

**Supplementary Table S1.** Relative to baseline percentage change in B cell subset counts and serum levels of serological markers from baseline through week 8 in patients who developed versus did not develop flares from week 24 through week 52 in the pooled BLISS study population.

	Any flare			Severe flare		
	Yes	No	P value	Yes	No	P value
<b>Entire patient cohort (all treatment arms)</b>						
<b>B cell subsets</b>						
CD19 <sup>+</sup> CD20 <sup>+</sup>	-4.1 (-30.2–36.7)	0.0 (-29.9–48.9)	0.211	-5.6 (-30.2–45.1)	-2.0 (-30.0–40.9)	0.969
CD19 <sup>+</sup> CD20 <sup>+</sup> CD27 <sup>+</sup>	76.7 (0.0–188.9)	84.6 (6.1–200.0)	0.179	50.0 (-16.7–200.0)	83.5 (6.7–192.2)	<b>0.037</b>
CD19 <sup>+</sup> CD20 <sup>+</sup> CD69 <sup>+</sup>	-17.3 (-64.6–110.7)	-10.5 (-68.7–96.0)	0.561	-11.5 (-61.2–134.9)	-16.2 (-66.7–105.7)	0.378
CD19 <sup>+</sup> CD20 <sup>+</sup> CD27 <sup>-</sup>	-17.5 (-44.6–21.1)	-15.5 (-44.3–17.9)	0.633	-12.4 (-41.3–27.1)	-17.0 (-44.6–17.9)	0.273
CD19 <sup>+</sup> CD20 <sup>+</sup> CD138 <sup>+</sup>	-20.6 (-67.8–80.0)	-12.0 (-69.8–114.0)	0.496	-4.0 (-68.0–113.1)	-18.6 (-68.3–97.1)	0.599
CD19 <sup>+</sup> CD20 <sup>+</sup> CD138 <sup>+</sup>	-19.5 (-65.4–56.0)	-28.0 (-68.5–63.5)	0.194	-11.9 (-58.7–81.1)	-24.0 (-67.7–54.1)	0.123
CD19 <sup>+</sup> CD20 <sup>+</sup> CD27 <sup>brt</sup>	-30.6 (-66.7–33.3)	-30.0 (-68.4–7.5)	0.240	-21.8 (-62.8–93.8)	-31.1 (-66.7–17.8)	0.105
CD19 <sup>+</sup> CD27 <sup>brt</sup> CD38 <sup>brt</sup>	-22.8 (-62.5–58.1)	-29.1 (-61.8–37.7)	0.354	-24.8 (-62.9–58.5)	-26.4 (-61.8–49.3)	0.967
<b>Serological markers</b>						
C3	2.0 (-9.0–14.5)	2.7 (-7.5–15.5)	0.247	0.5 (-8.5–14.6)	2.7 (-8.4–15.1)	0.662
C4	6.3 (-7.3–23.6)	8.3 (-5.9–28.6)	0.080	4.9 (-11.5–25.0)	7.1 (-6.3–25.0)	0.235
anti-dsDNA (all patients)	0.0 (-27.3–0.2)	-12.5 (-34.1–0.0)	<b>&lt;0.001</b>	-4.7 (-27.1–1.8)	-4.9 (-31.2–0.0)	0.339
anti-dsDNA (patients positive at baseline)	-15.8 (-36.5–8.1)	-22.2 (-39.9–0.6)	<b>0.001</b>	-14.2 (-36.5–7.3)	-19.1 (-38.6–3.8)	0.193
<b>Belimumab</b>						
<b>B cell subsets</b>						
CD19 <sup>+</sup> CD20 <sup>+</sup>	-4.8 (-35.3–43.9)	0.0 (-31.6–60.0)	0.243	-7.1 (-37.7–63.1)	-2.1 (-32.3–50.6)	0.971
CD19 <sup>+</sup> CD20 <sup>+</sup> CD27 <sup>+</sup>	128.6 (61.1–250.0)	126.3 (50.0–250.0)	0.548	114.3 (-38.9–281.7)	128.6 (58.3–242.9)	0.620
CD19 <sup>+</sup> CD20 <sup>+</sup> CD69 <sup>+</sup>	-19.0 (-64.3–107.2)	-10.5 (-67.4–96.0)	0.874	-10.8 (-63.6–136.7)	-17.9 (-66.5–100.8)	0.447
CD19 <sup>+</sup> CD20 <sup>+</sup> CD27 <sup>-</sup>	-29.9 (-53.0–12.8)	-25.3 (-49.6–14.2)	0.157	-20.8 (-53.8–22.6)	-28.3 (-51.3–13.1)	0.765
CD19 <sup>+</sup> CD20 <sup>+</sup> CD138 <sup>+</sup>	-19.2 (-67.4–80.2)	-11.3 (-68.2–124.4)	0.691	-0.2 (-63.7–118.4)	-16.6 (-68.1–100.0)	0.296
CD19 <sup>+</sup> CD20 <sup>+</sup> CD138 <sup>+</sup>	-23.8 (-69.0–46.1)	-33.3 (-71.3–63.6)	0.449	-23.6 (-66.3–74.4)	-28.9 (-70.8–50.8)	0.567
CD19 <sup>+</sup> CD20 <sup>+</sup> CD27 <sup>brt</sup>	-36.4 (-71.1–14.3)	-40.0 (-75.0–0.0)	0.402	-39.2 (-66.7–40.7)	-37.5 (-72.7–0.0)	0.393
CD19 <sup>+</sup> CD27 <sup>brt</sup> CD38 <sup>brt</sup>	-31.9 (-65.7–39.9)	-37.0 (-65.4–22.8)	0.384	-42.9 (-73.2–25.3)	-33.7 (-65.1–34.3)	0.385
<b>Serological markers</b>						
C3	3.3 (-7.9–15.2)	5.1 (-6.4–18.7)	0.091	2.2 (-7.4–15.1)	3.8 (-6.8–16.4)	0.497
C4	9.1 (-3.6–28.2)	11.8 (-4.4–32.2)	0.264	9.1 (-3.3–30.8)	10.0 (-4.0–29.4)	0.838
anti-dsDNA (all patients)	-4.6 (-30.7–0.0)	-17.7 (-37.8–0.0)	<b>&lt;0.001</b>	-8.7 (-31.3–1.3)	-12.3 (-34.5–0.0)	0.302
anti-dsDNA (patients positive at baseline)	-20.2 (-42.5–2.7)	-27.4 (-43.2–6.3)	<b>0.012</b>	-16.5 (-43.9–5.9)	-23.8 (-43.0–2.9)	0.165
<b>Placebo</b>						
<b>B cell subsets</b>						
CD19 <sup>+</sup> CD20 <sup>+</sup>	-3.1 (-24.4–31.9)	0.0 (-25.9–26.5)	0.630	-3.5 (-24.4–34.1)	-2.0 (-24.9–27.8)	0.972
CD19 <sup>+</sup> CD20 <sup>+</sup> CD27 <sup>+</sup>	-2.1 (-34.7–33.3)	4.2 (-25.0–39.7)	<b>0.037</b>	-11.1 (-47.2–47.1)	0.0 (-28.6–35.7)	0.399
CD19 <sup>+</sup> CD20 <sup>+</sup> CD69 <sup>+</sup>	-14.8 (-64.8–127.3)	-12.6 (-69.9–96.6)	0.439	-11.5 (-60.6–130.0)	-15.3 (-68.0–116.4)	0.653
CD19 <sup>+</sup> CD20 <sup>+</sup> CD27 <sup>-</sup>	-2.5 (-24.0–32.7)	-2.4 (-26.3–26.8)	0.924	0.0 (-25.0–33.3)	-2.6 (-25.3–31.6)	0.761
CD19 <sup>+</sup> CD20 <sup>+</sup> CD138 <sup>+</sup>	-23.4 (-67.9–72.1)	-13.6 (-72.2–110.3)	0.562	-9.3 (-73.4–88.6)	-19.5 (-69.0–89.2)	0.755
CD19 <sup>+</sup> CD20 <sup>+</sup> CD138 <sup>+</sup>	-11.3 (-58.9–68.3)	-12.4 (-62.6–63.6)	0.400	2.4 (-47.0–86.2)	-14.2 (-62.1–64.9)	0.144
CD19 <sup>+</sup> CD20 <sup>+</sup> CD27 <sup>brt</sup>	-14.4 (-53.2–66.7)	0.0 (-50.0–51.6)	0.967	-2.7 (-54.0–115.4)	-7.6 (-50.0–51.1)	0.272
CD19 <sup>+</sup> CD27 <sup>brt</sup> CD38 <sup>brt</sup>	-2.9 (-54.1–86.1)	-0.9 (-48.3–73.8)	0.681	-5.4 (-50.9–93.3)	-1.4 (-51.3–77.1)	0.830
<b>Serological markers</b>						
C3	0.0 (-10.2–13.1)	-0.9 (-10.0–7.9)	0.451	0.0 (-8.9–12.8)	-0.7 (-10.2–10.1)	0.591
C4	0.0 (-14.3–16.7)	3.3 (-10.0–15.4)	0.413	0.0 (-15.8–16.7)	0.0 (-12.5–16.7)	0.434
anti-dsDNA (all patients)	0.0 (-21.5–9.2)	0.0 (-23.6–12.6)	0.750	0.0 (-24.7–9.8)	0.0 (-21.6–10.8)	0.569
anti-dsDNA (patients positive at baseline)	-4.0 (-28.2–17.9)	-9.4 (-29.6–15.1)	0.439	-8.7 (-29.8–15.2)	-4.4 (-28.2–17.6)	0.544

Data are presented as medians (interquartile range) of the relative to baseline percentage changes. P values are derived from non-parametrical Mann-Whitney U tests. Statistically significant P values are in bold.

C3: complement component 3; C4: complement component 4