

Table S1. Increased and decreased bacteria in the different studies

		Lupus Mouse Models vs controls*		Human Studies: SLE patients vs controls*	
Bacteria		↓ (Reference)	↑ (Reference)	↓ (Reference)	↑ (Reference)
Phylum	Actinobacteria		(20)		(27)
	Bacteroidetes	Lupus mice induced by HCMVpp65 ⁴²²⁻⁴³⁹ vs adjuvant (17); In 16-week female vs male SNF1 mice (18)	In 18 vs 6-week MRL+/+ mice (14)	(36)	In SLE G- vs SLE G+ patients and HC (26); (28, 27, 34, 38)
	Firmicutes		In 18 vs 6-week MRL+/+ mice (14); Lupus mice induced by HCMVpp65 ⁴²²⁻⁴³⁹ vs adjuvant (17); In castrated SNF1 mice vs controls (18); (20)	(27, 28)	
	Mollicutes			(32)	
	Patescibacteria		Lupus mice induced by HCMVpp65 ⁴²²⁻⁴³⁹ vs adjuvant (17)		
	Proteobacteria		Lupus mice induced by HCMVpp65 ⁴²²⁻⁴³⁹ vs adjuvant (17); In castrated SNF1 mice vs controls (18); In-house mice vs new mice (23)		(27, 30, 31, 36, 38)
	Tenericutes	In 18 vs 6-week MRL+/+ mice (14); Lupus mice induced by HCMVpp65 ⁴²²⁻⁴³⁹ vs adjuvant (17);		(32)	
	Verrucomicrobia	In castrated SNF1 mice vs controls (18); (24)	In 18 vs 6-week MRL+/+ mice (14)		
Class	Alphaproteobacteria				(31)
	Bacilli				Positive correlation with SLE risk (29); (31)
	Bacteroidia			(36)	(34)
	Clostridia			(36)	
	Gammaproteobacteria				(31, 36)
Order	Bacillales		Treated with vancomycin vs not treated (15)	Negative correlation with SLE risk (29)	
	Bacteridales			(36)	
	Caulobacterales				(31)
	Clostridiales	Treated with vancomycin vs not treated (15)		(36)	
	Enterobacteriales				(31, 36)
	Lactobacillales	(21)			Positive correlation with SLE risk (29); (31)
	Sphingomonadales				(31)
	Xanthomonadales				(31)
Family	<i>Anaeroplasmataceae</i>	In 18 vs 6-week MRL+/+ mice (14)			
	<i>Akkermansiaceae</i>		In 18 vs 6-week MRL+/+ mice (14)		
	<i>Bacteroidaceae</i>				
	<i>Bacteroidales S24-7</i>		In female vs male lupus-prone (16)		
	<i>Bifidobacteriaceae</i>	(25)			
	<i>Caulobacteraceae</i>				(31)
	<i>Clostridiaceae</i>		SFB+ vs SFB- mice (22)		
	<i>Desulfovibrionaceae</i>		(17)		

	<i>Enterobacteriaceae</i>			(30, 31, 36)	
	<i>Enterococcaceae</i>			(36)	
	<i>Fusobacteria</i>				
	<i>Lachnospiraceae</i>	Treated with vancomycin vs not-treated (15); SFB+ vs SFB- mice (22); 30-week vs 15-week old SFB+ mice (22)	In female vs male lupus mice (16); (24)		
	<i>Lactobacillaceae</i>	After disease onset, with dexamethasone treatment (42)	SFB+ vs SFB- mice (22) Restored after retinoic acid treatment (16); From pre-disease to post-disease onset (42)	(32)	
	<i>Mariniflacciae</i>		(17)		
	<i>Paraprevotellaceae</i>		(19)		
	<i>Peptostreptococcaceae</i>		In 18 vs 6-week MRL+/+ mice (14)		
	<i>Prevotellaceae</i>		(19); SFB+ vs SFB- mice (22)	(30) (27)	
	<i>Rhodobacteraceae</i>			(31)	
	<i>Rikenellaceae</i>		In 18 vs 6-week MRL+/+ mice (14); 30-week vs 15-week SFB+ mice (22); In 5-week female lupus mice vs controls (16); (24)		
	<i>Ruminococcaceae</i>	SFB+ vs SFB- mice (22); (25)	In 5-week female lupus mice vs controls (16); (24)	(30, 33, 36, 37) In high vs low disease activity (37)	
	<i>Saccharimonadaceae</i>		(17)		
	<i>Sphingomonadaceae</i>			(31)	
	<i>Streptococcaceae</i>			(31, 32)	
	<i>Veillonellaceae</i>			In SLE vs HC, and in high vs low disease activity (37)	
	<i>y_XI_o_Clostridiales</i>			(30)	
Genus	<i>Alistipes</i>		In 18 vs 6-week MRL+/+ mice (14)	(38)	
	<i>Akkermancia</i>		In 18 vs 6-week MRL+/+ mice (14)	In SLE G+ patients vs SLE G- and HC (26)	
	<i>Bacteroides</i>		Female vs male 16-week SNF1 mice (18)	In SLE G- patients vs SLE G+ and HC (26); (38)	
	<i>Bifidobacterium</i>	In female vs male lupus mice (16)		In SLE G- patients vs SLE G+ and HC (26); In active vs inactive disease (32); (33)	
	<i>Bilophila</i>		From pre-disease to disease onset (42)	In SLE G- vs SLE G+ patients and HC (26)	
	<i>Blautia</i>		In 18 vs 6-week MRL+/+ mice (14); (41)	(33, 41, 42)	
	<i>Clostridium</i>		From pre-disease to disease onset (42)	(31)	
	<i>Coprobacter</i>			Negative correlation with SLE risk (29)	
	<i>Dehalobacterium</i>		From pre-disease to disease onset (42)		
	<i>Dialister</i>			(27)	
	<i>Dysgonomonas</i>	Female vs male 16-week SNF1 mice (18)			
	<i>Desulfovibrio</i>	(41)	(17)	In SLE G- patients vs SLE G+ and HC (26); (41)	In SLE patients taking PPI vs patients not taking (39)
	<i>Dorea</i>		From pre-disease to disease onset (42)		(38)
	<i>Escherichia</i>			In SLE patients taking PPI vs patients not taking PPI (39)	In SLE patients not taking PPI (39)
	<i>Escherichia_Shigella</i>				(31, 36)
	<i>Eggerthella</i>				(27)
	<i>Enterococcus</i>				In SLE patients not taking PPI (39)

<i>Erysipelatoclostridium</i>				(31)
<i>Erysipelotrichaceae</i>	In female vs male lupus-prone mice (16)	(20)		Erysipelotrichaceae-UCG-003 (38)
<i>Eubacterium</i>				(27, 38)
<i>Ezakiella</i>			(30)	
<i>Faecalibacterium</i>			(32, 36)	
<i>Flavonifractor</i>		In-house mice vs new mice (23)		(27)
<i>Gemmiger</i>			In SLE G- patients vs SLE G+ and HC (26)	
<i>Hungatella</i>				(31)
<i>Incertae sedis</i>				(27)
<i>Klebsiella</i>				(27, 31)
<i>Lachnoclostridium</i>				(31)
<i>Lachnospira</i>			Negative correlation with SLE risk (29)	
<i>Lactobacillus</i>		(19); From pre-disease to disease onset (42); Treated with vancomycin vs not-treated (15)	(28)	In SLE G+ patients vs SLE G- and HC (26); (33); (32)
<i>Lactobacilli</i>				
<i>Lactococcus</i>			In SLE G- patients vs SLE G+ and HC (26)	
<i>Megasphaera</i>				(32)
<i>Morganella</i>			In SLE patients taking PPI vs patients not taking (39)	In SLE patients not taking PPI (39)
<i>Odoribacter</i>		In-house mice vs new mice (23); (17)	(42)	
<i>Oscillospira</i>		From pre-disease to disease onset (42)		In SLE G- vs SLE G+ patients and HC (26)
<i>Oxalobacter</i>				In SLE patients taking PPI vs patients not taking (39)
<i>Paraprevotella</i>			(30)	
<i>Parabacteroides</i>		Female vs male 16-week SNF1 mice (18)		In SLE G- (26)
<i>Porphyromonas</i>			(30)	
<i>Prevotella</i>			(30)	In SLE G- patients vs SLE G+ and HC (26); (27, 33)
<i>Pseudobutyrvibrio</i>			(27)	
<i>Pseudomonas</i>			In SLE patients taking PPI vs patients not taking (39)	In SLE patients not taking PPI (39)
<i>Rothia</i>				In SLE patients not taking PPI (39)
<i>Rhodococcus</i>				(27)
<i>Roseburia</i>		(17)	(30, 32)	In SLE patients taking PPI vs patients not taking (39)
<i>Rudaea</i>				(31)
<i>Ruminococcaceae</i>			Ruminococcaceae_UCG-003, Ruminococcaceae_NK4A214_group, Ruminococcaceae_UCG-013 (30)	
<i>Ruminococcus</i>			Ruminococcus_2, and Ruminococcus_UCG_002 (36)	Ruminococcus_gnavus_group (31); In SLE vs HC, and in high vs low disease activity (37); Ruminococcus_gauvreauii_group (38)
<i>Stenotrophomonas</i>			In SLE patients taking PPI vs patients not taking (39)	In SLE patients not taking PPI vs HC (39)
<i>Streptococcus</i>			In SLE G- patients vs SLE G+ and HC (26)	(30, 31, 32); In SLE patients taking PPI vs patients not taking (39)

	<i>Turicibacter</i>		(20)		(40)	
	<i>Veillonella</i>			In SLE patients taking PPI vs patients not taking (39)	In SLE patients not taking PPI vs HC (39)	
	<i>Actinomyces massiliensis</i>				(41)	
Species	Akkermansiaceae_Akkermansia (uncultured)	(24)				
	<i>Akkermansia muciniphila</i>	From pre-disease to disease (42)		In 18 vs 6-week MRL+/+ mice (14)		
	<i>Atopobium rimae</i>				(41)	
	Bacteroidales	Treated with vancomycin vs not-treated (15)	(25)			
	<i>Bacteroides acidifaciens</i>		(24)			
	<i>Bacteroides fragilis</i>				(41)	
	<i>Bacteroides massiliensis dnLKV3</i>		(24)			
	<i>Bacteroides ovatus</i>	V975 (24)			(38)	
	<i>Bacteroides thetaiotaomicron</i>				(38)	
	<i>Bacteroides uniformis</i>				SLE patients with higher disease activity (37)	(38)
	<i>Bacteroides vulgatus</i>					(38)
	<i>Bifidobacterium adolescentis</i>				(33)	
	<i>Bifidobacterium longum</i>				(33)	
	<i>Candidatus Arthromitus</i>		(25)			
	<i>Clostridium leptum</i>					(41)
	<i>Clostridium_papyrosolvens</i>					(40)
	<i>Clostridium sp. ATCC BAA-442</i>					(41)
	<i>Faecalibacterium prausnitzii</i>	In 18 vs 6-week MRL+/+ mice (14)			(32)	
	Lachnospiraceae_bacteriumA2					(40)
	Lachnospiraceae_bacteriumM18-1					(40)
	<i>Lactobacillus agilis</i>			From not detected to ~5% with antibiotic treatment (15)		
	<i>Lactobacillus brevis</i>			From not detected to ~5% with antibiotic treatment (15)		
	<i>Lactobacillus iners</i>					(33)
	<i>Lactobacillus intestinalis</i>					(40)
	<i>Lactobacillus_mucosae</i>			From not detected to ~5% with antibiotic treatment (15)		(32)
	<i>Lactobacillus_reuteri</i>			From not detected to ~5% with antibiotic treatment (15)		(40)
	<i>Ruminococcus gnavus</i>					SLE patients with lupus nephritis and high disease activity (37, 41); reduced in active vs inactive SLE (32)
	<i>Ruminococcus torques</i>		(41); In 30-week vs 15-week old SFB+ mice (22)			(41)
	<i>Shuttleworthia satelles</i>					(41)
	<i>Streptococcus anginosus</i>					Positive correlation with SLEDAI (32); (35)
<i>Streptococcus intermedius</i>					(35)	

* These will be the comparisons unless otherwise stated; HC: healthy controls; PPI: Proton Pump Inhibitors; pSS: Primary Sjögren's syndrome; SFB-: not inoculated with segmented filamentous bacteria; SFB+: inoculated with segmented filamentous bacteria; SLE: systemic lupus erythematosus; SLE G-: systemic lupus erythematosus not taking glucocorticoids; SLE G+: systemic lupus erythematosus taking glucocorticoids; ↓: bacteria which are decreased; ↑: bacteria which are increased