5145	DRB1*13:11	A0PA81	224	238	NGDFISPIIRVYPTL	29.89
5146	DRB1*13:11	A0PA81	225	239	GDFISPIIRVYPTLD	33.54
5147	DRB1*13:11	A0PA81	223	237	QNGDFISPIIRVYPT	45.43
5148	DRB1*13:11	A0PA81	226	240	DFISPIIRVYPTLDT	47.06
5149	DRB1*13:11	B2RH54	162	176	DPLKIKRVHARMAFT	12.37
5150	DRB1*13:11	B2RH54	163	177	PLKIKRVHARMAFTE	12.77
5151	DRB1*13:11	B2RH54	161	175	NDPLKIKRVHARMAF	13.90
5152	DRB1*13:11	B2RH54	164	178	LKIKRVHARMAFTEI	15.51
5153	DRB1*13:11	B2RH54	195	209	EKIYGLIAKKQSNLF	21.59
5154	DRB1*13:11	B2RH54	196	210	KIYGLIAKKQSNLFG	23.42
5155	DRB1*13:11	B2RH54	160	174	ENDPLKIKRVHARMA	26.29
5156	DRB1*13:11	B2RH54	194	208	PEKIYGLIAKKQSNL	26.38

5157	DRB1*13:11	B2RH54	165	179	KIKRVHARMAFTEIK	26.61
5158	DRB1*13:11	B2RH54	100	114	TGAMELVGKTLAEVK	27.87
5159	DRB1*13:11	B2RH54	101	115	GAMELVGKTLAEVKA	33.03
5160	DRB1*13:11	B2RH54	137	151	KTIVLKAGKNYIGYS	37.73
5161	DRB1*13:11	B2RH54	136	150	PKTIVLKAGKNYIGY	39.41
5162	DRB1*13:11	B2RH54	193	207	VPEKIYGLIAKKQSN	40.69
5163	DRB1*13:11	B2RH54	99	113	NTGAMELVGKTLAEV	43.12
5164	DRB1*13:11	B2RH54	32	46	NATISVVLKTSNSNR	44.08
5165	DRB1*13:11	B2RH54	33	47	ATISVVLKTSNSNRA	45.18
5166	DRB1*13:11	B2RH54	197	211	IYGLIAKKQSNLFGA	47.42
5167	DRB1*13:11	B2RH57	357	371	TFENSLSFTVRIKGR	23.41
5168	DRB1*13:11	B2RH57	197	211	ITKVQILRNAKNSRL	25.16
5169	DRB1*13:11	B2RH57	358	372	FENSLSFTVRIKGRD	25.68
5170	DRB1*13:11	B2RH57	360	374	NSLSFTVRIKGRDGS	26.51
5171	DRB1*13:11	B2RH57	193	207	DVIKITKVQILRNAK	27.20
5172	DRB1*13:11	B2RH57	359	373	ENSLSFTVRIKGRDG	27.32
5173	DRB1*13:11	B2RH57	198	212	TKVQILRNAKNSRLL	28.19
5174	DRB1*13:11	B2RH57	192	206	SDVIKITKVQILRNA	28.23
5175	DRB1*13:11	B2RH57	194	208	VIKITKVQILRNAKN	28.35
5176	DRB1*13:11	B2RH57	196	210	KITKVQILRNAKNSR	28.50
5177	DRB1*13:11	B2RH57	195	209	IKITKVQILRNAKNS	30.73
5178	DRB1*13:11	B2RH57	361	375	SLSFTVRIKGRDGSR	31.29
5179	DRB1*13:11	B2RH57	168	182	VQANISLNRIAAKIT	31.66
5180	DRB1*13:11	B2RH57	169	183	QANISLNRIAAKITL	31.74
5181	DRB1*13:11	B2RH57	191	205	GSDVIKITKVQILRN	32.50
5182	DRB1*13:11	B2RH57	167	181	TVQANISLNRIAAKI	33.10
5183	DRB1*13:11	B2RH57	199	213	KVQILRNAKNSRLL	36.75
5184	DRB1*13:11	B2RH57	400	414	GTTVYTIKVKALKPN	39.23
5185	DRB1*13:11	B2RH57	190	204	PGSDVIKITKVQILR	39.94
5186	DRB1*13:11	B2RH57	166	180	GTVQANISLNRIA	42.69
5187	DRB1*13:11	B2RH57	170	184	ANISLNRIA	46.01
5188	DRB1*13:11	B2RH57	398	412	ADGTTVYTIKVKALK	47.90
5189	DRB1*13:11	B2RH57	401	415	TTVYTIKVKALKPNG	48.85
5190	DRB1*13:11	B2RH57	399	413	DGTTVYTIKVKALKP	48.99
5191	DRB1*13:11	B2RH58	260	274	RPEFVMMLKLKKTGT	9.57
5192	DRB1*13:11	B2RH58	261	275	PEFVMMLKLKKTGTD	10.41
5193	DRB1*13:11	B2RH58	259	273	GRPEFVMMLKLKKTG	10.54
5194	DRB1*13:11	B2RH58	258	272	EGRPEFVMMLKLKKT	11.46
5195	DRB1*13:11	B2RH58	262	276	EFVMMLKLKKTGTDD	12.56
5196	DRB1*13:11	B2RH58	257	271	NEGRPEFVMMLKLKK	16.52
5197	DRB1*13:11	B2RH58	177	191	SIELKRVA	17.59
5198	DRB1*13:11	B2RH58	178	192	IELKRVA	18.70
5199	DRB1*13:11	B2RH58	175	189	LGSIELKRVA	19.37

5200	DRB1*13:11	B2RH58	179	193	ELKRVAAKLRLKKPV	19.62
5201	DRB1*13:11	B2RH58	180	194	LKRVAAKLRLKKPVL	19.91
5202	DRB1*13:11	B2RH58	263	277	FVMMLKLLKKTGTDDN	20.05
5203	DRB1*13:11	B2RH58	176	190	GSIELKRVAAKLRLK	20.38
5204	DRB1*13:11	B2RH58	174	188	QLGSIELKRVAAKLR	22.18
5205	DRB1*13:11	B2RH58	656	670	VKNDRFVKSARKLKK	25.71
5206	DRB1*13:11	B2RH58	181	195	KRVAAKLRLKKPVLN	26.55
5207	DRB1*13:11	B2RH58	597	611	RAEIQLVDKLQREQA	26.69
5208	DRB1*13:11	B2RH58	182	196	RVAAKLRLKKPVLNI	27.28
5209	DRB1*13:11	B2RH58	552	566	LNPLRLIYHSNQQR	28.81
5210	DRB1*13:11	B2RH58	596	610	TRAEIQLVDKLQREQ	32.40
5211	DRB1*13:11	B2RH58	183	197	VAAKLRLKKPVLNIS	32.72
5212	DRB1*13:11	B2RH58	630	644	KAIKILLPTASGNAT	33.24
5213	DRB1*13:11	B2RH58	173	187	KQLGSIELKRVAAKL	33.63
5214	DRB1*13:11	B2RH58	598	612	AEIQLVDKLQREQAG	34.65
5215	DRB1*13:11	B2RH58	595	609	PTRAETIQLVDKLQRE	35.29
5216	DRB1*13:11	B2RH58	629	643	DKAIKILLPTASGNA	37.92
5217	DRB1*13:11	B2RH58	551	565	TLNPLRLIYHSNQQR	38.27
5218	DRB1*13:11	B2RH58	599	613	EIQLVDKLQREQAGV	39.72
5219	DRB1*13:11	B2RH58	550	564	YTLNPLRLIYHSNQQR	39.89
5220	DRB1*13:11	B2RH58	410	424	KIKVRSILPINNIPK	42.52
5221	DRB1*13:11	B2RH58	553	567	NPLRLIYHSNQQRNY	42.62
5222	DRB1*13:11	B2RH58	431	445	KNSIGFEKKIKIRQN	43.05
5223	DRB1*13:11	B2RH58	184	198	AAKLRLKKPVLNISD	44.36
5224	DRB1*13:11	B2RH58	408	422	TKKIKVRSILPINNI	45.16
5225	DRB1*13:11	B2RH58	430	444	IKNSIGFEKKIKIRQ	47.61
5226	DRB1*13:11	B2RH58	628	642	PDKAIKILLPTASGN	48.01
5227	DRB1*13:11	B2RH58	409	423	KKIKVRSILPINNIP	49.73
5228	DRB1*13:11	B2RH59	287	301	HFYKMILKKAKAPGR	13.89
5229	DRB1*13:11	B2RH59	154	168	GQIQLLRNMAKFSL	14.39
5230	DRB1*13:11	B2RH59	155	169	QIQLLRNMAKFSLSV	14.46
5231	DRB1*13:11	B2RH59	156	170	IQLLRNMAKFSLSVT	15.18
5232	DRB1*13:11	B2RH59	153	167	LGQIQLLRNMAKFSL	15.70
5233	DRB1*13:11	B2RH59	288	302	FYKMILKKAKAPGRP	16.13
5234	DRB1*13:11	B2RH59	286	300	NHFYKMILKKAKAPG	16.56
5235	DRB1*13:11	B2RH59	285	299	RNHFYKMILKKAKAP	17.73
5236	DRB1*13:11	B2RH59	284	298	TRNHFYKMILKKAKA	18.04
5237	DRB1*13:11	B2RH59	152	166	NLGQIQLLRNMAKFS	18.06
5238	DRB1*13:11	B2RH59	157	171	QLLRNMAKFSLSVTP	20.51
5239	DRB1*13:11	B2RH59	151	165	QNLGQIQLLRNMAKF	22.60
5240	DRB1*13:11	B2RH59	289	303	YKMILKKAKAPGRPT	24.04
5241	DRB1*13:11	B2RH59	133	147	LETIRMWARISYPSI	24.90
5242	DRB1*13:11	B2RH59	283	297	ITRNHFYKMILKKAK	28.71

5243	DRB1*13:11	B2RH59	134	148	ETIRMWARISYPSIA	29.81
5244	DRB1*13:11	B2RH59	132	146	DLETIRMWARISYPS	29.94
5245	DRB1*13:11	B2RH59	131	145	DDLETIRMWARISYP	35.41
5246	DRB1*13:11	B2RH59	150	164	NQNLGQIQLLRNMAK	36.78
5247	DRB1*13:11	B2RH59	158	172	LLRNMAKFSLSVTPP	38.82
5248	DRB1*13:11	B2RH59	135	149	TIRMWARISYPSIAP	40.19
5249	DRB1*13:11	B2RH59	249	263	GITCLILKARYNLPN	40.74
5250	DRB1*13:11	B2RH59	248	262	AGITCLILKARYNLP	41.19
5251	DRB1*13:11	B2RH59	290	304	KMILKKAKAPGRPTL	43.05
5252	DRB1*13:11	B2RH59	422	436	KRSVTVLVREKYQYV	46.29
5253	DRB1*13:11	B2RH59	250	264	ITCLILKARYNLPNA	48.34
5254	DRB1*13:11	B2RH59	247	261	GAGITCLILKARYNL	49.68
5255	DRB1*13:11	B2RHG4	135	149	SDLQTVKRTTAMPWS	39.64
5256	DRB1*13:11	B2RHG4	134	148	ESDLQTVKRTTAMPW	40.47
5257	DRB1*13:11	B2RHG4	174	188	NVPLVRAIAKVELNI	45.05
5258	DRB1*13:11	B2RHG4	170	184	RLLDNVPLVRAIAKV	46.07
5259	DRB1*13:11	B2RHG4	175	189	VPLVRAIAKVELNIS	48.20
5260	DRB1*13:11	B2RHG4	173	187	DNVPLVRAIAKVELN	48.57
5261	DRB1*13:11	B2RHG4	192	206	EKFQIVPIIVNGSLS	49.12
5262	DRB1*13:11	B2RHG4	193	207	KFQIVPIIVNGSLSE	49.82
5263	DRB1*13:12	A0PA81	33	47	RPFRLTVRAWDADMQ	42.04
5264	DRB1*13:12	A0PA81	30	44	DCPRPFRLTVRAWDA	46.39
5265	DRB1*13:14	A0PA81	33	47	RPFRLTVRAWDADMQ	30.44
5266	DRB1*13:14	A0PA81	30	44	DCPRPFRLTVRAWDA	34.41
5267	DRB1*13:14	A0PA81	32	46	PRPFRLTVRAWDADM	35.97
5268	DRB1*13:14	A0PA81	166	180	TAQVHIIIRGYQEWL	41.46
5269	DRB1*13:14	A0PA81	31	45	CPRPFRLTVRAWDAD	44.40
5270	DRB1*13:14	A0PA81	165	179	RTAQVHIIIRGYQEW	48.52
5271	DRB1*13:14	A0PA81	167	181	AQVHIIIRGYQEWLE	49.34
5272	DRB1*13:14	B2RH54	196	210	KIYGLIAKKQSNLFG	12.76
5273	DRB1*13:14	B2RH54	195	209	EKIYGLIAKKQSNLF	13.69
5274	DRB1*13:14	B2RH54	194	208	PEKIYGLIAKKQSNL	17.89
5275	DRB1*13:14	B2RH54	163	177	PLKIKRVHARMAFTE	26.32
5276	DRB1*13:14	B2RH54	162	176	DPLKIKRVHARMAFT	27.34
5277	DRB1*13:14	B2RH54	193	207	VPEKIYGLIAKKQSN	27.53
5278	DRB1*13:14	B2RH54	197	211	IYGLIAKKQSNLFGA	28.64
5279	DRB1*13:14	B2RH54	161	175	NDPLKIKRVHARMAF	34.05
5280	DRB1*13:14	B2RH54	164	178	LKIKRVHARMAFTEI	34.08
5281	DRB1*13:14	B2RH54	172	186	RMAFTEIKVQMSAAY	35.85
5282	DRB1*13:14	B2RH54	192	206	FVPEKIYGLIAKKQS	42.80
5283	DRB1*13:14	B2RH54	171	185	ARMAFTEIKVQMSAA	44.66
5284	DRB1*13:14	B2RH58	258	272	EGRPEFVMMLKLKKT	8.89
5285	DRB1*13:14	B2RH58	259	273	GRPEFVMMLKLKKTG	9.36

5286	DRB1*13:14	B2RH58	260	274	RPEFVMMLKLKKTGT	9.39
5287	DRB1*13:14	B2RH58	261	275	PEFVMMLKLKKTGTD	10.44
5288	DRB1*13:14	B2RH58	257	271	NEGRPEFVMMLKLKK	11.52
5289	DRB1*13:14	B2RH58	262	276	EFVMMLKLKKTGTDD	12.54
5290	DRB1*13:14	B2RH58	656	670	VKNDRFVKSARLKK	23.55
5291	DRB1*13:14	B2RH58	263	277	FVMMLKLKKTGTDDN	30.54
5292	DRB1*13:14	B2RH58	177	191	SIELKRVAAKLRLKK	40.98
5293	DRB1*13:14	B2RH58	175	189	LGSIELKRVAAKLRL	45.78
5294	DRB1*13:14	B2RH58	176	190	GSIELKRVAAKLRLK	45.96
5295	DRB1*13:14	B2RH58	178	192	IELKRVAAKLRLKKP	48.99
5296	DRB1*13:14	B2RH59	284	298	TRNHFYKMILKKAKA	12.67
5297	DRB1*13:14	B2RH59	285	299	RNHFYKMILKKAKAP	13.51
5298	DRB1*13:14	B2RH59	287	301	HFYKMILKKAKAPGR	15.15
5299	DRB1*13:14	B2RH59	286	300	NHFYKMILKKAKAPG	16.24
5300	DRB1*13:14	B2RH59	288	302	FYKMILKKAKAPGRP	18.61
5301	DRB1*13:14	B2RH59	283	297	ITRNHFYKMILKKAK	19.50
5302	DRB1*13:14	B2RH59	155	169	QIQLLRNMAKFSLSV	37.57
5303	DRB1*13:14	B2RH59	154	168	GQIQLLRNMAKFSLS	38.33
5304	DRB1*13:14	B2RH59	153	167	LGQIQLLRNMAKFSL	38.45
5305	DRB1*13:14	B2RH59	156	170	IQLLRNMAKFSLSVT	38.49
5306	DRB1*13:14	B2RH59	503	517	KTLYKYVLTTMPQNK	41.30
5307	DRB1*13:14	B2RH59	152	166	NLGQIQLLRNMAKFS	44.67
5308	DRB1*13:14	B2RH59	431	445	EKYQYVFFKANTSSA	45.01
5309	DRB1*13:14	B2RH59	289	303	YKMILKKAKAPGRPT	45.42
5310	DRB1*13:14	B2RH59	432	446	KYQYVFFKANTSSAE	45.72
5311	DRB1*13:21	A0PA81	33	47	RPFRLTVRAWDADMQ	12.08
5312	DRB1*13:21	A0PA81	30	44	DCPRPFRLTVRAWDA	13.32
5313	DRB1*13:21	A0PA81	32	46	PRPFRLTVRAWDADM	15.41
5314	DRB1*13:21	A0PA81	34	48	PFRLTVRAWDADMQD	16.25
5315	DRB1*13:21	A0PA81	31	45	CPRPFRLTVRAWDAD	17.69
5316	DRB1*13:21	A0PA81	29	43	SDCPRPFRLTVRAWD	17.88
5317	DRB1*13:21	B2RH54	196	210	KIYGLIAKKQSNLFG	27.28
5318	DRB1*13:21	B2RH54	195	209	EKIYGLIAKKQSNLF	27.88
5319	DRB1*13:21	B2RH54	194	208	PEKIYGLIAKKQSNL	37.43
5320	DRB1*13:21	B2RH57	361	375	SLSFTVRIKGRDGSR	47.82
5321	DRB1*13:21	B2RH57	359	373	ENSLSFTVRIKGRDG	48.61
5322	DRB1*13:21	B2RH57	360	374	NSLSFTVRIKGRDGS	49.02
5323	DRB1*13:21	B2RH58	258	272	EGRPEFVMMLKLKKT	13.01
5324	DRB1*13:21	B2RH58	260	274	RPEFVMMLKLKKTGT	13.98
5325	DRB1*13:21	B2RH58	257	271	NEGRPEFVMMLKLKK	14.14
5326	DRB1*13:21	B2RH58	259	273	GRPEFVMMLKLKKTG	14.14
5327	DRB1*13:21	B2RH58	261	275	PEFVMMLKLKKTGTD	16.29
5328	DRB1*13:21	B2RH58	262	276	EFVMMLKLKKTGTDD	20.05

5329	DRB1*13:21	B2RH58	546	560	HWEYYTLNPLRLIYH	39.50
5330	DRB1*13:21	B2RH58	263	277	FVMMLKLKKTGTDDN	40.71
5331	DRB1*13:21	B2RH58	547	561	WEYYTLNPLRLIYHS	43.25
5332	DRB1*13:21	B2RH58	656	670	VKNDRFVKSARKLKK	44.55
5333	DRB1*13:21	B2RH58	545	559	DHWEYYTLNPLRLIY	44.85
5334	DRB1*13:21	B2RH58	177	191	SIELKRVAAKLRLKK	45.44
5335	DRB1*13:21	B2RH59	284	298	TRNHFYKMILKKAKA	19.47
5336	DRB1*13:21	B2RH59	285	299	RNHFYKMILKKAKAP	22.21
5337	DRB1*13:21	B2RH59	287	301	HFYKMILKKAKAPGR	24.80
5338	DRB1*13:21	B2RH59	283	297	ITRNHFYKMILKKAK	25.58
5339	DRB1*13:21	B2RH59	286	300	NHFYKMILKKAKAPG	25.82
5340	DRB1*13:21	B2RH59	154	168	GQIQLLRNMAKFSL	31.93
5341	DRB1*13:21	B2RH59	288	302	FYKMILKKAKAPGRP	32.46
5342	DRB1*13:21	B2RH59	155	169	QIQLLRNMAKFSLSV	33.59
5343	DRB1*13:21	B2RH59	156	170	IQLLRNMAKFSLSVT	35.81
5344	DRB1*13:21	B2RH59	153	167	LGQIQLLRNMAKFSL	37.82
5345	DRB1*13:21	B2RH59	458	472	QGNELLISAKLPDVL	40.23
5346	DRB1*13:21	B2RH59	503	517	KTLYKYVLTTPQNK	40.33
5347	DRB1*13:21	B2RH59	460	474	NELLISAKLPDVLNA	41.14
5348	DRB1*13:21	B2RH59	459	473	GNELLISAKLPDVLN	44.60
5349	DRB1*13:21	B2RH59	157	171	QLLRNMAKFSLSVTP	45.07
5350	DRB1*13:23	A0PA81	70	84	IDRLMDAAQVAARK	39.01
5351	DRB1*13:23	A0PA81	277	291	YIDLRGANLNVLVSV	39.07
5352	DRB1*13:23	A0PA81	69	83	RIDRLMDAAQVAAR	45.06
5353	DRB1*13:23	A0PA81	278	292	IDLRGANLNVLVSVT	49.36
5354	DRB1*13:23	B2RH54	36	50	SVVLKTSNSNRAFGV	20.93
5355	DRB1*13:23	B2RH54	311	325	YYPVLVNFNSNNYTY	20.98
5356	DRB1*13:23	B2RH54	92	106	RTLVMANTGAMELV	21.77
5357	DRB1*13:23	B2RH54	34	48	TISVVLKTSNSNRAF	25.38
5358	DRB1*13:23	B2RH54	35	49	ISVVLKTSNSNRAFG	26.95
5359	DRB1*13:23	B2RH54	91	105	QRTLVMANTGAMEL	27.58
5360	DRB1*13:23	B2RH54	37	51	VVLKTSNSNRAFGVG	27.77
5361	DRB1*13:23	B2RH54	312	326	YPVLVNFNSNNYTYD	27.89
5362	DRB1*13:23	B2RH54	310	324	TYYPVLVNFNSNNYT	29.10
5363	DRB1*13:23	B2RH54	175	189	FTEIKVQMSAAYDNI	29.23
5364	DRB1*13:23	B2RH54	93	107	TLVVMANTGAMELVG	31.57
5365	DRB1*13:23	B2RH54	238	252	ANVPWLSRNYVAPAA	33.41
5366	DRB1*13:23	B2RH54	240	254	VPWLSRNYVAPAADA	34.18
5367	DRB1*13:23	B2RH54	174	188	AFTEIKVQMSAAYDN	37.35
5368	DRB1*13:23	B2RH54	173	187	MAFTEIKVQMSAAYD	37.44
5369	DRB1*13:23	B2RH54	313	327	PVLVNFNSNNYTYDS	38.88
5370	DRB1*13:23	B2RH54	239	253	NVPWLSRNYVAPAAD	40.83
5371	DRB1*13:23	B2RH54	172	186	RMAFTEIKVQMSAAY	42.17

5372	DRB1*13:23	B2RH54	309	323	KTYYPVLVNFNSNNY	42.37
5373	DRB1*13:23	B2RH54	176	190	TEIKVQMSAAYDNIY	43.31
5374	DRB1*13:23	B2RH54	94	108	LVVMANTGAMELVGK	45.03
5375	DRB1*13:23	B2RH54	90	104	GQRTLVMANTGAME	46.08
5376	DRB1*13:23	B2RH57	237	251	SAQSIIQASAPLYVY	11.85
5377	DRB1*13:23	B2RH57	238	252	AQSIIQASAPLYVYE	12.76
5378	DRB1*13:23	B2RH57	239	253	QSIIQASAPLYVYEN	14.28
5379	DRB1*13:23	B2RH57	236	250	GSAQSIIQASAPLYV	15.74
5380	DRB1*13:23	B2RH57	169	183	QANISLNRIAAKITL	19.39
5381	DRB1*13:23	B2RH57	240	254	SIIQASAPLYVYENI	20.41
5382	DRB1*13:23	B2RH57	292	306	NHHYSIRRNHHYKLD	21.72
5383	DRB1*13:23	B2RH57	294	308	HYSIRRNHHYKLDGT	22.51
5384	DRB1*13:23	B2RH57	293	307	HHYSIRRNHHYKLDG	23.15
5385	DRB1*13:23	B2RH57	167	181	TVQANISLNRIAAKI	23.75
5386	DRB1*13:23	B2RH57	291	305	ANHHYSIRRNHHYKL	23.75
5387	DRB1*13:23	B2RH57	168	182	VQANISLNRIAAKIT	24.28
5388	DRB1*13:23	B2RH57	198	212	TKVQILRNAKNSRLL	25.77
5389	DRB1*13:23	B2RH57	170	184	ANISLNRIAAKITLD	26.50
5390	DRB1*13:23	B2RH57	295	309	YSIRRNHHYKLDGTI	26.79
5391	DRB1*13:23	B2RH57	199	213	KVQILRNAKNSRLL	26.99
5392	DRB1*13:23	B2RH57	166	180	GTVQANISLNRIA	28.93
5393	DRB1*13:23	B2RH57	200	214	VQILRNAKNSRLL	33.06
5394	DRB1*13:23	B2RH57	171	185	NISLNRIAAKITLDI	37.21
5395	DRB1*13:23	B2RH57	192	206	SDVIKITKVQILRNA	39.10
5396	DRB1*13:23	B2RH57	191	205	GSDVIKITKVQILRN	43.33
5397	DRB1*13:23	B2RH57	241	255	IIQASAPLYVYENIG	43.44
5398	DRB1*13:23	B2RH57	190	204	PGSDVIKITKVQILR	44.49
5399	DRB1*13:23	B2RH57	197	211	ITKVQILRNAKNSRL	44.86
5400	DRB1*13:23	B2RH57	193	207	DVIKITKVQILRNAK	48.34
5401	DRB1*13:23	B2RH58	438	452	KKIKIRQNPSQFIIN	8.14
5402	DRB1*13:23	B2RH58	437	451	EKKIKIRQNPSQFII	8.15
5403	DRB1*13:23	B2RH58	439	453	KIKIRQNPSQFIINT	8.25
5404	DRB1*13:23	B2RH58	440	454	IKIRQNPSQFIINTF	9.98
5405	DRB1*13:23	B2RH58	102	116	YGQFNGNNSFKIYLV	10.61
5406	DRB1*13:23	B2RH58	436	450	FEKKIKIRQNPSQFI	12.83
5407	DRB1*13:23	B2RH58	101	115	MYGQFNGNNSFKIYL	12.97
5408	DRB1*13:23	B2RH58	111	125	FKIYLVANVNFSGSF	14.08
5409	DRB1*13:23	B2RH58	112	126	KIYLVANVNFSGSFE	14.30
5410	DRB1*13:23	B2RH58	441	455	KIRQNPSQFIINTFG	15.02
5411	DRB1*13:23	B2RH58	103	117	GQFNGNNSFKIYLVA	15.65
5412	DRB1*13:23	B2RH58	316	330	EDPVTINGSLSVIEW	17.29
5413	DRB1*13:23	B2RH58	110	124	SFKIYLVANVNFSGS	17.35
5414	DRB1*13:23	B2RH58	546	560	HWEYYTLNPLRLIYH	17.57

5415	DRB1*13:23	B2RH58	547	561	WEYYTLNPLRLIYHS	17.74
5416	DRB1*13:23	B2RH58	317	331	DPVTINGSLSVIEWWT	17.77
5417	DRB1*13:23	B2RH58	100	114	SMYGQFNGNNSFKIY	18.53
5418	DRB1*13:23	B2RH58	314	328	NEEDPVTINGSLSVI	18.64
5419	DRB1*13:23	B2RH58	318	332	PVTINGSLSVIEWTS	18.66
5420	DRB1*13:23	B2RH58	315	329	EEDPVTINGSLSVIE	19.60
5421	DRB1*13:23	B2RH58	545	559	DHWEYYTLNPLRLIY	19.91
5422	DRB1*13:23	B2RH58	133	147	SFLKTLVPNSILLQN	20.96
5423	DRB1*13:23	B2RH58	132	146	TSFLKTLVPNSILLQ	22.28
5424	DRB1*13:23	B2RH58	548	562	EYYTLNPLRLIYHSN	22.29
5425	DRB1*13:23	B2RH58	113	127	IYLVANVNFSGSFEP	24.29
5426	DRB1*13:23	B2RH58	104	118	QFNGNNSFKIYLVAN	26.08
5427	DRB1*13:23	B2RH58	109	123	NSFKIYLVANVNFSG	26.31
5428	DRB1*13:23	B2RH58	134	148	FLKTLVPNSILLQND	26.51
5429	DRB1*13:23	B2RH58	463	477	EGNLAPNLNNKAIYQ	26.89
5430	DRB1*13:23	B2RH58	462	476	PEGNLAPNLNNKAIY	27.02
5431	DRB1*13:23	B2RH58	464	478	GNLAPNLNNKAIYQI	27.60
5432	DRB1*13:23	B2RH58	544	558	QDHWEYYTLNPLRLI	30.73
5433	DRB1*13:23	B2RH58	293	307	KKIRSNHLYDMAVTI	31.04
5434	DRB1*13:23	B2RH58	465	479	NLAPNLNNKAIYQIV	31.55
5435	DRB1*13:23	B2RH58	549	563	YYTLNPLRLIYHSNQ	34.50
5436	DRB1*13:23	B2RH58	313	327	LNEEDPVTINGSLSV	36.50
5437	DRB1*13:23	B2RH58	135	149	LKTLVPNSILLQNDG	36.86
5438	DRB1*13:23	B2RH58	99	113	ESMYGQFNGNNSFKI	39.07
5439	DRB1*13:23	B2RH58	291	305	SDKKIRSNHLYDMAV	40.40
5440	DRB1*13:23	B2RH58	556	570	RLIYHSNQONRYALM	40.49
5441	DRB1*13:23	B2RH58	555	569	LRLIYHSNQONRYAL	40.80
5442	DRB1*13:23	B2RH58	292	306	DKKIRSNHLYDMAVT	41.15
5443	DRB1*13:23	B2RH58	461	475	QPEGNLAPNLNNKAI	41.62
5444	DRB1*13:23	B2RH58	114	128	YLVANVNFSGSFEPN	44.29
5445	DRB1*13:23	B2RH58	408	422	TKKIKVRSILPINNI	45.58
5446	DRB1*13:23	B2RH58	3	17	TNRILNIICPPILFL	45.73
5447	DRB1*13:23	B2RH58	131	145	ETSFLKTLVPNSILL	46.01
5448	DRB1*13:23	B2RH58	67	81	LTLVFYKNGTKVWQA	46.93
5449	DRB1*13:23	B2RH58	2	16	RTNRILNIICPPILF	47.87
5450	DRB1*13:23	B2RH59	520	534	QFRFKSNKVNSAENI	16.39
5451	DRB1*13:23	B2RH59	521	535	FRFKSNKVNSAENIA	19.58
5452	DRB1*13:23	B2RH59	155	169	QIQLLRNMAKFSLSV	20.67
5453	DRB1*13:23	B2RH59	278	292	KVRYNITRNHFYKMI	22.66
5454	DRB1*13:23	B2RH59	418	432	NPDLKRSVTVLVREK	23.91
5455	DRB1*13:23	B2RH59	519	533	LQFRFKSNKVNSAEN	23.95
5456	DRB1*13:23	B2RH59	154	168	GQIQLLRNMAKFSLS	24.00
5457	DRB1*13:23	B2RH59	518	532	ELQFRFKSNKVNSAE	24.89

5458	DRB1*13:23	B2RH59	153	167	LGQIQLLRNMAKFSL	25.13
5459	DRB1*13:23	B2RH59	416	430	QGNPDLKRSVTVLVR	25.39
5460	DRB1*13:23	B2RH59	279	293	VRYNITRNHFYKMIL	25.51
5461	DRB1*13:23	B2RH59	417	431	GNPDLKRSVTVLVRE	26.90
5462	DRB1*13:23	B2RH59	419	433	PDLKRSVTVLVREKY	26.93
5463	DRB1*13:23	B2RH59	280	294	RYNITRNHFYKMILK	27.01
5464	DRB1*13:23	B2RH59	277	291	NKVRYNITRNHFYKM	27.23
5465	DRB1*13:23	B2RH59	156	170	IQLLRNMAKFSLSVT	28.44
5466	DRB1*13:23	B2RH59	522	536	RFKSNKVNSAENIAV	31.45
5467	DRB1*13:23	B2RH59	517	531	KELQFRFKSNKVNSA	33.00
5468	DRB1*13:23	B2RH59	420	434	DLKRSVTVLVREKYQ	37.82
5469	DRB1*13:23	B2RH59	152	166	NLGQIQLLRNMAKFS	37.90
5470	DRB1*13:23	B2RH59	332	346	SGMLTVDHTYTMVQ	41.71
5471	DRB1*13:23	B2RH59	415	429	VQGNPDLKRSVTVLV	42.54
5472	DRB1*13:23	B2RH59	281	295	YNITRNHFYKMILKK	43.56
5473	DRB1*13:23	B2RH59	157	171	QLLRNMAKFSLSVTP	46.10
5474	DRB1*13:23	B2RH59	331	345	GSGMLTVDHTYTMV	48.20
5475	DRB1*13:23	B2RH59	523	537	FKSNKVNSAENIAVK	48.50
5476	DRB1*13:23	B2RHG4	113	127	KVYVVANVDNAVKTA	15.40
5477	DRB1*13:23	B2RHG4	196	210	IVPIIVNGSLSEFKF	16.44
5478	DRB1*13:23	B2RHG4	112	126	RKVYVVANVDNAVKT	17.41
5479	DRB1*13:23	B2RHG4	195	209	QIVPIIVNGSLSEFK	17.62
5480	DRB1*13:23	B2RHG4	111	125	ERKVYVVANVDNAVK	18.64
5481	DRB1*13:23	B2RHG4	197	211	VPIIVNGSLSEFKFR	19.26
5482	DRB1*13:23	B2RHG4	114	128	VYVVANVDNAVKTAL	19.63
5483	DRB1*13:23	B2RHG4	194	208	FQIVPIIVNGSLSEF	23.08
5484	DRB1*13:23	B2RHG4	193	207	KFQIVPIIVNGSLSE	30.08
5485	DRB1*13:23	B2RHG4	198	212	PIIVNGSLSEFKFRY	30.11
5486	DRB1*13:23	B2RHG4	110	124	GERKVYVVANVDNAV	31.21
5487	DRB1*13:23	B2RHG4	115	129	YVVANVDNAVKTALD	33.71
5488	DRB1*13:23	B2RHG4	183	197	KVELNISLSEKFQIV	33.83
5489	DRB1*13:23	B2RHG4	167	181	LANRLLDNVPLVRAI	40.46
5490	DRB1*13:23	B2RHG4	168	182	ANRLLDNVPLVRAIA	40.81
5491	DRB1*13:23	B2RHG4	182	196	AKVELNISLSEKFQI	43.79
5492	DRB1*13:26	B2RH58	260	274	RPEFVMMLKLKKTGT	35.23
5493	DRB1*13:26	B2RH58	258	272	EGRPEFVMMLKLKKT	36.60
5494	DRB1*13:26	B2RH58	259	273	GRPEFVMMLKLKKTG	36.87
5495	DRB1*13:26	B2RH58	261	275	PEFVMMLKLKKTGTD	47.39
5496	DRB1*13:26	B2RH59	284	298	TRNHFYKMILKKAKA	43.17
5497	DRB1*13:26	B2RH59	285	299	RNHFYKMILKKAKAP	45.96
5498	DRB1*13:50	A0PA81	33	47	RPFRLTVRAWDADMQ	30.44
5499	DRB1*13:50	A0PA81	30	44	DCPRPFRLTVRAWDA	34.41
5500	DRB1*13:50	A0PA81	32	46	PRPFRLTVRAWDADM	35.97

5501	DRB1*13:50	A0PA81	166	180	TAQVHIIIRGYQEWL	41.46
5502	DRB1*13:50	A0PA81	31	45	CPRPFRLTVRAWDAD	44.40
5503	DRB1*13:50	A0PA81	165	179	RTAQVHIIIRGYQEW	48.52
5504	DRB1*13:50	A0PA81	167	181	AQVHIIIRGYQEWLE	49.34
5505	DRB1*13:50	B2RH54	196	210	KIYGLIAKKQSNLFG	12.76
5506	DRB1*13:50	B2RH54	195	209	EKIYGLIAKKQSNLF	13.69
5507	DRB1*13:50	B2RH54	194	208	PEKIYGLIAKKQSNL	17.89
5508	DRB1*13:50	B2RH54	163	177	PLKIKRVHARMAFTE	26.32
5509	DRB1*13:50	B2RH54	162	176	DPLKIKRVHARMAFT	27.34
5510	DRB1*13:50	B2RH54	193	207	VPEKIYGLIAKKQSN	27.53
5511	DRB1*13:50	B2RH54	197	211	IYGLIAKKQSNLFGA	28.64
5512	DRB1*13:50	B2RH54	161	175	NDPLKIKRVHARMAF	34.05
5513	DRB1*13:50	B2RH54	164	178	LKIKRVHARMAFTEI	34.08
5514	DRB1*13:50	B2RH54	172	186	RMAFTEIKVQMSAAY	35.85
5515	DRB1*13:50	B2RH54	192	206	FVPEKIYGLIAKKQS	42.80
5516	DRB1*13:50	B2RH54	171	185	ARMAFTEIKVQMSAA	44.66
5517	DRB1*13:50	B2RH58	258	272	EGRPEFVMMLKLKKT	8.89
5518	DRB1*13:50	B2RH58	259	273	GRPEFVMMLKLKKTG	9.36
5519	DRB1*13:50	B2RH58	260	274	RPEFVMMLKLKKTGT	9.39
5520	DRB1*13:50	B2RH58	261	275	PEFVMMLKLKKTGTD	10.44
5521	DRB1*13:50	B2RH58	257	271	NEGRPEFVMMLKLKK	11.52
5522	DRB1*13:50	B2RH58	262	276	EFVMMLKLKKTGTDD	12.54
5523	DRB1*13:50	B2RH58	656	670	VKNDRFVKSARLKK	23.55
5524	DRB1*13:50	B2RH58	263	277	FVMMLKLKKTGTDDN	30.54
5525	DRB1*13:50	B2RH58	177	191	SIELKRVAAKLRLKK	40.98
5526	DRB1*13:50	B2RH58	175	189	LGSIELKRVAAKLRL	45.78
5527	DRB1*13:50	B2RH58	176	190	GSIELKRVAAKLRLK	45.96
5528	DRB1*13:50	B2RH58	178	192	IELKRVAAKLRLKKP	48.99
5529	DRB1*13:50	B2RH59	284	298	TRNHFYKMILKKAKA	12.67
5530	DRB1*13:50	B2RH59	285	299	RNHFYKMILKKAKAP	13.51
5531	DRB1*13:50	B2RH59	287	301	HFYKMILKKAKAPGR	15.15
5532	DRB1*13:50	B2RH59	286	300	NHFYKMILKKAKAPG	16.24
5533	DRB1*13:50	B2RH59	288	302	FYKMILKKAKAPGRP	18.61
5534	DRB1*13:50	B2RH59	283	297	ITRNHFYKMILKKAK	19.50
5535	DRB1*13:50	B2RH59	155	169	QIQLLRNMAKFSLSV	37.57
5536	DRB1*13:50	B2RH59	154	168	GQIQLLRNMAKFSLS	38.33
5537	DRB1*13:50	B2RH59	153	167	LGQIQLLRNMAKFSL	38.45
5538	DRB1*13:50	B2RH59	156	170	IQLLRNMAKFSLSVT	38.49
5539	DRB1*13:50	B2RH59	503	517	KTLYKYVLTTPQNK	41.30
5540	DRB1*13:50	B2RH59	152	166	NLGQIQLLRNMAKFS	44.67
5541	DRB1*13:50	B2RH59	431	445	EKYQYVFFKANTSSA	45.01
5542	DRB1*13:50	B2RH59	289	303	YKMILKKAKAPGRPT	45.42
5543	DRB1*13:50	B2RH59	432	446	KYQYVFFKANTSSAE	45.72

5544	DRB1*13:61	B2RH54	162	176	DPLKIKRVHARMAFT	35.07
5545	DRB1*13:61	B2RH54	163	177	PLKIKRVHARMAFTE	35.39
5546	DRB1*13:61	B2RH54	161	175	NDPLKIKRVHARMAF	40.14
5547	DRB1*13:61	B2RH54	164	178	LKIKRVHARMAFTEI	47.08
5548	DRB1*13:61	B2RH57	198	212	TKVQILRNAKNSRLL	25.46
5549	DRB1*13:61	B2RH57	199	213	KVQILRNAKNSRLLLE	29.26
5550	DRB1*13:61	B2RH57	169	183	QANISLNRIA AKITL	33.16
5551	DRB1*13:61	B2RH57	200	214	VQILRNAKNSRLLLEG	35.13
5552	DRB1*13:61	B2RH57	197	211	ITKVQILRNAKNSRL	38.37
5553	DRB1*13:61	B2RH57	167	181	TVQANISLNRIA AKI	38.50
5554	DRB1*13:61	B2RH57	170	184	ANISLNRIA AKITLD	42.45
5555	DRB1*13:61	B2RH57	168	182	VQANISLNRIA AKIT	43.53
5556	DRB1*13:61	B2RH57	294	308	HYSIRRNHHYKLDGT	46.56
5557	DRB1*13:61	B2RH57	293	307	HHYSIRRNHHYKLDG	47.99
5558	DRB1*13:61	B2RH57	166	180	GTVQANISLNRIA AK	49.38
5559	DRB1*13:61	B2RH57	292	306	NHHYSIRRNHHYKLD	49.46
5560	DRB1*13:61	B2RH58	438	452	KKIKIRQNPSQFIIN	30.87
5561	DRB1*13:61	B2RH58	437	451	EKKIKIRQNPSQFII	31.72
5562	DRB1*13:61	B2RH58	439	453	KIKIRQNPSQFIINT	32.55
5563	DRB1*13:61	B2RH58	177	191	SIELKRVA AKLRLKK	37.85
5564	DRB1*13:61	B2RH58	176	190	GSIELKRVA AKLRLK	45.63
5565	DRB1*13:61	B2RH58	178	192	IELKRVA AKLRLK KP	49.85
5566	DRB1*13:61	B2RH59	155	169	QIQLLRNMAKFSLSV	36.17
5567	DRB1*13:61	B2RH59	154	168	GQIQLLRNMAKFSLS	41.43
5568	DRB1*13:61	B2RH59	133	147	LETIRMWARISYPSI	43.34
5569	DRB1*13:61	B2RH59	153	167	LGQIQLLRNMAKFSL	44.43
5570	DRB1*13:61	B2RH59	156	170	IQLLRNMAKFSLSVT	48.52
5571	DRB1*13:66	A0PA81	33	47	RPFR LTVRAW DADMQ	43.96
5572	DRB1*13:66	A0PA81	30	44	DCPRPFR LTVRAW DA	47.70
5573	DRB1*13:66	B2RH58	546	560	HWEYYTLNPLRLIYH	37.63
5574	DRB1*13:66	B2RH58	545	559	DHWEYYTLNPLRLIY	37.93
5575	DRB1*13:66	B2RH58	437	451	EKKIKIRQNPSQFII	40.29
5576	DRB1*13:66	B2RH58	438	452	KKIKIRQNPSQFIIN	40.94
5577	DRB1*13:66	B2RH58	547	561	WEYYTLNPLRLIYHS	42.41
5578	DRB1*13:66	B2RH58	439	453	KIKIRQNPSQFIINT	43.10
5579	DRB1*13:66	B2RH58	544	558	QDHW EYYTLNPLRLI	45.29
5580	DRB1*13:96	A0PA81	70	84	IDRLMM DAAQVAARK	49.66
5581	DRB1*13:96	B2RH54	311	325	YYPVLVNFNSNNYTY	38.25
5582	DRB1*13:96	B2RH54	92	106	RTL VVMANTGAMELV	43.74
5583	DRB1*13:96	B2RH54	36	50	SVVLKTSNSNRAFGV	45.29
5584	DRB1*13:96	B2RH57	237	251	SAQSIIQASAPLYVY	18.92
5585	DRB1*13:96	B2RH57	238	252	AQSIIQASAPLYVYE	19.89
5586	DRB1*13:96	B2RH57	239	253	QSIIQASAPLYVYEN	22.81

5587	DRB1*13:96	B2RH57	169	183	QANISLNRIA AKITL	26.65
5588	DRB1*13:96	B2RH57	236	250	GSAQSIIQASAPLYV	28.38
5589	DRB1*13:96	B2RH57	294	308	HYSIRRNHHYKLDGT	31.15
5590	DRB1*13:96	B2RH57	292	306	NHHYSIRRNHHYKLD	31.55
5591	DRB1*13:96	B2RH57	167	181	TVQANISLNRIA AKI	31.82
5592	DRB1*13:96	B2RH57	293	307	HHYSIRRNHHYKLDG	32.29
5593	DRB1*13:96	B2RH57	240	254	SIIQASAPLYVYENI	32.93
5594	DRB1*13:96	B2RH57	170	184	ANISLNRIA AKITLD	33.24
5595	DRB1*13:96	B2RH57	198	212	TKVQILRNAKNSRLL	34.24
5596	DRB1*13:96	B2RH57	168	182	VQANISLNRIA AKIT	35.46
5597	DRB1*13:96	B2RH57	291	305	ANHHYSIRRNHHYKL	35.97
5598	DRB1*13:96	B2RH57	199	213	KVQILRNAKNSRLL	36.68
5599	DRB1*13:96	B2RH57	166	180	GTVQANISLNRIA AK	37.15
5600	DRB1*13:96	B2RH57	295	309	YSIRRNHHYKLDGTI	38.99
5601	DRB1*13:96	B2RH57	200	214	VQILRNAKNSRLL	46.20
5602	DRB1*13:96	B2RH57	171	185	NISLNRIA AKITLDI	49.93
5603	DRB1*13:96	B2RH58	438	452	KKIKIRQNPSQFIIN	10.47
5604	DRB1*13:96	B2RH58	439	453	KIKIRQNPSQFIINT	10.51
5605	DRB1*13:96	B2RH58	437	451	EKKIKIRQNPSQFII	10.58
5606	DRB1*13:96	B2RH58	440	454	IKIRQNPSQFIINTF	13.72
5607	DRB1*13:96	B2RH58	111	125	FKIYLVANVNFSGSF	17.64
5608	DRB1*13:96	B2RH58	436	450	FEKKIKIRQNPSQFI	17.95
5609	DRB1*13:96	B2RH58	112	126	KIYLVANVNFSGSFE	18.25
5610	DRB1*13:96	B2RH58	102	116	YGQFNGNNSFKIYLV	18.47
5611	DRB1*13:96	B2RH58	546	560	HWEYYTLNPLRLIYH	22.10
5612	DRB1*13:96	B2RH58	547	561	WEYYTLNPLRLIYHS	22.17
5613	DRB1*13:96	B2RH58	110	124	SFKIYLVANVNFSGS	22.34
5614	DRB1*13:96	B2RH58	441	455	KIRQNPSQFIINTFG	22.68
5615	DRB1*13:96	B2RH58	101	115	MYGQFNGNNSFKIYL	23.95
5616	DRB1*13:96	B2RH58	545	559	DHWEYYTLNPLRLIY	24.97
5617	DRB1*13:96	B2RH58	133	147	SFLKTLVPNSILLQN	28.02
5618	DRB1*13:96	B2RH58	316	330	EDPVTINGSLSVIEW	28.42
5619	DRB1*13:96	B2RH58	548	562	EYYTLNPLRLIYHSN	28.49
5620	DRB1*13:96	B2RH58	103	117	GQFNGNNSFKIYLVA	28.75
5621	DRB1*13:96	B2RH58	317	331	DPVTINGSLSVIEWT	31.04
5622	DRB1*13:96	B2RH58	318	332	PVTINGSLSVIEWTS	32.07
5623	DRB1*13:96	B2RH58	315	329	EEDPVTINGSLSVIE	32.70
5624	DRB1*13:96	B2RH58	113	127	IYLVANVNFSGSFEP	32.76
5625	DRB1*13:96	B2RH58	109	123	NSFKIYLVANVNFSG	32.85
5626	DRB1*13:96	B2RH58	314	328	NEEDPVTINGSLSVI	33.35
5627	DRB1*13:96	B2RH58	134	148	FLKTLVPNSILLQND	33.86
5628	DRB1*13:96	B2RH58	132	146	TSFLKTLVPNSILLQ	34.14
5629	DRB1*13:96	B2RH58	100	114	SMYGQFNGNNSFKIY	36.27

5630	DRB1*13:96	B2RH58	293	307	KKIRSNHLYDMAVTI	36.56
5631	DRB1*13:96	B2RH58	544	558	QDHWEYYTLNPLRLI	37.90
5632	DRB1*13:96	B2RH58	549	563	YYTLNPLRLIYHSNQ	41.45
5633	DRB1*13:96	B2RH58	135	149	LKTLVPNSILLQNDG	41.61
5634	DRB1*13:96	B2RH58	104	118	QFNGNNSFKIYLVAN	44.38
5635	DRB1*13:96	B2RH58	463	477	EGNLAPNLNNKAIYQ	45.72
5636	DRB1*13:96	B2RH58	292	306	DKKIRSNHLYDMAVT	46.04
5637	DRB1*13:96	B2RH58	291	305	SDKKIRSNHLYDMAV	46.97
5638	DRB1*13:96	B2RH58	462	476	PEGNLAPNLNNKAIY	48.63
5639	DRB1*13:96	B2RH59	520	534	QFRFKSNKVNSAENI	24.10
5640	DRB1*13:96	B2RH59	155	169	QIQLLRNMAKFSLSV	24.63
5641	DRB1*13:96	B2RH59	154	168	GQIQLLRNMAKFSLS	29.51
5642	DRB1*13:96	B2RH59	521	535	FRFKSNKVNSAENIA	30.41
5643	DRB1*13:96	B2RH59	153	167	LGQIQLLRNMAKFSL	31.78
5644	DRB1*13:96	B2RH59	278	292	KVRYNITRNHFYKMI	33.42
5645	DRB1*13:96	B2RH59	156	170	IQLLRNMAKFSLSVT	34.95
5646	DRB1*13:96	B2RH59	279	293	VRYNITRNHFYKMIL	34.99
5647	DRB1*13:96	B2RH59	280	294	RYNITRNHFYKMILK	38.07
5648	DRB1*13:96	B2RH59	519	533	LQFRFKSNKVNSAEN	38.92
5649	DRB1*13:96	B2RH59	277	291	NKVRYNITRNHFYKM	40.10
5650	DRB1*13:96	B2RH59	418	432	NPDLKRSVTVLVREK	40.43
5651	DRB1*13:96	B2RH59	518	532	ELQFRFKSNKVNSAE	43.89
5652	DRB1*13:96	B2RH59	332	346	SGMLTVDHTYTMVQ	44.09
5653	DRB1*13:96	B2RH59	416	430	QGNPDLKRSVTVLVR	45.23
5654	DRB1*13:96	B2RH59	417	431	GNPDLKRSVTVLVRE	47.31
5655	DRB1*13:96	B2RH59	331	345	GSGMLTVDHTYTMV	48.20
5656	DRB1*13:96	B2RH59	419	433	PDLKRSVTVLVREKY	48.48
5657	DRB1*13:96	B2RHG4	113	127	KVYVVANVDNAVKTA	19.82
5658	DRB1*13:96	B2RHG4	112	126	RKVYVVANVDNAVKT	21.79
5659	DRB1*13:96	B2RHG4	196	210	IVPIIVNGSLSEFKF	22.41
5660	DRB1*13:96	B2RHG4	111	125	ERKVYVVANVDNAV	24.28
5661	DRB1*13:96	B2RHG4	195	209	QIVPIIVNGSLSEFK	26.18
5662	DRB1*13:96	B2RHG4	114	128	VYVVANVDNAVKTAL	27.29
5663	DRB1*13:96	B2RHG4	197	211	VPIIVNGSLSEFKFR	27.91
5664	DRB1*13:96	B2RHG4	194	208	FQIVPIIVNGSLSEF	34.37
5665	DRB1*13:96	B2RHG4	167	181	LANRLLDNVPLVRAI	41.46
5666	DRB1*13:96	B2RHG4	110	124	GERKVYVVANVDNAV	42.52
5667	DRB1*13:96	B2RHG4	168	182	ANRLLDNVPLVRAIA	42.65
5668	DRB1*13:96	B2RHG4	183	197	KVELNISLSEKFQIV	46.31
5669	DRB1*13:96	B2RHG4	198	212	PIIVNGSLSEFKFRY	46.86
5670	DRB1*13:97	A0PA81	70	84	IDRLMMDAAQVAARK	39.01
5671	DRB1*13:97	A0PA81	277	291	YIDLRGANLNVLVSV	39.07
5672	DRB1*13:97	A0PA81	69	83	RIDRLMMDAAQVAAR	45.06

5673	DRB1*13:97	AOPA81	278	292	IDLRGANLNVLVSVT	49.36
5674	DRB1*13:97	B2RH54	36	50	SVVLKTSNSNRAFGV	20.93
5675	DRB1*13:97	B2RH54	311	325	YYPVLVNFNSNNYTY	20.98
5676	DRB1*13:97	B2RH54	92	106	RTLVMANTGAMELV	21.77
5677	DRB1*13:97	B2RH54	34	48	TISVVLKTSNSNRAF	25.38
5678	DRB1*13:97	B2RH54	35	49	ISVVLKTSNSNRAFG	26.95
5679	DRB1*13:97	B2RH54	91	105	QRTLVMANTGAMEL	27.58
5680	DRB1*13:97	B2RH54	37	51	VVLKTSNSNRAFGVG	27.77
5681	DRB1*13:97	B2RH54	312	326	YPVLVNFNSNNYTYD	27.89
5682	DRB1*13:97	B2RH54	310	324	TYYPVLVNFNSNNYT	29.10
5683	DRB1*13:97	B2RH54	175	189	FTEIKVQMSAAYDNI	29.23
5684	DRB1*13:97	B2RH54	93	107	TLVVMANTGAMELVG	31.57
5685	DRB1*13:97	B2RH54	238	252	ANVPWLSRNYVAPAA	33.41
5686	DRB1*13:97	B2RH54	240	254	VPWLSRNYVAPAADA	34.18
5687	DRB1*13:97	B2RH54	174	188	AFTEIKVQMSAAYDN	37.35
5688	DRB1*13:97	B2RH54	173	187	MAFTEIKVQMSAAYD	37.44
5689	DRB1*13:97	B2RH54	313	327	PVLVNFNSNNYTYDS	38.88
5690	DRB1*13:97	B2RH54	239	253	NVPWLSRNYVAPAAD	40.83
5691	DRB1*13:97	B2RH54	172	186	RMAFTEIKVQMSAAY	42.17
5692	DRB1*13:97	B2RH54	309	323	KTYYPVLVNFNSNNY	42.37
5693	DRB1*13:97	B2RH54	176	190	TEIKVQMSAAYDNIY	43.31
5694	DRB1*13:97	B2RH54	94	108	LVVMANTGAMELVGK	45.03
5695	DRB1*13:97	B2RH54	90	104	GQRTLVMANTGAME	46.08
5696	DRB1*13:97	B2RH57	237	251	SAQSIIQASAPLYVY	11.85
5697	DRB1*13:97	B2RH57	238	252	AQSIIQASAPLYVYE	12.76
5698	DRB1*13:97	B2RH57	239	253	QSIIQASAPLYVYEN	14.28
5699	DRB1*13:97	B2RH57	236	250	GSAQSIIQASAPLYV	15.74
5700	DRB1*13:97	B2RH57	169	183	QANISLNRIA AKITL	19.39
5701	DRB1*13:97	B2RH57	240	254	SIIQASAPLYVYENI	20.41
5702	DRB1*13:97	B2RH57	292	306	NHHYSIRRNHHYKLD	21.72
5703	DRB1*13:97	B2RH57	294	308	HYSIRRNHHYKLDGT	22.51
5704	DRB1*13:97	B2RH57	293	307	HHYSIRRNHHYKLDG	23.15
5705	DRB1*13:97	B2RH57	167	181	TVQANISLNRIA AKI	23.75
5706	DRB1*13:97	B2RH57	291	305	ANHHYSIRRNHHYKL	23.75
5707	DRB1*13:97	B2RH57	168	182	VQANISLNRIA AKIT	24.28
5708	DRB1*13:97	B2RH57	198	212	TKVQILRNAKNSRLL	25.77
5709	DRB1*13:97	B2RH57	170	184	ANISLNRIA AKITLD	26.50
5710	DRB1*13:97	B2RH57	295	309	YSIRRNHHYKLDGTI	26.79
5711	DRB1*13:97	B2RH57	199	213	KVQILRNAKNSRLL	26.99
5712	DRB1*13:97	B2RH57	166	180	GTVQANISLNRIA AK	28.93
5713	DRB1*13:97	B2RH57	200	214	VQILRNAKNSRLL	33.06
5714	DRB1*13:97	B2RH57	171	185	NISLNRIA AKITLDI	37.21
5715	DRB1*13:97	B2RH57	192	206	SDVIKITKVQILRNA	39.10

5716	DRB1*13:97	B2RH57	191	205	GSDVIKITKVQILRN	43.33
5717	DRB1*13:97	B2RH57	241	255	IIQASAPLYVYENIG	43.44
5718	DRB1*13:97	B2RH57	190	204	PGSDVIKITKVQILR	44.49
5719	DRB1*13:97	B2RH57	197	211	ITKVQILRNAKNSRL	44.86
5720	DRB1*13:97	B2RH57	193	207	DVIKITKVQILRNAK	48.34
5721	DRB1*13:97	B2RH58	438	452	KKIKIRQNPSQFIIN	8.14
5722	DRB1*13:97	B2RH58	437	451	EKKIKIRQNPSQFII	8.15
5723	DRB1*13:97	B2RH58	439	453	KIKIRQNPSQFIINT	8.25
5724	DRB1*13:97	B2RH58	440	454	IKIRQNPSQFIINTF	9.98
5725	DRB1*13:97	B2RH58	102	116	YGQFNGNNSFKIYLV	10.61
5726	DRB1*13:97	B2RH58	436	450	FEKKIKIRQNPSQFI	12.83
5727	DRB1*13:97	B2RH58	101	115	MYGQFNGNNSFKIYL	12.97
5728	DRB1*13:97	B2RH58	111	125	FKIYLVANVNFSGSF	14.08
5729	DRB1*13:97	B2RH58	112	126	KIYLVANVNFSGSFE	14.30
5730	DRB1*13:97	B2RH58	441	455	KIRQNPSQFIINTFG	15.02
5731	DRB1*13:97	B2RH58	103	117	GQFNGNNSFKIYLVA	15.65
5732	DRB1*13:97	B2RH58	316	330	EDPVTINGSLSVIEW	17.29
5733	DRB1*13:97	B2RH58	110	124	SFKIYLVANVNFSGS	17.35
5734	DRB1*13:97	B2RH58	546	560	HWEYYTLNPLRLIYH	17.57
5735	DRB1*13:97	B2RH58	547	561	WEYYTLNPLRLIYHS	17.74
5736	DRB1*13:97	B2RH58	317	331	DPVTINGSLSVIEWT	17.77
5737	DRB1*13:97	B2RH58	100	114	SMYGQFNGNNSFKIY	18.53
5738	DRB1*13:97	B2RH58	314	328	NEEDPVTINGSLSVI	18.64
5739	DRB1*13:97	B2RH58	318	332	PVTINGSLSVIEWTS	18.66
5740	DRB1*13:97	B2RH58	315	329	EEDPVTINGSLSVIE	19.60
5741	DRB1*13:97	B2RH58	545	559	DHWEYYTLNPLRLIY	19.91
5742	DRB1*13:97	B2RH58	133	147	SFLKTLVPNSILLQN	20.96
5743	DRB1*13:97	B2RH58	132	146	TSFLKTLVPNSILLQ	22.28
5744	DRB1*13:97	B2RH58	548	562	EYYTLNPLRLIYHSN	22.29
5745	DRB1*13:97	B2RH58	113	127	IYLVANVNFSGSFEP	24.29
5746	DRB1*13:97	B2RH58	104	118	QFNGNNSFKIYLVAN	26.08
5747	DRB1*13:97	B2RH58	109	123	NSFKIYLVANVNFSG	26.31
5748	DRB1*13:97	B2RH58	134	148	FLKTLVPNSILLQND	26.51
5749	DRB1*13:97	B2RH58	463	477	EGNLAPNLNNKAIYQ	26.89
5750	DRB1*13:97	B2RH58	462	476	PEGNLAPNLNNKAIY	27.02
5751	DRB1*13:97	B2RH58	464	478	GNLAPNLNNKAIYQI	27.60
5752	DRB1*13:97	B2RH58	544	558	QDHWEEYTLNPLRLI	30.73
5753	DRB1*13:97	B2RH58	293	307	KKIRSNHLYDMAVTI	31.04
5754	DRB1*13:97	B2RH58	465	479	NLAPNLNNKAIYQIV	31.55
5755	DRB1*13:97	B2RH58	549	563	YYTLNPLRLIYHSNQ	34.50
5756	DRB1*13:97	B2RH58	313	327	LNEEDPVTINGSLSV	36.50
5757	DRB1*13:97	B2RH58	135	149	LKTLVPNSILLQNDG	36.86
5758	DRB1*13:97	B2RH58	99	113	ESMYGQFNGNNSFKI	39.07

5759	DRB1*13:97	B2RH58	291	305	SDKKIRSNHLYDMAV	40.40
5760	DRB1*13:97	B2RH58	556	570	RLIYHSNQQNRYALM	40.49
5761	DRB1*13:97	B2RH58	555	569	LRLIYHSNQQNRYAL	40.80
5762	DRB1*13:97	B2RH58	292	306	DKKIRSNHLYDMAVT	41.15
5763	DRB1*13:97	B2RH58	461	475	QPEGNLAPNLNNKAI	41.62
5764	DRB1*13:97	B2RH58	114	128	YLVANVNFSGSFEPN	44.29
5765	DRB1*13:97	B2RH58	408	422	TKKIKVRSILPINNI	45.58
5766	DRB1*13:97	B2RH58	3	17	TNRILNIICPPILFL	45.73
5767	DRB1*13:97	B2RH58	131	145	ETSFLKTLVPNSILL	46.01
5768	DRB1*13:97	B2RH58	67	81	LTLVIFYKNGTKVWQA	46.93
5769	DRB1*13:97	B2RH58	2	16	RTNRILNIICPPILF	47.87
5770	DRB1*13:97	B2RH59	520	534	QFRFKSNKVNSAENI	16.39
5771	DRB1*13:97	B2RH59	521	535	FRFKSNKVNSAENIA	19.58
5772	DRB1*13:97	B2RH59	155	169	QIQLLRNMAKFSLSV	20.67
5773	DRB1*13:97	B2RH59	278	292	KVRYNITRNHFYKMI	22.66
5774	DRB1*13:97	B2RH59	418	432	NPDLKRSVTVLVREK	23.91
5775	DRB1*13:97	B2RH59	519	533	LQFRFKSNKVNSAEN	23.95
5776	DRB1*13:97	B2RH59	154	168	GQIQLLRNMAKFSLS	24.00
5777	DRB1*13:97	B2RH59	518	532	ELQFRFKSNKVNSAE	24.89
5778	DRB1*13:97	B2RH59	153	167	LGQIQLLRNMAKFSL	25.13
5779	DRB1*13:97	B2RH59	416	430	QGNPDLKRSVTVLVR	25.39
5780	DRB1*13:97	B2RH59	279	293	VRYNITRNHFYKMIL	25.51
5781	DRB1*13:97	B2RH59	417	431	GNPDLKRSVTVLVRE	26.90
5782	DRB1*13:97	B2RH59	419	433	PDLKRSVTVLVREKY	26.93
5783	DRB1*13:97	B2RH59	280	294	RYNITRNHFYKMILK	27.01
5784	DRB1*13:97	B2RH59	277	291	NKVRYNITRNHFYKM	27.23
5785	DRB1*13:97	B2RH59	156	170	IQLLRNMAKFSLSVT	28.44
5786	DRB1*13:97	B2RH59	522	536	RFKSNKVNSAENIAV	31.45
5787	DRB1*13:97	B2RH59	517	531	KELQFRFKSNKVNSA	33.00
5788	DRB1*13:97	B2RH59	420	434	DLKRSVTVLVREKYQ	37.82
5789	DRB1*13:97	B2RH59	152	166	NLGQIQLLRNMAKFS	37.90
5790	DRB1*13:97	B2RH59	332	346	SGMLTVDHTYTMVFVQ	41.71
5791	DRB1*13:97	B2RH59	415	429	VQGNPDLKRSVTVLV	42.54
5792	DRB1*13:97	B2RH59	281	295	YNITRNHFYKMILKK	43.56
5793	DRB1*13:97	B2RH59	157	171	QLLRNMAKFSLSVTP	46.10
5794	DRB1*13:97	B2RH59	331	345	GSGMLTVDHTYTMV FV	48.20
5795	DRB1*13:97	B2RH59	523	537	FKSNKVNSAENIAVK	48.50
5796	DRB1*13:97	B2RHG4	113	127	KVYVVANVDNAVKTA	15.40
5797	DRB1*13:97	B2RHG4	196	210	IVPIIVNGSLSEFKF	16.44
5798	DRB1*13:97	B2RHG4	112	126	RKVYVVANVDNAVKT	17.41
5799	DRB1*13:97	B2RHG4	195	209	QIVPIIVNGSLSEFK	17.62
5800	DRB1*13:97	B2RHG4	111	125	ERKVYVVANVDNAVK	18.64
5801	DRB1*13:97	B2RHG4	197	211	VPIIVNGSLSEFKFR	19.26

5802	DRB1*13:97	B2RHG4	114	128	VYVVANVDNAVKTAL	19.63
5803	DRB1*13:97	B2RHG4	194	208	FQIVPIIVNGSLSEF	23.08
5804	DRB1*13:97	B2RHG4	193	207	KFQIVPIIVNGSLSE	30.08
5805	DRB1*13:97	B2RHG4	198	212	PIIVNGSLSEFKFRY	30.11
5806	DRB1*13:97	B2RHG4	110	124	GERKVYVVANVDNAV	31.21
5807	DRB1*13:97	B2RHG4	115	129	YVVANVDNAVKTALD	33.71
5808	DRB1*13:97	B2RHG4	183	197	KVELNISLSEKFQIV	33.83
5809	DRB1*13:97	B2RHG4	167	181	LANRLLDNVPLVRAI	40.46
5810	DRB1*13:97	B2RHG4	168	182	ANRLLDNVPLVRAIA	40.81
5811	DRB1*13:97	B2RHG4	182	196	AKVELNISLSEKFQI	43.79
5812	DRB1*14:01	B2RH57	190	204	PGSDVIKITKVQILR	32.34
5813	DRB1*14:01	B2RH57	237	251	SAQSIIQASAPLYVY	32.50
5814	DRB1*14:01	B2RH57	192	206	SDVIKITKVQILRNA	33.19
5815	DRB1*14:01	B2RH57	191	205	GSDVIKITKVQILRN	33.31
5816	DRB1*14:01	B2RH57	238	252	AQSIIQASAPLYVYE	33.86
5817	DRB1*14:01	B2RH57	239	253	QSIIQASAPLYVYEN	36.96
5818	DRB1*14:01	B2RH57	193	207	DVIKITKVQILRNAK	40.75
5819	DRB1*14:01	B2RH57	189	203	TPGSDVIKITKVQIL	41.32
5820	DRB1*14:01	B2RH57	240	254	SIIQASAPLYVYENI	46.60
5821	DRB1*14:01	B2RH57	236	250	GSAQSIIQASAPLYV	46.78
5822	DRB1*14:01	B2RHG4	183	197	KVELNISLSEKFQIV	21.46
5823	DRB1*14:01	B2RHG4	185	199	ELNISLSEKFQIVPI	24.61
5824	DRB1*14:01	B2RHG4	186	200	LNISLSEKFQIVPII	25.00
5825	DRB1*14:01	B2RHG4	184	198	VELNISLSEKFQIVP	26.27
5826	DRB1*14:01	B2RHG4	182	196	AKVELNISLSEKFQI	27.34
5827	DRB1*14:01	B2RHG4	174	188	NVPLVRAIAKVELNI	40.29
5828	DRB1*14:01	B2RHG4	187	201	NISLSEKFQIVPIIV	40.45
5829	DRB1*14:01	B2RHG4	175	189	VPLVRAIAKVELNIS	42.57
5830	DRB1*14:01	B2RHG4	173	187	DNVPLVRAIAKVELN	45.10
5831	DRB1*14:01	B2RHG4	172	186	LDNVPLVRAIAKVEL	49.30
5832	DRB1*14:02	B2RH57	169	183	QANISLNRIAAKITL	43.93
5833	DRB1*14:02	B2RH58	439	453	KIKIRQNPSQFIINT	35.66
5834	DRB1*14:02	B2RH58	438	452	KKIKIRQNPSQFIIN	35.68
5835	DRB1*14:02	B2RH58	437	451	EKKIKIRQNPSQFII	38.99
5836	DRB1*14:02	B2RH58	546	560	HWEYYTLNPLRLIYH	40.82
5837	DRB1*14:02	B2RH58	547	561	WEYYTLNPLRLIYHS	41.22
5838	DRB1*14:02	B2RH58	545	559	DHWEYYTLNPLRLIY	48.20
5839	DRB1*14:02	B2RH59	520	534	QFRFKSNKVNSAENI	37.86
5840	DRB1*14:02	B2RH59	155	169	QIQLLRNMAKFSLSV	45.29
5841	DRB1*14:02	B2RH59	519	533	LQFRFKSNKVNSAEN	49.19
5842	DRB1*14:02	B2RH59	154	168	GQIQLLRNMAKFSLS	49.96
5843	DRB1*14:02	B2RHG4	113	127	KVYVVANVDNAVKTA	47.26
5844	DRB1*14:04	B2RH57	192	206	SDVIKITKVQILRNA	35.95

5845	DRB1*14:04	B2RH57	190	204	PGSDVIKITKVQILR	37.00
5846	DRB1*14:04	B2RH57	191	205	GSDVIKITKVQILRN	37.24
5847	DRB1*14:04	B2RH57	237	251	SAQSIIQASAPLYVY	37.92
5848	DRB1*14:04	B2RH57	238	252	AQSIIQASAPLYVYE	38.41
5849	DRB1*14:04	B2RH57	239	253	QSIIQASAPLYVYEN	43.21
5850	DRB1*14:04	B2RH57	193	207	DVIKITKVQILRNAK	43.29
5851	DRB1*14:04	B2RH57	189	203	TPGSDVIKITKVQIL	45.78
5852	DRB1*14:04	B2RHG4	183	197	KVELNISLSEKFQIV	31.05
5853	DRB1*14:04	B2RHG4	185	199	ELNISLSEKFQIVPI	35.29
5854	DRB1*14:04	B2RHG4	184	198	VELNISLSEKFQIVP	35.92
5855	DRB1*14:04	B2RHG4	182	196	AKVELNISLSEKFQI	38.77
5856	DRB1*14:04	B2RHG4	186	200	LNISLSEKFQIVPII	40.59
5857	DRB1*14:06	B2RH54	162	176	DPLKIKRVHARMAFT	28.28
5858	DRB1*14:06	B2RH54	163	177	PLKIKRVHARMAFTE	28.57
5859	DRB1*14:06	B2RH54	161	175	NDPLKIKRVHARMAF	31.64
5860	DRB1*14:06	B2RH54	164	178	LKIKRVHARMAFTEI	38.19
5861	DRB1*14:06	B2RH54	175	189	FTEIKVQMSAAYDNI	49.58
5862	DRB1*14:06	B2RH57	198	212	TKVQILRNAKNSRLL	25.56
5863	DRB1*14:06	B2RH57	199	213	KVQILRNAKNSRLL	27.33
5864	DRB1*14:06	B2RH57	169	183	QANISLNRIA AKITL	30.40
5865	DRB1*14:06	B2RH57	197	211	ITKVQILRNAKNSRL	31.42
5866	DRB1*14:06	B2RH57	168	182	VQANISLNRIA AKIT	35.21
5867	DRB1*14:06	B2RH57	167	181	TVQANISLNRIA AKI	35.24
5868	DRB1*14:06	B2RH57	200	214	VQILRNAKNSRLL	37.12
5869	DRB1*14:06	B2RH57	192	206	SDVIKITKVQILRNA	37.18
5870	DRB1*14:06	B2RH57	193	207	DVIKITKVQILRNAK	37.94
5871	DRB1*14:06	B2RH57	170	184	ANISLNRIA AKITLD	40.12
5872	DRB1*14:06	B2RH57	191	205	GSDVIKITKVQILRN	42.06
5873	DRB1*14:06	B2RH57	194	208	VIKITKVQILRNAKN	42.79
5874	DRB1*14:06	B2RH57	196	210	KITKVQILRNAKNSR	44.35
5875	DRB1*14:06	B2RH57	166	180	GTVQANISLNRIA AK	44.98
5876	DRB1*14:06	B2RH58	177	191	SIELKRVA AKLRLKK	27.36
5877	DRB1*14:06	B2RH58	176	190	GSIELKRVA AKLRLK	30.82
5878	DRB1*14:06	B2RH58	260	274	RPEFVMMLKLKKTGT	31.43
5879	DRB1*14:06	B2RH58	178	192	IELKRVA AKLRLK KP	32.84
5880	DRB1*14:06	B2RH58	175	189	LGSIELKRVA AKLRL	33.16
5881	DRB1*14:06	B2RH58	259	273	GRPEFVMMLKLKKTG	35.87
5882	DRB1*14:06	B2RH58	258	272	EGRPEFVMMLKLKKT	37.70
5883	DRB1*14:06	B2RH58	261	275	PEFVMMLKLKKTGTD	38.21
5884	DRB1*14:06	B2RH58	410	424	KIKVRSILPINNIPK	42.05
5885	DRB1*14:06	B2RH58	179	193	ELKRVA AKLRLK KP	42.22
5886	DRB1*14:06	B2RH58	597	611	RAEIQLVDK LQREQA	42.38
5887	DRB1*14:06	B2RH58	412	426	KVRSILPINNIPKDI	42.89

5888	DRB1*14:06	B2RH58	438	452	KKIKIRQNPSQFIIN	43.90
5889	DRB1*14:06	B2RH58	413	427	VRSILPINNIPKDIS	45.23
5890	DRB1*14:06	B2RH58	437	451	EKKIKIRQNPSQFII	46.30
5891	DRB1*14:06	B2RH58	174	188	QLGSIELKRVAAKLR	46.71
5892	DRB1*14:06	B2RH58	411	425	IKVRSILPINNIPKD	47.47
5893	DRB1*14:06	B2RH58	262	276	EFVMMMLKLKKTGTDD	48.23
5894	DRB1*14:06	B2RH58	596	610	TRAEIQLVDKLQREQ	49.39
5895	DRB1*14:06	B2RH58	439	453	KIKIRQNPSQFIINT	49.54
5896	DRB1*14:06	B2RH59	154	168	GQIQLLRNMAKFSL	20.16
5897	DRB1*14:06	B2RH59	155	169	QIQLLRNMAKFSLSV	20.64
5898	DRB1*14:06	B2RH59	153	167	LGQIQLLRNMAKFSL	22.10
5899	DRB1*14:06	B2RH59	156	170	IQLLRNMAKFSLSVT	27.06
5900	DRB1*14:06	B2RH59	152	166	NLGQIQLLRNMAKFS	30.32
5901	DRB1*14:06	B2RH59	157	171	QLLRNMAKFSLSVTP	37.65
5902	DRB1*14:06	B2RH59	151	165	QNLGQIQLLRNMAKF	39.41
5903	DRB1*14:06	B2RH59	133	147	LETIRMWARISYPSI	42.21
5904	DRB1*14:06	B2RH59	132	146	DLETIRMWARISYPS	46.61
5905	DRB1*14:06	B2RH59	134	148	ETIRMWARISYPSIA	49.60
5906	DRB1*14:06	B2RHG4	168	182	ANRLLDNVPLVRAIA	48.41
5907	DRB1*14:12	B2RH54	162	176	DPLKIKRVHARMAFT	25.78
5908	DRB1*14:12	B2RH54	163	177	PLKIKRVHARMAFTE	25.87
5909	DRB1*14:12	B2RH54	161	175	NDPLKIKRVHARMAF	30.40
5910	DRB1*14:12	B2RH54	164	178	LKIKRVHARMAFTEI	32.95
5911	DRB1*14:12	B2RH57	198	212	TKVQILRNAKNSRLL	46.69
5912	DRB1*14:12	B2RH57	169	183	QANISLNRIA AKITL	49.05
5913	DRB1*14:12	B2RH58	177	191	SIELKRVAAKLRLKK	30.72
5914	DRB1*14:12	B2RH58	175	189	LGSIELKRVAAKLRL	31.91
5915	DRB1*14:12	B2RH58	176	190	GSIELKRVAAKLRLK	34.06
5916	DRB1*14:12	B2RH58	178	192	IELKRVAAKLRLKKP	37.49
5917	DRB1*14:12	B2RH58	174	188	QLGSIELKRVAAKLR	43.46
5918	DRB1*14:12	B2RH58	408	422	TKKIKVRSILPINNI	46.26
5919	DRB1*14:12	B2RH58	182	196	RVAAKLRLKKPVLNI	47.51
5920	DRB1*14:12	B2RH58	179	193	ELKRVAAKLRLKKPV	47.60
5921	DRB1*14:12	B2RH58	260	274	RPEFVMMMLKLKKTGT	48.15
5922	DRB1*14:12	B2RH58	183	197	VAAKLRLKKPVLNIS	49.88
5923	DRB1*14:12	B2RH59	154	168	GQIQLLRNMAKFSL	36.78
5924	DRB1*14:12	B2RH59	155	169	QIQLLRNMAKFSLSV	38.46
5925	DRB1*14:12	B2RH59	153	167	LGQIQLLRNMAKFSL	40.26
5926	DRB1*14:12	B2RH59	156	170	IQLLRNMAKFSLSVT	44.73
5927	DRB1*14:32	B2RH54	128	142	AGLIMTAEPKTIVLK	33.75
5928	DRB1*14:32	B2RH54	136	150	PKTIVLKAGKNYIGY	34.91
5929	DRB1*14:32	B2RH54	137	151	KTIVLKAGKNYIGYS	35.71
5930	DRB1*14:32	B2RH54	129	143	GLIMTAEPKTIVLKA	36.89

5931	DRB1*14:32	B2RH54	175	189	FTEIKVQMSAAYDNI	38.41
5932	DRB1*14:32	B2RH54	127	141	AAGLIMTAEPKTIVL	38.43
5933	DRB1*14:32	B2RH54	135	149	EPKTIVLKAGKNYIG	41.44
5934	DRB1*14:32	B2RH54	174	188	AFTEIKVQMSAAYDN	42.82
5935	DRB1*14:32	B2RH54	92	106	RTLVMANTGAMELV	44.44
5936	DRB1*14:32	B2RH54	134	148	AEPKTIVLKAGKNYI	46.12
5937	DRB1*14:32	B2RH54	91	105	QRTLVMANTGAMEL	47.76
5938	DRB1*14:32	B2RH54	163	177	PLKIKRVHARMAFTE	47.86
5939	DRB1*14:32	B2RH54	173	187	MAFTEIKVQMSAAYD	48.08
5940	DRB1*14:32	B2RH54	162	176	DPLKIKRVHARMAFT	49.02
5941	DRB1*14:32	B2RH54	176	190	TEIKVQMSAAYDNIY	49.69
5942	DRB1*14:32	B2RH57	192	206	SDVIKITYVQILRNA	18.36
5943	DRB1*14:32	B2RH57	190	204	PGSDVIKITYVQILR	18.41
5944	DRB1*14:32	B2RH57	191	205	GSDVIKITYVQILRN	18.42
5945	DRB1*14:32	B2RH57	238	252	AQSIIQASAPLYVYE	19.66
5946	DRB1*14:32	B2RH57	237	251	SAQSIIQASAPLYVY	20.84
5947	DRB1*14:32	B2RH57	239	253	QSIIQASAPLYVYEN	20.91
5948	DRB1*14:32	B2RH57	189	203	TPGSDVIKITYVQIL	22.93
5949	DRB1*14:32	B2RH57	193	207	DVIKITYVQILRNAK	23.96
5950	DRB1*14:32	B2RH57	236	250	GSAQSIIQASAPLYV	30.26
5951	DRB1*14:32	B2RH57	240	254	SIIQASAPLYVYENI	30.60
5952	DRB1*14:32	B2RH57	413	427	PNGIGIQRRTNLFFT	35.96
5953	DRB1*14:32	B2RH57	414	428	NGIGIQRRTNLFFTV	36.28
5954	DRB1*14:32	B2RH57	412	426	KPNGIGIQRRTNLFF	38.31
5955	DRB1*14:32	B2RH57	188	202	VTPGSDVIKITYVQI	38.95
5956	DRB1*14:32	B2RH57	194	208	VIKITYVQILRNAKN	39.03
5957	DRB1*14:32	B2RH57	79	93	LNGLWVLDKQKLFAS	40.13
5958	DRB1*14:32	B2RH57	78	92	GLNGLWVLDKQKLFA	41.43
5959	DRB1*14:32	B2RH57	77	91	EGLNGLWVLDKQKLF	43.67
5960	DRB1*14:32	B2RH57	63	77	GEDLIKKVRIFVFRE	45.64
5961	DRB1*14:32	B2RH57	80	94	NGLWVLDKQKLFASG	46.66
5962	DRB1*14:32	B2RH57	415	429	GIGIQRRTNLFFTV	46.95
5963	DRB1*14:32	B2RH57	62	76	SGEDLIKKVRIFVFR	48.65
5964	DRB1*14:32	B2RH57	292	306	NHHYSIRRNHHYKLD	49.29
5965	DRB1*14:32	B2RH57	64	78	EDLIKKVRIFVFREG	49.52
5966	DRB1*14:32	B2RH57	199	213	KVQILRNAKNSRLLE	49.91
5967	DRB1*14:32	B2RH58	422	436	IPKDISFTIKNSIGF	31.33
5968	DRB1*14:32	B2RH58	424	438	KDISFTIKNSIGFEK	32.92
5969	DRB1*14:32	B2RH58	437	451	EKKIKIRQNPSQFII	33.82
5970	DRB1*14:32	B2RH58	438	452	KKIKIRQNPSQFIIN	34.02
5971	DRB1*14:32	B2RH58	408	422	TKKIKVRSILPINNI	34.06
5972	DRB1*14:32	B2RH58	423	437	PKDISFTIKNSIGFE	34.54
5973	DRB1*14:32	B2RH58	439	453	KIKIRQNPSQFIINT	36.72

5974	DRB1*14:32	B2RH58	132	146	TSFLKTLVPNSILLQ	38.64
5975	DRB1*14:32	B2RH58	409	423	KKIKVRSILPINNIP	40.09
5976	DRB1*14:32	B2RH58	407	421	NTKKIKVRSILPINN	40.33
5977	DRB1*14:32	B2RH58	421	435	NIPKDISFTIKNSIG	41.63
5978	DRB1*14:32	B2RH58	429	443	TIKNSIGFEKKIKIR	42.34
5979	DRB1*14:32	B2RH58	430	444	IKNSIGFEKKIKIRQ	43.72
5980	DRB1*14:32	B2RH58	133	147	SFLKTLVPNSILLQN	44.07
5981	DRB1*14:32	B2RH58	597	611	RAEIQLVDKLQREQA	44.13
5982	DRB1*14:32	B2RH58	406	420	ANTKKIKVRSILPIN	45.91
5983	DRB1*14:32	B2RH58	420	434	NNIPKDISFTIKNSI	46.45
5984	DRB1*14:32	B2RH58	431	445	KNSIGFEKKIKIRQN	46.90
5985	DRB1*14:32	B2RH59	155	169	QIQLLRNMAKFSLSV	20.11
5986	DRB1*14:32	B2RH59	156	170	IQLLRNMAKFSLSVT	20.40
5987	DRB1*14:32	B2RH59	154	168	GQIQLLRNMAKFSLS	21.99
5988	DRB1*14:32	B2RH59	157	171	QLLRNMAKFSLSVTP	26.49
5989	DRB1*14:32	B2RH59	153	167	LGQIQLLRNMAKFSL	28.64
5990	DRB1*14:32	B2RH59	422	436	KRSVTVLVREKYQYV	29.89
5991	DRB1*14:32	B2RH59	419	433	PDLKRSVTVLVREKY	31.10
5992	DRB1*14:32	B2RH59	420	434	DLKRSVTVLVREKYQ	33.24
5993	DRB1*14:32	B2RH59	423	437	RSVTVLVREKYQYVF	34.58
5994	DRB1*14:32	B2RH59	133	147	LETIRMWARISYPSI	35.11
5995	DRB1*14:32	B2RH59	421	435	LKRSVTVLVREKYQY	36.33
5996	DRB1*14:32	B2RH59	132	146	DLETIRMWARISYPS	38.44
5997	DRB1*14:32	B2RH59	459	473	GNELLISAKLPDVLN	38.72
5998	DRB1*14:32	B2RH59	460	474	NELLISAKLPDVLNA	39.85
5999	DRB1*14:32	B2RH59	458	472	QGNELLISAKLPDVL	40.88
6000	DRB1*14:32	B2RH59	134	148	ETIRMWARISYPSIA	41.13
6001	DRB1*14:32	B2RH59	97	111	VERRIHFIANYELAD	41.33
6002	DRB1*14:32	B2RH59	98	112	ERRIHFIANYELADP	41.68
6003	DRB1*14:32	B2RH59	131	145	DDLETIRMWARISYP	42.81
6004	DRB1*14:32	B2RH59	37	51	RVSGSIVSLEHHGLR	43.50
6005	DRB1*14:32	B2RH59	96	110	EVERRIHFIANYELA	44.19
6006	DRB1*14:32	B2RH59	268	282	YYKLDFVDTNKVRYN	46.11
6007	DRB1*14:32	B2RH59	39	53	SGSIVSLEHHGLRGA	47.20
6008	DRB1*14:32	B2RH59	424	438	SVTVLVREKYQYVFF	47.46
6009	DRB1*14:32	B2RH59	418	432	NPDLKRSVTVLVREK	47.48
6010	DRB1*14:32	B2RH59	99	113	RRIHFIANYELADPS	47.54
6011	DRB1*14:32	B2RH59	267	281	TTYKLDFVDTNKVRY	49.55
6012	DRB1*14:32	B2RHG4	183	197	KVELNISLSEKFQIV	15.00
6013	DRB1*14:32	B2RHG4	185	199	ELNISLSEKFQIVPI	15.36
6014	DRB1*14:32	B2RHG4	184	198	VELNISLSEKFQIVP	15.84
6015	DRB1*14:32	B2RHG4	186	200	LNISLSEKFQIVPII	17.54
6016	DRB1*14:32	B2RHG4	182	196	AKVELNISLSEKFQI	20.81

6017	DRB1*14:32	B2RHG4	175	189	VPLVRAIAKVELNIS	22.02
6018	DRB1*14:32	B2RHG4	174	188	NVPLVRAIAKVELNI	22.18
6019	DRB1*14:32	B2RHG4	173	187	DNVPLVRAIAKVELN	24.76
6020	DRB1*14:32	B2RHG4	176	190	PLVRAIAKVELNISL	26.01
6021	DRB1*14:32	B2RHG4	187	201	NISLSEKFQIVPIIV	29.85
6022	DRB1*14:32	B2RHG4	172	186	LDNVPLVRAIAKVEL	30.27
6023	DRB1*14:32	B2RHG4	177	191	LVRAIAKVELNISLS	40.40
6024	DRB1*14:32	B2RHG4	181	195	IAKVELNISLSEKFQ	49.09
6025	DRB1*14:38	B2RHG4	183	197	KVELNISLSEKFQIV	38.43
6026	DRB1*14:38	B2RHG4	185	199	ELNISLSEKFQIVPI	44.22
6027	DRB1*14:38	B2RHG4	186	200	LNISLSEKFQIVPII	45.65
6028	DRB1*14:38	B2RHG4	184	198	VELNISLSEKFQIVP	46.00
6029	DRB1*14:54	B2RH57	190	204	PGSDVIKITYKVQILR	32.34
6030	DRB1*14:54	B2RH57	237	251	SAQSIIQASAPLYVY	32.50
6031	DRB1*14:54	B2RH57	192	206	SDVIKITYKVQILRNA	33.19
6032	DRB1*14:54	B2RH57	191	205	GSDVIKITYKVQILRN	33.31
6033	DRB1*14:54	B2RH57	238	252	AQSIIQASAPLYVYE	33.86
6034	DRB1*14:54	B2RH57	239	253	QSIIQASAPLYVYEN	36.96
6035	DRB1*14:54	B2RH57	193	207	DVIKITYKVQILRNAK	40.75
6036	DRB1*14:54	B2RH57	189	203	TPGSDVIKITYKVQIL	41.32
6037	DRB1*14:54	B2RH57	240	254	SIIQASAPLYVYENI	46.60
6038	DRB1*14:54	B2RH57	236	250	GSAQSIIQASAPLYV	46.78
6039	DRB1*14:54	B2RHG4	183	197	KVELNISLSEKFQIV	21.46
6040	DRB1*14:54	B2RHG4	185	199	ELNISLSEKFQIVPI	24.61
6041	DRB1*14:54	B2RHG4	186	200	LNISLSEKFQIVPII	25.00
6042	DRB1*14:54	B2RHG4	184	198	VELNISLSEKFQIVP	26.27
6043	DRB1*14:54	B2RHG4	182	196	AKVELNISLSEKFQI	27.34
6044	DRB1*14:54	B2RHG4	174	188	NVPLVRAIAKVELNI	40.29
6045	DRB1*14:54	B2RHG4	187	201	NISLSEKFQIVPIIV	40.45
6046	DRB1*14:54	B2RHG4	175	189	VPLVRAIAKVELNIS	42.57
6047	DRB1*14:54	B2RHG4	173	187	DNVPLVRAIAKVELN	45.10
6048	DRB1*14:54	B2RHG4	172	186	LDNVPLVRAIAKVEL	49.30
6049	DRB1*15:01	A0PA81	230	244	PIIRVYPTLDTTPLH	21.22
6050	DRB1*15:01	A0PA81	231	245	IIRVYPTLDTTPLHL	21.99
6051	DRB1*15:01	A0PA81	229	243	SPIIRVYPTLDTTPL	22.92
6052	DRB1*15:01	A0PA81	227	241	FISPIIRVYPTLDTT	24.73
6053	DRB1*15:01	A0PA81	271	285	GKMLNIYIDLRGANL	31.62
6054	DRB1*15:01	A0PA81	228	242	ISPIIRVYPTLDTTP	32.03
6055	DRB1*15:01	A0PA81	269	283	VIGKMLNIYIDLRGA	33.84
6056	DRB1*15:01	A0PA81	272	286	KMLNIYIDLRGANLN	34.44
6057	DRB1*15:01	A0PA81	267	281	IPVIGKMLNIYIDLR	34.93
6058	DRB1*15:01	A0PA81	268	282	PVIGKMLNIYIDLRG	35.46
6059	DRB1*15:01	A0PA81	270	284	IGKMLNIYIDLRGAN	38.74

6060	DRB1*15:01	A0PA81	226	240	DFISPIIRVYPTLDT	40.97
6061	DRB1*15:01	B2RH54	163	177	PLKIKRVHARMAFTE	20.32
6062	DRB1*15:01	B2RH54	162	176	DPLKIKRVHARMAFT	20.37
6063	DRB1*15:01	B2RH54	164	178	LKIKRVHARMAFTEI	24.38
6064	DRB1*15:01	B2RH54	161	175	NDPLKIKRVHARMAF	25.79
6065	DRB1*15:01	B2RH54	91	105	QRTLVMANTGAMEL	40.46
6066	DRB1*15:01	B2RH54	311	325	YYPVLVNFNSNNYTY	46.10
6067	DRB1*15:01	B2RH57	199	213	KVQILRNAKNSRLLE	40.94
6068	DRB1*15:01	B2RH57	198	212	TKVQILRNAKNSRLL	43.28
6069	DRB1*15:01	B2RH57	200	214	VQILRNAKNSRLLEG	45.44
6070	DRB1*15:01	B2RH57	244	258	ASAPLYVYENIGSDS	47.89
6071	DRB1*15:01	B2RH58	357	371	TTEIELDYFSSHSL	23.15
6072	DRB1*15:01	B2RH58	358	372	TEIELDYFSSHSLLP	23.98
6073	DRB1*15:01	B2RH58	66	80	RLTLVIFYKNGTKVWQ	24.65
6074	DRB1*15:01	B2RH58	65	79	ERLTLVIFYKNGTKVW	25.02
6075	DRB1*15:01	B2RH58	360	374	IELDYFSSHSLPPA	29.03
6076	DRB1*15:01	B2RH58	359	373	EIELDYFSSHSLPP	30.73
6077	DRB1*15:01	B2RH58	64	78	IERLTLVIFYKNGTKV	31.20
6078	DRB1*15:01	B2RH58	67	81	LTLVIFYKNGTKVWQA	32.45
6079	DRB1*15:01	B2RH59	96	110	EVERRIHFANYELA	12.94
6080	DRB1*15:01	B2RH59	97	111	VERRIHFIANYELAD	16.22
6081	DRB1*15:01	B2RH59	99	113	RRIHFANYELADPS	17.08
6082	DRB1*15:01	B2RH59	98	112	ERRIHFIANYELADP	20.99
6083	DRB1*15:01	B2RH59	95	109	SEVERRIHFIANYEL	26.68
6084	DRB1*15:01	B2RH59	100	114	RIHFANYELADPSV	28.30
6085	DRB1*15:01	B2RH59	431	445	EKYQYVFFKANTSSA	31.22
6086	DRB1*15:01	B2RH59	430	444	REKYQYVFFKANTSS	35.97
6087	DRB1*15:01	B2RH59	153	167	LGQIQLLRNMAKFSL	37.50
6088	DRB1*15:01	B2RH59	432	446	KYQYVFFKANTSSAE	37.82
6089	DRB1*15:01	B2RH59	154	168	GQIQLLRNMAKFSLS	40.11
6090	DRB1*15:01	B2RH59	155	169	QIQLLRNMAKFSLSV	44.38
6091	DRB1*15:01	B2RH59	433	447	YQYVFFKANTSSAEN	47.32
6092	DRB1*15:01	B2RH59	429	443	VREKYQYVFFKANTS	47.50
6093	DRB1*15:02	A0PA81	263	277	GVPFIPVIGKMLNIY	44.20
6094	DRB1*15:02	A0PA81	264	278	VPFIPVIGKMLNIYI	49.87
6095	DRB1*15:02	B2RH57	2	16	KMKYFHHPSGLLPRL	38.85
6096	DRB1*15:02	B2RH58	243	257	SVHFYSYNEWALNN	34.83
6097	DRB1*15:02	B2RH58	108	122	NNSFKIYLVANVNFS	35.17
6098	DRB1*15:02	B2RH58	242	256	SSVHFYSYNEWALN	36.90
6099	DRB1*15:02	B2RH58	109	123	NSFKIYLVANVNFSG	38.51
6100	DRB1*15:02	B2RH58	244	258	VHFYSYNEWALNNE	40.45
6101	DRB1*15:02	B2RH58	110	124	SFKIYLVANVNFSGS	43.55
6102	DRB1*15:02	B2RH58	107	121	GNNSFKIYLVANVNF	43.77

6103	DRB1*15:02	B2RH58	545	559	DHWEYYTLNPLRLIY	45.40
6104	DRB1*15:02	B2RH58	546	560	HWEYYTLNPLRLIYH	45.71
6105	DRB1*15:02	B2RH58	241	255	NSSVHFYSYNEWAL	48.30
6106	DRB1*15:02	B2RH58	544	558	QDHWEYYTLNPLRLI	48.66
6107	DRB1*15:02	B2RH59	431	445	EKYQYVFFKANTSSA	21.57
6108	DRB1*15:02	B2RH59	432	446	KYQYVFFKANTSSAE	24.71
6109	DRB1*15:02	B2RH59	430	444	REKYQYVFFKANTSS	25.43
6110	DRB1*15:02	B2RH59	433	447	YQYVFFKANTSSAEN	30.45
6111	DRB1*15:02	B2RH59	429	443	VREKYQYVFFKANTS	34.16
6112	DRB1*15:02	B2RH59	96	110	EVERRIHFIANYELA	34.20
6113	DRB1*15:02	B2RH59	97	111	VERRIHFIANYELAD	39.14
6114	DRB1*15:02	B2RH59	99	113	RRIHFIANYELADPS	46.73
6115	DRB1*15:02	B2RH59	434	448	QYVFFKANTSSAENN	47.40
6116	DRB1*15:02	B2RH59	98	112	ERRIHFIANYELADP	48.39
6117	DRB1*15:03	A0PA81	230	244	PIIRVYPTLDTTPLH	41.34
6118	DRB1*15:03	A0PA81	229	243	SPIIRVYPTLDTTPL	42.31
6119	DRB1*15:03	A0PA81	227	241	FISPIIRVYPTLDTT	43.90
6120	DRB1*15:03	A0PA81	231	245	IIRVYPTLDTTPLHL	43.90
6121	DRB1*15:03	B2RH54	162	176	DPLKIKRVHARMAFT	38.32
6122	DRB1*15:03	B2RH54	163	177	PLKIKRVHARMAFTE	40.54
6123	DRB1*15:03	B2RH54	164	178	LKIKRVHARMAFTEI	41.09
6124	DRB1*15:03	B2RH54	161	175	NDPLKIKRVHARMAF	43.56
6125	DRB1*15:03	B2RH57	69	83	KVRIFVFREGLNGLW	47.20
6126	DRB1*15:03	B2RH57	68	82	KKVRIFVFREGLNGL	48.67
6127	DRB1*15:03	B2RH58	66	80	RLTLVIFYKNGTKVWQ	45.34
6128	DRB1*15:03	B2RH58	358	372	TEIELDYFSSHSLLP	45.45
6129	DRB1*15:03	B2RH58	65	79	ERLTLVIFYKNGTKVW	46.84
6130	DRB1*15:03	B2RH58	357	371	TTEIELDYFSSHSL	48.51
6131	DRB1*15:03	B2RH59	96	110	EVERRIHFIANYELA	32.67
6132	DRB1*15:03	B2RH59	97	111	VERRIHFIANYELAD	37.94
6133	DRB1*15:03	B2RH59	99	113	RRIHFIANYELADPS	38.93
6134	DRB1*15:03	B2RH59	98	112	ERRIHFIANYELADP	45.67
6135	DRB1*15:03	B2RH59	154	168	GQIQLLRNMAKFSL	47.50
6136	DRB1*15:03	B2RH59	155	169	QIQLLRNMAKFSLSV	47.89
6137	DRB1*15:03	B2RH59	153	167	LGQIQLLRNMAKFSL	49.56
6138	DRB1*15:06	A0PA81	230	244	PIIRVYPTLDTTPLH	21.22
6139	DRB1*15:06	A0PA81	231	245	IIRVYPTLDTTPLHL	21.99
6140	DRB1*15:06	A0PA81	229	243	SPIIRVYPTLDTTPL	22.92
6141	DRB1*15:06	A0PA81	227	241	FISPIIRVYPTLDTT	24.73
6142	DRB1*15:06	A0PA81	271	285	GKMLNIYIDLRGANL	31.62
6143	DRB1*15:06	A0PA81	228	242	ISPIIRVYPTLDTTP	32.03
6144	DRB1*15:06	A0PA81	269	283	VIGKMLNIYIDLRGA	33.84
6145	DRB1*15:06	A0PA81	272	286	KMLNIYIDLRGANLN	34.44

6146	DRB1*15:06	A0PA81	267	281	IPVIGKMLNIYIDLR	34.93
6147	DRB1*15:06	A0PA81	268	282	PVIGKMLNIYIDLRG	35.46
6148	DRB1*15:06	A0PA81	270	284	IGKMLNIYIDLRGAN	38.74
6149	DRB1*15:06	A0PA81	226	240	DFISPIIRVYPTLDT	40.97
6150	DRB1*15:06	B2RH54	163	177	PLKIKRVHARMAFTE	20.32
6151	DRB1*15:06	B2RH54	162	176	DPLKIKRVHARMAFT	20.37
6152	DRB1*15:06	B2RH54	164	178	LKIKRVHARMAFTEI	24.38
6153	DRB1*15:06	B2RH54	161	175	NDPLKIKRVHARMAF	25.79
6154	DRB1*15:06	B2RH54	91	105	QRTLVMANTGAMEL	40.46
6155	DRB1*15:06	B2RH54	311	325	YYPVLVNFNSNNYTY	46.10
6156	DRB1*15:06	B2RH57	199	213	KVQILRNAKNSRLLE	40.94
6157	DRB1*15:06	B2RH57	198	212	TKVQILRNAKNSRLL	43.28
6158	DRB1*15:06	B2RH57	200	214	VQILRNAKNSRLLEG	45.44
6159	DRB1*15:06	B2RH57	244	258	ASAPLYVYENIGSDS	47.89
6160	DRB1*15:06	B2RH58	357	371	TTEIELDYFSSHSL	23.15
6161	DRB1*15:06	B2RH58	358	372	TEIELDYFSSHSLLP	23.98
6162	DRB1*15:06	B2RH58	66	80	RLTLVIFYKNGTKVWQ	24.65
6163	DRB1*15:06	B2RH58	65	79	ERLTLVIFYKNGTKVW	25.02
6164	DRB1*15:06	B2RH58	360	374	IELDYFSSHSLPPA	29.03
6165	DRB1*15:06	B2RH58	359	373	EIELDYFSSHSLPP	30.73
6166	DRB1*15:06	B2RH58	64	78	IERLTLVIFYKNGTKV	31.20
6167	DRB1*15:06	B2RH58	67	81	LTLVIFYKNGTKVWQA	32.45
6168	DRB1*15:06	B2RH59	96	110	EVERRIHFIANYELA	12.94
6169	DRB1*15:06	B2RH59	97	111	VERRIHFIANYELAD	16.22
6170	DRB1*15:06	B2RH59	99	113	RRIHFIANYELADPS	17.08
6171	DRB1*15:06	B2RH59	98	112	ERRIHFIANYELADP	20.99
6172	DRB1*15:06	B2RH59	95	109	SEVERRIHFIANYEL	26.68
6173	DRB1*15:06	B2RH59	100	114	RIHFIANYELADPSV	28.30
6174	DRB1*15:06	B2RH59	431	445	EKYQYVFFKANTSSA	31.22
6175	DRB1*15:06	B2RH59	430	444	REKYQYVFFKANTSS	35.97
6176	DRB1*15:06	B2RH59	153	167	LGQIQLLRNMAKFSL	37.50
6177	DRB1*15:06	B2RH59	432	446	KYQYVFFKANTSSAE	37.82
6178	DRB1*15:06	B2RH59	154	168	GQIQLLRNMAKFSLS	40.11
6179	DRB1*15:06	B2RH59	155	169	QIQLLRNMAKFSLSV	44.38
6180	DRB1*15:06	B2RH59	433	447	YQYVFFKANTSSAEN	47.32
6181	DRB1*15:06	B2RH59	429	443	VREKYQYVFFKANTS	47.50
6182	DRB1*15:07	A0PA81	230	244	PIIRVYPTLDTTPLH	45.00
6183	DRB1*15:07	A0PA81	229	243	SPIIRVYPTLDTTPL	45.01
6184	DRB1*15:07	A0PA81	231	245	IIRVYPTLDTTPLHL	47.58
6185	DRB1*15:07	B2RH54	162	176	DPLKIKRVHARMAFT	33.72
6186	DRB1*15:07	B2RH54	163	177	PLKIKRVHARMAFTE	34.29
6187	DRB1*15:07	B2RH54	164	178	LKIKRVHARMAFTEI	40.56
6188	DRB1*15:07	B2RH54	161	175	NDPLKIKRVHARMAF	42.81

6189	DRB1*15:07	B2RH57	199	213	KVQILRNAKNSRLLE	47.51
6190	DRB1*15:07	B2RH58	357	371	TTEIELDYFSSSHSL	45.60
6191	DRB1*15:07	B2RH58	358	372	TEIELDYFSSSHSLLP	47.24
6192	DRB1*15:07	B2RH59	96	110	EVERRIHFIANYELA	22.78
6193	DRB1*15:07	B2RH59	97	111	VERRIHFIANYELAD	29.15
6194	DRB1*15:07	B2RH59	99	113	RRIHFIANYELADPS	31.21
6195	DRB1*15:07	B2RH59	98	112	ERRIHFIANYELADP	36.73
6196	DRB1*15:07	B2RH59	95	109	SEVERRIHFIANYEL	45.70
6197	DRB1*15:07	B2RH59	431	445	EKYQYVFFKANTSSA	48.50
6198	DRB1*15:15	A0PA81	263	277	GVPFIPVIGKMLNIY	23.27
6199	DRB1*15:15	A0PA81	264	278	VPFIPVIGKMLNIYI	26.89
6200	DRB1*15:15	A0PA81	262	276	DGVPFIPVIGKMLNI	27.24
6201	DRB1*15:15	A0PA81	261	275	SDGVPFIPVIGKMLN	36.66
6202	DRB1*15:15	A0PA81	265	279	PFIPVIGKMLNIYID	42.09
6203	DRB1*15:15	B2RH54	162	176	DPLKIKRVHARMAFT	40.00
6204	DRB1*15:15	B2RH54	163	177	PLKIKRVHARMAFTE	41.50
6205	DRB1*15:15	B2RH54	164	178	LKIKRVHARMAFTEI	46.51
6206	DRB1*15:15	B2RH54	161	175	NDPLKIKRVHARMAF	49.48
6207	DRB1*15:15	B2RH57	2	16	KMKYFHHPSGLLPRL	21.98
6208	DRB1*15:15	B2RH57	1	15	MKMKYFHHPSGLLPRL	27.40
6209	DRB1*15:15	B2RH57	3	17	MKYFHHPSGLLPRL	32.25
6210	DRB1*15:15	B2RH57	355	369	VVTFENSLSFTVRIK	49.50
6211	DRB1*15:15	B2RH58	546	560	HWEYYTLNPLRLIYH	28.14
6212	DRB1*15:15	B2RH58	545	559	DHWEYYTLNPLRLIY	29.68
6213	DRB1*15:15	B2RH58	544	558	QDHWEYYTLNPLRLI	34.75
6214	DRB1*15:15	B2RH58	243	257	SVHFYSYYNEWALNN	37.05
6215	DRB1*15:15	B2RH58	547	561	WEYYTLNPLRLIYHS	38.12
6216	DRB1*15:15	B2RH58	242	256	SSVHFYSYYNEWALN	44.09
6217	DRB1*15:15	B2RH58	244	258	VHFYSYYNEWALNNE	46.18
6218	DRB1*15:15	B2RH59	431	445	EKYQYVFFKANTSSA	11.80
6219	DRB1*15:15	B2RH59	430	444	REKYQYVFFKANTSS	13.12
6220	DRB1*15:15	B2RH59	432	446	KYQYVFFKANTSSAE	13.49
6221	DRB1*15:15	B2RH59	433	447	YQYVFFKANTSSAEN	15.93
6222	DRB1*15:15	B2RH59	429	443	VREKYQYVFFKANTS	18.70
6223	DRB1*15:15	B2RH59	434	448	QYVFFKANTSSAENN	22.47
6224	DRB1*15:37	A0PA81	229	243	SPIIRVYPTLDTTPL	46.03
6225	DRB1*15:37	A0PA81	230	244	PIIRVYPTLDTTPLH	49.03
6226	DRB1*15:37	B2RH59	96	110	EVERRIHFIANYELA	28.61
6227	DRB1*15:37	B2RH59	97	111	VERRIHFIANYELAD	33.21
6228	DRB1*15:37	B2RH59	99	113	RRIHFIANYELADPS	38.41
6229	DRB1*15:37	B2RH59	98	112	ERRIHFIANYELADP	39.38
6230	DRB1*16:01	A0PA81	263	277	GVPFIPVIGKMLNIY	19.76
6231	DRB1*16:01	A0PA81	262	276	DGVPFIPVIGKMLNI	22.79

6232	DRB1*16:01	A0PA81	264	278	VPFIPVIGKMLNIYI	23.06
6233	DRB1*16:01	A0PA81	261	275	SDGVVPFIPVIGKMLN	29.20
6234	DRB1*16:01	A0PA81	265	279	PFIPVIGKMLNIYID	42.08
6235	DRB1*16:01	A0PA81	119	133	KDLFFRLSSTDGIAQ	44.10
6236	DRB1*16:01	A0PA81	274	288	LNIYIDLRGANLNVL	44.23
6237	DRB1*16:01	A0PA81	118	132	VKDLFFRLSSTDGIA	49.65
6238	DRB1*16:01	B2RH54	162	176	DPLKIKRVHARMAFT	44.83
6239	DRB1*16:01	B2RH57	2	16	KMKYFHHPSGLLPRL	35.23
6240	DRB1*16:01	B2RH57	1	15	MKMKYFHHPSGLLPR	45.81
6241	DRB1*16:01	B2RH57	337	351	LVPYVAEINPHAVIT	46.76
6242	DRB1*16:01	B2RH57	336	350	FLVPYVAEINPHAVI	47.25
6243	DRB1*16:01	B2RH57	355	369	VVTFENSLSFTVRIK	48.92
6244	DRB1*16:01	B2RH57	421	435	RTNLFFTVDGKKVIL	49.39
6245	DRB1*16:01	B2RH58	546	560	HWEYYTLNPLRLIYH	31.70
6246	DRB1*16:01	B2RH58	545	559	DHWEYYTLNPLRLIY	32.58
6247	DRB1*16:01	B2RH58	547	561	WEYYTLNPLRLIYHS	38.95
6248	DRB1*16:01	B2RH58	544	558	QDHWEYYTLNPLRLI	43.07
6249	DRB1*16:01	B2RH59	431	445	EKYQYVFFKANTSSA	15.47
6250	DRB1*16:01	B2RH59	432	446	KYQYVFFKANTSSAE	17.18
6251	DRB1*16:01	B2RH59	430	444	REKYQYVFFKANTSS	18.78
6252	DRB1*16:01	B2RH59	433	447	YQYVFFKANTSSAEN	22.83
6253	DRB1*16:01	B2RH59	429	443	VREKYQYVFFKANTS	29.25
6254	DRB1*16:01	B2RH59	434	448	QYVFFKANTSSAENN	35.69
6255	DRB1*16:01	B2RH59	503	517	KTLYKYVLTTMPQNK	39.76
6256	DRB1*16:02	A0PA81	263	277	GVFPFIPVIGKMLNIY	18.94
6257	DRB1*16:02	A0PA81	262	276	DGVFPFIPVIGKMLNI	20.80
6258	DRB1*16:02	A0PA81	261	275	SDGVVPFIPVIGKMLN	24.88
6259	DRB1*16:02	A0PA81	264	278	VPFIPVIGKMLNIYI	25.27
6260	DRB1*16:02	A0PA81	274	288	LNIYIDLRGANLNVL	32.86
6261	DRB1*16:02	A0PA81	119	133	KDLFFRLSSTDGIAQ	36.87
6262	DRB1*16:02	A0PA81	273	287	MLNIYIDLRGANLNV	37.04
6263	DRB1*16:02	A0PA81	118	132	VKDLFFRLSSTDGIA	41.96
6264	DRB1*16:02	A0PA81	265	279	PFIPVIGKMLNIYID	43.28
6265	DRB1*16:02	A0PA81	275	289	NIYIDLRGANLNVLV	43.86
6266	DRB1*16:02	A0PA81	260	274	GSDGVFPFIPVIGKML	44.16
6267	DRB1*16:02	A0PA81	272	286	KMLNIYIDLRGANLN	46.29
6268	DRB1*16:02	B2RH57	337	351	LVPYVAEINPHAVIT	23.03
6269	DRB1*16:02	B2RH57	336	350	FLVPYVAEINPHAVI	23.53
6270	DRB1*16:02	B2RH57	2	16	KMKYFHHPSGLLPRL	24.64
6271	DRB1*16:02	B2RH57	1	15	MKMKYFHHPSGLLPR	30.50
6272	DRB1*16:02	B2RH57	338	352	VPYVAEINPHAVITQ	32.08
6273	DRB1*16:02	B2RH57	335	349	GFLVPYVAEINPHAV	33.06
6274	DRB1*16:02	B2RH57	355	369	VVTFENSLSFTVRIK	34.38

6275	DRB1*16:02	B2RH57	421	435	RTNLFFTVDGKKVIL	36.83
6276	DRB1*16:02	B2RH57	3	17	MKYFHHPSGLLPRL	40.58
6277	DRB1*16:02	B2RH57	422	436	TNLFFTVDGKKVILD	45.34
6278	DRB1*16:02	B2RH57	356	370	VTFENSLSFTVRIKG	49.14
6279	DRB1*16:02	B2RH58	546	560	HWEYYTLNPLRLIYH	23.76
6280	DRB1*16:02	B2RH58	545	559	DHWEYYTLNPLRLIY	24.65
6281	DRB1*16:02	B2RH58	544	558	QDHWEYYTLNPLRLI	29.65
6282	DRB1*16:02	B2RH58	547	561	WEYYTLNPLRLIYHS	31.80
6283	DRB1*16:02	B2RH59	431	445	EKYQYVFFKANTSSA	13.29
6284	DRB1*16:02	B2RH59	432	446	KYQYVFFKANTSSAE	14.27
6285	DRB1*16:02	B2RH59	430	444	REKYQYVFFKANTSS	15.96
6286	DRB1*16:02	B2RH59	433	447	YQYVFFKANTSSAEN	17.57
6287	DRB1*16:02	B2RH59	429	443	VREKYQYVFFKANTS	23.19
6288	DRB1*16:02	B2RH59	434	448	QYVFFKANTSSAENN	26.74
6289	DRB1*16:02	B2RH59	503	517	KTLYKYVLTTPQNK	28.75
6290	DRB1*16:02	B2RH59	96	110	EVERRIHFIAANYELA	32.96
6291	DRB1*16:02	B2RH59	97	111	VERRIHFIAANYELAD	33.99
6292	DRB1*16:02	B2RH59	162	176	MAKFSLSVTPPAESK	36.66
6293	DRB1*16:02	B2RH59	502	516	GKTLYKYVLTTPQN	38.53
6294	DRB1*16:02	B2RH59	99	113	RRIHFIAANYELADPS	38.65
6295	DRB1*16:02	B2RH59	504	518	TLYKYVLTTPQNKE	39.47
6296	DRB1*16:02	B2RH59	98	112	ERRIHFIAANYELADP	39.96
6297	DRB1*16:02	B2RH59	505	519	LYKYVLTTPQNKEL	45.73
6298	DRB1*16:02	B2RH59	161	175	NMAKFSLSVTPPAES	47.56
6299	DRB1*16:02	B2RHG4	78	92	PAKYIAGNTFSGGI	42.77
6300	DRB1*16:02	B2RHG4	79	93	AKYIAGNTFSGGIW	49.15
6301	DRB1*16:04	A0PA81	263	277	GVPFIPVIGKMLNIY	34.27
6302	DRB1*16:04	A0PA81	264	278	VPFIPVIGKMLNIYI	39.48
6303	DRB1*16:04	A0PA81	262	276	DGVPFIPVIGKMLNI	40.23
6304	DRB1*16:04	B2RH59	431	445	EKYQYVFFKANTSSA	26.07
6305	DRB1*16:04	B2RH59	432	446	KYQYVFFKANTSSAE	27.50
6306	DRB1*16:04	B2RH59	430	444	REKYQYVFFKANTSS	32.49
6307	DRB1*16:04	B2RH59	433	447	YQYVFFKANTSSAEN	36.76
6308	DRB1*16:05	A0PA81	263	277	GVPFIPVIGKMLNIY	39.16
6309	DRB1*16:05	A0PA81	264	278	VPFIPVIGKMLNIYI	43.52
6310	DRB1*16:05	A0PA81	262	276	DGVPFIPVIGKMLNI	45.47
6311	DRB1*16:05	B2RH59	431	445	EKYQYVFFKANTSSA	29.47
6312	DRB1*16:05	B2RH59	432	446	KYQYVFFKANTSSAE	32.18
6313	DRB1*16:05	B2RH59	430	444	REKYQYVFFKANTSS	36.62
6314	DRB1*16:05	B2RH59	433	447	YQYVFFKANTSSAEN	42.07
6315	DRB1*16:09	A0PA81	263	277	GVPFIPVIGKMLNIY	16.64
6316	DRB1*16:09	A0PA81	264	278	VPFIPVIGKMLNIYI	17.72
6317	DRB1*16:09	A0PA81	262	276	DGVPFIPVIGKMLNI	19.35

6318	DRB1*16:09	A0PA81	261	275	SDGVFPFIPVIGKMLN	25.30
6319	DRB1*16:09	A0PA81	265	279	PFIPVIGKMLNIYID	29.42
6320	DRB1*16:09	A0PA81	274	288	LNIYIDLRGANLNV	38.56
6321	DRB1*16:09	A0PA81	260	274	GSDGVFPFIPVIGKML	42.13
6322	DRB1*16:09	A0PA81	273	287	MLNIYIDLRGANLNV	47.80
6323	DRB1*16:09	A0PA81	119	133	KDLFFRLSSTDGIAQ	48.36
6324	DRB1*16:09	B2RH54	162	176	DPLKIKRVHARMAFT	33.45
6325	DRB1*16:09	B2RH54	164	178	LKIKRVHARMAFTEI	35.93
6326	DRB1*16:09	B2RH54	163	177	PLKIKRVHARMAFTE	36.60
6327	DRB1*16:09	B2RH54	161	175	NDPLKIKRVHARMAF	41.17
6328	DRB1*16:09	B2RH57	2	16	KMKYFHHPSGLLPRL	32.84
6329	DRB1*16:09	B2RH57	1	15	MKMKYFHHPSGLLPRL	42.06
6330	DRB1*16:09	B2RH57	421	435	RTNLFFTVDGKKVIL	43.45
6331	DRB1*16:09	B2RH57	3	17	MKYFHHPSGLLPRL	48.18
6332	DRB1*16:09	B2RH58	546	560	HWEYYTLNPLRLIYH	27.22
6333	DRB1*16:09	B2RH58	545	559	DHWEYYTLNPLRLIY	28.90
6334	DRB1*16:09	B2RH58	547	561	WEYYTLNPLRLIYHS	33.45
6335	DRB1*16:09	B2RH58	544	558	QDHWEYYTLNPLRLI	37.50
6336	DRB1*16:09	B2RH59	431	445	EKYQYVFFKANTSSA	12.99
6337	DRB1*16:09	B2RH59	432	446	KYQYVFFKANTSSAE	14.51
6338	DRB1*16:09	B2RH59	430	444	REKYQYVFFKANTSS	15.31
6339	DRB1*16:09	B2RH59	433	447	YQYVFFKANTSSAEN	18.30
6340	DRB1*16:09	B2RH59	429	443	VREKYQYVFFKANTS	22.30
6341	DRB1*16:09	B2RH59	434	448	QYVFFKANTSSAENN	27.88
6342	DRB1*16:09	B2RH59	503	517	KTLYKYVLTTMPQNK	45.33
6343	DRB1*16:09	B2RH59	284	298	TRNHFYKMILKKAKA	49.59