

Supplemental Table 1. Belimumab dose and duration of treatment

Patient	Dose (mg/kg)	Treatment Duration (months)	Concurrent Medications
7	10	28	AZA
8	10	5	HCQ, PDN
14	10	3	PDN
16	10	1	HCQ
17	10	28	HCQ
19	10	9	HCQ
21	10	21	HCQ
23	10	1	HCQ, PDN
32	10	1	NONE
33	10	1	HCQ, PDN
35	10	31	PDN
36	10	7	NONE
37	10	8	NONE

*Azathioprine (AZA); Belimumab (BEM); Cyclosporine (CYA); Hydroxychloroquine (HCQ); Mycophenolate mofetil (MMF); Prednisone (PDN)

Supplemental Table 2. Demographics of Individual SLE patients

Patient	Diagnosis	Treatment	Disease Duration (years)	AGE (years)	SDI	SLEDAI-2k
1	SLE - new diagnosis	None	0	48	0	8
2	SLE - new diagnosis	PDN	0	30	0	0
3	SLE	AZA, HCQ	5	32	0	0
4	SLE	AZA, HCQ	16	52	2	2
5	SLE	HCQ	3	39	0	4
6	SLE	HCQ	35	46	0	4
7	SLE	BEM, AZA	7	36	1	2
8	SLE	BEM, HCQ, PDN	5	31	1	4
9	SLE	HCQ, PDN	5	37	0	2
10	SLE	AZA	0	34	1	3
11	SLE	AZA	1	80	0	2
12	SLE NEPHRITIS	HCQ, AZA, PDN	3	31	3	4
13	SLE	AZA, HCQ	18	31	1	6
14	SLE	BEM, PDN	2	84	1	14
15	SLE	PDN	39	66	1	2
16	SLE	BEM, HCQ	51	67	1	2
17	SLE NEPHRITIS	BEM, HCQ	3	30	1	2
18	SLE	PDN	9	20	1	2
19	SLE	BEM, HCQ	9	24	3	4
20	SLE	HCQ	5	35	1	4
21	SLE	BEM, HCQ	5	45	3	2
22	SLE	HCQ	12	23	1	2
23	SLE	BEM, HCQ, PDN	2	22	1	12
24	SLE	MMF, HCQ	9	52	2	6
25	SLE	None	10	53	0	2
26	SLE	HCQ	13	25	1	10
27	SLE	AZA	7	61	1	6
28	SLE	CYA	26	35	1	2
29	SLE	HCQ	12	37	0	2
30	SLE	HCQ	8	35	0	9
31	SLE	HCQ, AZA	6	49	0	12
32	SLE NEPHRITIS	BEM, HCQ, PDN	9	48	4	0
33	SLE NEPHRITIS	BEM	23	34	7	6
34	SLE	CYA	2	45	1	6
35	SLE	BEM, PDN	21	40	1	4
36	SLE	BEM	14	30	1	4
37	SLE	BEM	10	58	5	2

*Azathioprine (AZA); Belimumab (BEM); Cyclosporine (CYA); Hydroxychloroquine (HCQ); Mycophenolate mofetil (MMF); Prednisone (PDN)

Supplemental Table 3. Statistical analysis results for each subset

Subset	Group, N	Mean \pm SD	D'Agostino-Pearson, where H_0 is Gaussian, Passed normality test (alpha = 0.05)	Skewedness (g1 method), where 0 is Gaussian	ANOVA L = transformed cell percentages to log (y) for Gaussian distribution	Tukey's HSD test p value 95% Confidence Interval Belimumab vs Healthy or SCT
Nonmemory T1	Healthy, 14 SCT, 24 Belimumab, 13	6.202 \pm 6.397 5.605 \pm 5.961 28.16 \pm 28.45	P= 0.0092, No P= 0.0001, No P= 0.0839, Yes	1.632 1.932 1.202	P= 0.002 ^L	0.013; [-1.141, -0.1133] 0.002; [-1.154, -0.2303] N/A
Nonmemory T2	Healthy SCT Belimumab	30.50 \pm 17.49 26.18 \pm 11.82 15.85 \pm 15.24	P= 0.0165, No P= 0.2287, Yes P= 0.3601, Yes	1.331 -0.2446 0.8407	P= 0.006 ^L	0.009; [0.0965, 0.7890] 0.013; [0.0709, 0.6932] N/A
Nonmemory FM	Healthy SCT Belimumab	63.30 \pm 19.56 68.22 \pm 15.04 56.00 \pm 34.06	P= 0.4479, Yes P= 0.1543, Yes P= 0.3291, Yes	-0.6153 0.06325 -0.2781	P= 0.293	0.676; [-13.56, 28.177] 0.262; [-6.437, 30.883,] N/A
% PBMC T1	Healthy SCT Belimumab	0.062 \pm 0.051 0.120 \pm 0.216 0.130 \pm 0.283	P= 0.1809, Yes P< 0.0001, No P< 0.0001, No	1.103 3.585 3.204	P= 0.8258 ^L	0.8208; [-0.4680, 0.7765] 0.8788; [-0.4471, 0.6713] N/A
% PBMC T2	Healthy SCT Belimumab	0.409 \pm 0.313 0.401 \pm 0.358 0.089 \pm 0.168	P= 0.0857, Yes P< 0.2018, Yes P< 0.0001, No	1.228 0.742 2.600	P < 0.0001 ^L	< 0.0001; [0.5736, 1.744] < 0.0001; [0.4697, 1.521] N/A
% PBMC FM	Healthy SCT Belimumab	1.034 \pm 0.822 1.463 \pm 1.282 0.245 \pm 0.387	P= 0.4535, Yes P= 0.0020, No P= 0.0025, No	0.722 1.547 1.982	P< 0.0001 ^L	< 0.0001; [0.4821, 1.456] < 0.0001; [0.7047, 1.575] N/A

L = To test for Gaussian distribution and skewedness in the groups, we used Prism to run both D'Agostino and Pearson omnibus normality test and g1 method for skewedness. We transformed variables to their log value using $y = \log(x+1)$ and then conducted one-way ANOVA and Tukey's honest significant differences (HSD) post-hoc test (SPSS).