

**Supplemental Table 1.** Assay characteristics

Variables	Units	Dilution factor	ULOD	LLOD	% Detectable	Interassay CV%
APRIL	pg/mL	1:2	34580	47.43	100%	12.1%
BAFF	pg/mL	1:2	5800	0.35	100%	10.2%
CCL17	pg/mL	1:2	22000	30.18	100%	10.8%
CCL22	pg/mL	1:2	11472	15.74	100%	8.5%
CCL24	pg/mL	1:2	2630	3.61	100%	7.9%
CXCL13	pg/mL	1:2	4500	1.1	100%	10.3%
EndoCAb	MMU/mL	--	3.5	0.05	100%	14.1%
FABP2	pg/mL	1:2	7800	0.48	100%	12.4%
Haptoglobin	µg/mL	--	200	3	99.8%	6.3%
ICAM	ng/mL	1:100	1377	0.673	98.8%	35.2%
IL10	pg/mL	1:20	2500	0.61	100%	--
IL18	pg/mL	1:2	24300	5.93	100%	19.8%
IL6	pg/mL	1:20	3600	0.88	100%	6.3%
IP10	pg/mL	1:20	630	0.86	100%	10.6%
LBP	ng/mL	1:100	1272	62.1	100%	12.7%
MCP1	pg/mL	1:2	9400	2.29	100%	10.5%
sCD14	ng/mL	1:100	107	0.052	100%	6.4%
sCD163	ng/mL	1:2	2252	0.55	100%	9.8%
sCD23	pg/ml	1:20	46180	63.35	100%	12.7%
sCD27	pg/ml	1:20	41460	56.87	100%	5.1%
TNF $\alpha$	pg/mL	1:20	3000	0.73	100%	17.4%
TRAIL	pg/mL	1:2	7060	9.68	99.3%	20.2%

ULOD, Upper limit of detection provided by the manufacturer; LLOD, lower limit of detection provided by the manufacturer; CV, coefficient of variation. We could not obtain the CV% for IL10 due to missing values in the replicate samples.

**Supplemental Table 2.** Association between microbial translocation, macrophage activation, and B cell activation & inflammation biomarkers and systemic lymphoma and PCNSL

	<i>Systemic lymphoma</i>				<i>PCNSL</i>			
	Controls, N	Cases, N	OR	95% CI	Controls, N	Cases, N	OR	95% CI
<b>sCD14 ng/mL</b>	139	139	3.80	1.06 - 13.57	61	61	4.94	0.41 - 60.12
< 1307	30	20	1		20	6	1	
1307-1529	39	38	1.58	0.71 - 3.50	11	18	5.68	1.33 - 24.33
1529-1738	34	41	1.71	0.76 - 3.88	16	21	4.54	1.18 - 17.45
> 1738	36	40	1.81	0.79 - 4.12	14	16	4.09	0.86 - 19.45
<b>EndoCAb MMU/mL</b>	139	139	0.78	0.50 - 1.21	61	61	0.72	0.34 - 1.55
< 39	38	55	1		12	21	1	
39-51	31	21	0.47	0.23 - 0.98	19	13	0.40	0.12 - 1.30
52-73	36	34	0.56	0.28 - 1.12	14	15	0.61	0.19 - 2.01
> 73	34	29	0.58	0.28 - 1.16	16	12	0.40	0.12 - 1.41
<b>FABP2 pg/mL</b>	139	139	1.76	1.09 - 2.84	61	61	1.31	0.70 - 2.44
< 694	33	23	1		17	14	1	
694-1009	42	35	1.68	0.73 - 3.86	8	14	2.25	0.49 - 10.26
1010-1448	33	28	1.34	0.56 - 3.21	17	7	0.55	0.16 - 1.92
> 1448	31	53	3.23	1.36 - 7.67	19	26	1.77	0.56 - 5.56
<b>Haptoglobin µg/mL</b>	139	138	1.39	1.06 - 1.81	61	61	0.80	0.60 - 1.09
< 462	37	24	1		13	14	1	
462-657	34	23	1.12	0.48 - 2.60	16	10	0.33	0.08 - 1.34
657-932	35	40	1.62	0.78 - 3.36	15	15	0.65	0.19 - 2.24
> 932	33	51	2.68	1.25 - 5.77	17	22	0.74	0.18 - 2.94
<b>LBP ng/mL</b>	139	139	3.47	1.64 - 7.36	61	61	1.71	0.52 - 5.64
< 8931	37	19	1		13	8	1	
8931-11169	31	18	0.91	0.38 - 2.20	19	10	0.90	0.22 - 3.62
11169-13777	36	30	1.56	0.70 - 3.49	14	20	2.19	0.56 - 8.61
> 13777	35	72	3.85	1.76 - 8.42	15	23	1.89	0.53 - 6.70
<b>APRIL pg/mL</b>	139	139	0.89	0.49 - 1.61	61	61	1.13	0.41 - 3.11
< 938	31	38	1		19	12	1	
938-1257	38	35	0.84	0.43 - 1.65	12	19	3.29	0.89 - 12.24
1258-1703	32	27	0.68	0.33 - 1.40	18	23	3.36	0.89 - 12.63
> 1703	38	39	0.81	0.38 - 1.75	12	7	1.42	0.34 - 6.05
<b>BAFF pg/mL</b>	139	139	2.63	1.20 - 5.77	61	61	1.56	0.41 - 6.02
< 1475	34	15	1		16	11	1	
1475-1816	36	27	1.54	0.66 - 3.58	14	11	0.93	0.30 - 3.01
1817-2287	37	47	2.74	1.28 - 5.87	13	18	2.02	0.64 - 6.42
> 2287	32	50	3.87	1.64 - 9.15	18	21	2.10	0.61 - 7.24

<b>CCL17 pg/mL</b>	139	139	1.63	1.13 - 2.37	61	61	1.82	1.07 - 3.08
< 311	33	24	1		17	8	1	
311-501	39	34	1.46	0.66 - 3.22	11	14	2.71	0.77 - 9.52
502-759	37	26	1.07	0.51 - 2.21	13	12	2.18	0.48 - 9.00
> 759	30	55	3.20	1.46 - 7.03	20	27	3.24	1.03 - 10.18
<b>CCL22 pg/mL</b>	139	139	0.90	0.54 - 1.49	61	61	1.69	0.77 - 3.71
< 609	33	35	1		17	14	1	
609-784	38	28	0.59	0.28 - 1.22	12	16	2.66	0.78 - 9.10
785-1031	33	39	1.25	0.62 - 2.51	17	12	0.94	0.33 - 2.73
> 1031	35	37	0.88	0.45 - 1.72	15	19	2.44	0.67 - 8.86
<b>CCL24 pg/mL</b>	139	139	1.03	0.68 - 1.56	61	61	0.78	0.41 - 1.48
< 595	36	28	1		14	15	1	
595-1010	37	52	2.21	1.10 - 4.48	13	22	1.83	0.56 - 5.92
1011-1475	33	20	0.60	0.25 - 1.44	17	7	0.47	0.15 - 1.52
> 1475	33	39	2.19	0.99 - 4.84	17	17	1.00	0.30 - 3.33
<b>ICAM ng/mL</b>	139	139	1.64	1.03 - 2.61	61	61	1.61	0.70 - 3.73
< 148	31	18	1		20	14	1	
148-196	33	24	1.16	0.48 - 2.78	16	8	0.31	0.06 - 1.62
196-289	36	43	1.74	0.81 - 3.73	14	22	1.71	0.57 - 5.10
> 289	39	54	2.06	0.97 - 4.35	11	17	1.32	0.42 - 4.13
<b>IL18 pg/mL</b>	139	139	2.21	1.32 - 3.72	61	61	1.52	0.73 - 3.19
< 978	35	19	1		15	8	1	
978-1418	37	33	1.82	0.78 - 4.25	13	14	1.93	0.56 - 6.61
1419-1987	32	36	2.08	0.89 - 4.85	18	23	1.85	0.60 - 5.68
> 1987	35	51	3.06	1.33 - 7.04	15	16	1.76	0.50 - 6.15
<b>MCP1 pg/mL</b>	139	139	1.62	0.98 - 2.68	61	61	1.80	0.78 - 4.18
< 356	30	25	1		20	14	1	
356-501	37	38	1.22	0.57 - 2.62	13	16	2.42	0.72 - 8.16
502-601	38	22	0.71	0.33 - 1.56	12	14	2.90	0.73 - 11.50
> 601	34	54	1.87	0.91 - 3.86	16	17	1.97	0.689 - 5.620
<b>sCD163 ng/mL</b>	139	139	1.22	0.75 - 1.99	61	61	1.72	0.74 - 4.03
< 715	38	26	1		12	11	1	
715-933	26	27	1.63	0.73- 3.65	24	7	0.24	0.055 - 1.04
933-1271	39	38	1.54	0.74 - 3.18	11	21	2.46	0.63 - 9.71
> 1271	36	48	1.94	0.86 - 4.36	14	22	2.03	0.60 - 6.93
<b>TRAIL pg/mL</b>	139	139	1.41	0.95 - 2.08	61	61	0.89	0.49 - 1.61
< 46	36	27	1		15	14	1	
46-63	33	33	1.33	0.59 - 3.00	16	12	0.95	0.33 - 2.74
64-79	39	29	0.85	0.40 - 1.79	13	13	1.06	0.33 - 3.43
> 79	31	50	1.87	0.95 - 3.68	17	22	1.37	0.52 - 3.65

**B cell activation markers**

<b>sCD23 pg/mL</b>	138	139	1.78	1.04 - 3.03	61	61	4.23	1.35 - 13.27
< 2286	33	22	1		18	11	1	
2286-3037	36	24	1.08	0.47 - 2.46	13	8	0.89	0.22 - 3.61
3038-4028	31	35	1.81	0.83 - 3.96	19	20	1.43	0.41 - 4.98
> 4028	38	58	2.48	1.16 - 5.28	11	22	4.68	1.18 - 18.57
<b>sCD27 pg/mL</b>	138	139	5.04	2.26 - 11.22	61	61	4.85	1.33 - 17.74
< 10593	29	21	1		21	11	1	
10593-12838	38	21	0.99	0.403 - 2.42	12	7	0.93	0.26 - 3.37
12839-16327	35	23	1.08	0.45 - 2.61	15	15	1.72	0.61 - 4.86
> 16327	36	74	3.14	1.32 - 7.46	13	28	5.60	1.43 - 21.96
<b>CXCL13 pg/mL</b>	139	139	NA		61	61	3.02	1.22 - 7.43
< 92	37	15	1		13	8	1	
92-125	38	17	1.89	0.60 - 6.02	12	8	1.06	0.25 - 4.60
125-187	31	31	4.67	1.51 - 14.47	19	11	0.85	0.20 - 3.55
> 187	33	76	12.69	4.10 - 39.24	17	34	2.59	0.72 - 9.26
<b>IL6 pg/mL</b>	138	139	1.34	1.06 - 1.68	60	61	1.39	0.89 - 2.16
< 0.8	39	31	1		15	8	1	
0.8-1.36	32	29	1.32	0.61 - 2.86	17	11	1.56	0.46 - 5.35
1.38-2.11	33	27	1.31	0.57 - 3.01	13	17	3.70	0.90 - 15.16
> 2.11	34	52	2.02	0.95 - 4.28	15	25	5.71	1.37 - 23.79
<b>IL10 pg/mL</b>	138	138	1.23	1.08 - 1.40	60	61	1.35	1.07 - 1.69
< 0.03	34	20	1		16	7	1	
0.03-0.52	35	31	2.56	1.06 - 6.19	14	10	2.80	0.48 - 16.33
0.53-0.99	36	25	1.51	0.60 - 3.81	14	15	4.06	0.83 - 19.76
> 0.99	33	62	4.36	1.83 - 10.39	16	29	7.32	1.58 - 33.83
<b>IP10 pg/mL</b>	138	139	3.17	1.75 - 5.74	61	61	5.42	1.64 - 17.95
< 144	36	22	1		14	1	1	
144-199	31	16	0.98	0.45 - 2.14	19	13	NE	
200-311	38	40	1.93	0.88 - 4.25	12	21	NE	
> 311	33	61	3.97	1.66 - 9.49	16	26	NE	
<b>TNF<math>\alpha</math> pg/mL</b>	138	139	2.76	1.50 - 5.06	60	61	3.54	1.23 - 10.20
< 9.48	33	21	1		17	8	1	
9.48-13	36	31	1.63	0.72 - 3.67	15	13	3.74	0.67 - 20.95
14-16.47	33	27	1.33	0.60 - 2.96	15	14	2.30	0.53 - 10.07
> 16.47	36	60	2.80	1.27 - 6.18	13	26	7.02	1.63 - 30.30

PCNSL, primary central nervous system lymphoma; N, number; OR, odds ratio; CI, confidence interval. ORs were adjusted for age at serum sample date (continuous), race/ethnicity (categorical), and HCV infection status at serum sample date.

**Supplemental Table 3.** Association between B cell activation and inflammation biomarkers and AIDS-NHL risk overall and stratified by time from blood collection to AIDS-NHL diagnosis

	<i>All AIDS-NHL</i>				<i>&lt;4 years time-lag</i>				<i>≥4 years time-lag</i>			
	Controls, N	Cases, N	OR	95% CI	Controls, N	Cases, N	OR	95% CI	Controls, N	Cases, N	OR	95% CI
<b>sCD23 pg/mL</b>	199	200	2.11	1.30 - 3.40	103	103	1.60	0.87 - 2.93	96	97	3.26	1.44 - 7.39
< 2286	51	33	1		18	14	1		33	19	1	
2286-3037	49	32	1.08	0.54 - 2.17	28	13	0.85	0.26 - 2.83	21	19	1.29	0.53 - 3.19
3038-4028	50	55	1.74	0.91 - 3.34	25	32	1.83	0.62 - 5.40	25	23	1.36	0.55 - 3.36
> 4028	49	80	2.77	1.46 - 5.27	32	44	2.06	0.72 - 5.86	17	36	4.18	1.58 - 11.07
<b>sCD27 pg/mL</b>	199	200	4.91	2.55 - 9.45	103	103	6.88	2.51 - 18.83	96	97	3.54	1.41 - 8.89
< 10593	50	32	1		26	10	1		24	22	1	
10593-12838	50	28	1.07	0.53 - 2.17	21	17	2.10	0.72 - 6.11	29	11	0.53	0.19 - 1.50
12839-16327	50	38	1.34	0.69 - 2.57	31	20	1.91	0.73 - 4.95	19	18	0.93	0.33 - 2.60
> 16327	49	102	3.91	1.96 - 7.82	25	56	5.40	1.91 - 15.33	24	46	2.62	0.97 - 7.10
<b>CXCL13 pg/mL</b>	200	200	3.96	2.44 - 6.45	103	103	4.59	2.14 - 9.83	97	97	4.37	2.10 - 9.08
< 92	50	23	1		22	13	1		28	10	1	
92-125	50	25	1.50	0.63 - 3.55	23	6	0.61	0.16 - 2.35	27	19	4.27	1.02 - 17.87
125-187	50	42	2.66	1.17 - 6.04	24	23	1.97	0.66 - 5.94	26	19	4.87	1.11 - 21.41
> 187	50	110	6.77	3.05 - 15.00	34	61	4.50	1.44 - 14.05	16	49	13.84	3.48 - 54.97
<b>IL6 pg/mL</b>	198	200	1.35	1.11 - 1.64	102	103	1.43	1.06 - 1.92	96	97	1.27	0.95 - 1.70
< 0.8	54	39	1		31	17	1		23	22	1	
0.8-1.36	49	40	1.35	0.71 - 2.58	24	17	1.95	0.68 - 5.60	25	23	0.92	0.38 - 2.20
1.38-2.11	46	44	1.80	0.90 - 3.61	20	25	3.89	1.33 - 11.41	26	19	0.83	0.29 - 2.39
> 2.11	49	77	2.63	1.39 - 4.10	27	44	4.68	1.68 - 13.05	22	33	1.38	0.55 - 3.50
<b>IL10 pg/mL</b>	198	199	1.23	1.10 - 1.36	102	103	1.24	1.07 - 1.45	96	96	1.23	1.04 - 1.45
< 0.03	50	27	1		27	13	1		23	14	1	
0.03-0.52	49	41	2.07	1.01 - 4.24	24	15	1.41	0.49 - 4.04	25	26	2.62	0.86 - 7.95
0.53-0.99	50	40	1.73	0.82 - 3.65	23	26	2.35	0.84 - 6.58	27	14	1.04	0.29 - 3.67
> 0.99	49	91	3.95	1.99 - 7.83	28	49	3.45	1.34 - 8.88	21	42	4.12	1.35 - 12.53
<b>IP10 pg/mL</b>	199	200	3.25	1.98 - 5.34	103	103	3.36	1.67 - 6.78	96	97	3.00	1.46 - 6.18
< 144	50	23	1		23	6	1		27	17	1	
144-199	50	29	1.42	0.70 - 2.85	26	14	1.93	0.66 - 5.59	24	15	1.02	0.37 - 2.77
200-311	50	61	3.14	1.54 - 6.39	25	34	4.32	1.47 - 12.70	25	27	2.27	0.84 - 6.14
> 311	49	87	5.38	2.50 - 11.55	29	49	5.28	1.72 - 16.15	20	38	4.93	1.67 - 14.59
<b>TNFα pg/mL</b>	198	200	2.81	1.70 - 4.65	102	103	2.93	1.40 - 6.11	96	97	2.41	1.17 - 4.94
< 9.48	50	29	1		22	9	1		28	20	1	
9.48-13	51	44	1.96	0.96 - 4.00	23	20	3.57	1.11 - 11.53	28	24	1.33	0.50 - 3.55
14-16.47	48	41	1.61	0.83 - 3.14	28	21	1.85	0.61 - 5.61	20	20	1.22	0.48 - 3.10

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> 16.47	49	86	3.47	1.81 - 6.65	29	53	5.00	1.68 - 14.91	20	33	2.66	1.06 - 6.63
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N, number; OR, odds ratio; CI, confidence interval. ORs were adjusted for age at serum sample date (continuous), race/ethnicity (categorical), and HCV infection status at serum sample date.

