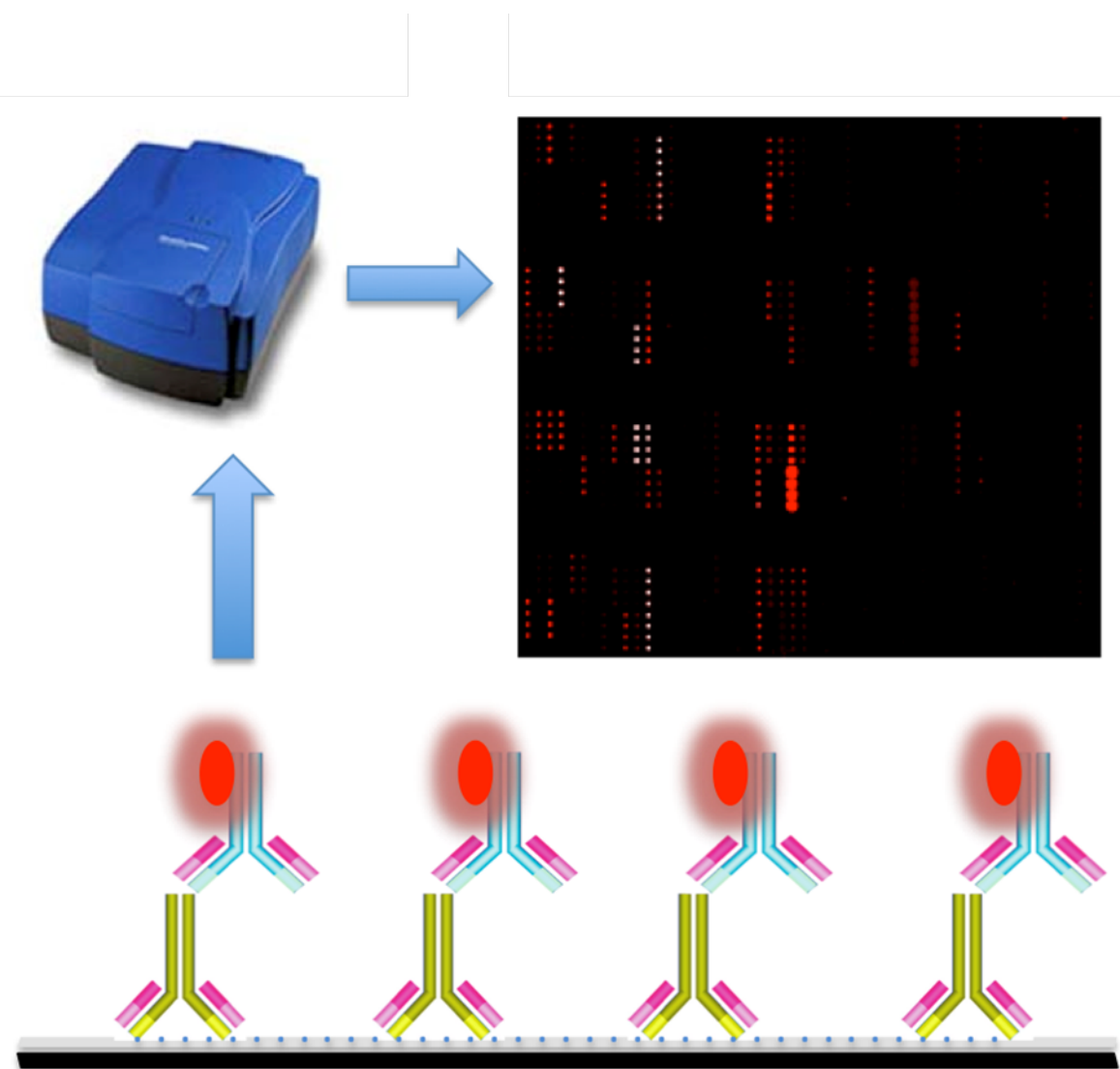


SUPPLEMENTAL MATERIAL

Protein microarray analysis reveals BAFF-binding autoantibodies in systemic lupus erythematosus

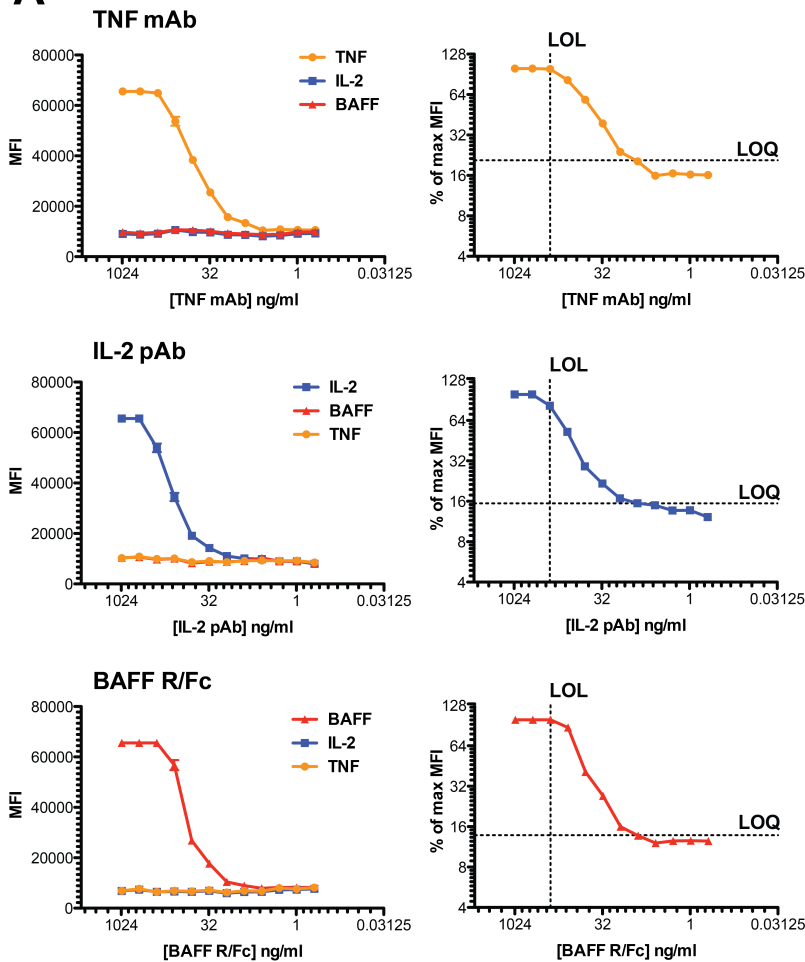
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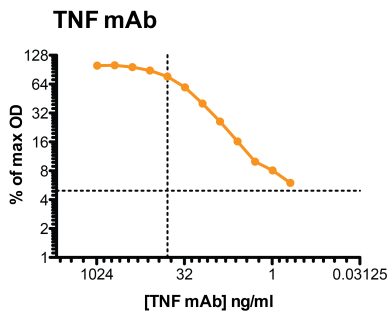


Supplementary Figure 1. Schematic of the array assay. We printed protein antigens onto glass microscope slides coated with a layer of nitrocellulose using a robotic microarrayer. To process arrays, we incubated printed slides with sample containing antibodies from commercial sources or derived from human samples. To identify array features bound by antibodies in the sample, we incubated the arrays with fluorescently conjugated secondary antibody specific for the Fc region of the primary antibody probe. To visualize reactive features, we scanned processed arrays using an Axon™ digital microarray scanning system, and quantified median fluorescence intensity (MFI) as a measure of primary antibody reactivity.

A



B

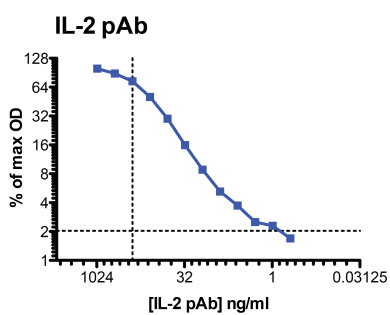


TNF mAb array	MFI	[TNF mAb] ng/ml
LOB	11017.5	—
LOD	11925.8	—
LOQ	13582.3	8.1
LOL	64915.9	250

log(dynamic range) = 1.49

TNF mAb ELISA	OD	[TNF mAb] ng/ml
LOB	0.061	—
LOD	0.064	—
LOQ	0.067	below 0.49
LOL	0.86	62.5

log(dynamic range) = 2.11

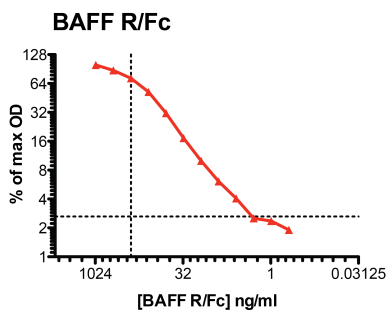


IL-2 pAb array	MFI	[IL-2 pAb] ng/ml
LOB	8869.2	—
LOD	9307.3	—
LOQ	10106.4	11.4
LOL	53934.0	250

log(dynamic range) = 1.34

IL-2 pAb ELISA	OD	[IL-2 pAb] ng/ml
LOB	0.059	—
LOD	0.060	—
LOQ	0.062	0.82
LOL	2.24	250

log(dynamic range) = 2.48



BAFF R/Fc array	MFI	[BAFF R/Fc] ng/ml
LOB	7396.1	—
LOD	7980.7	—
LOQ	9046.9	35.4
LOL	65535	250

log(dynamic range) = 0.85

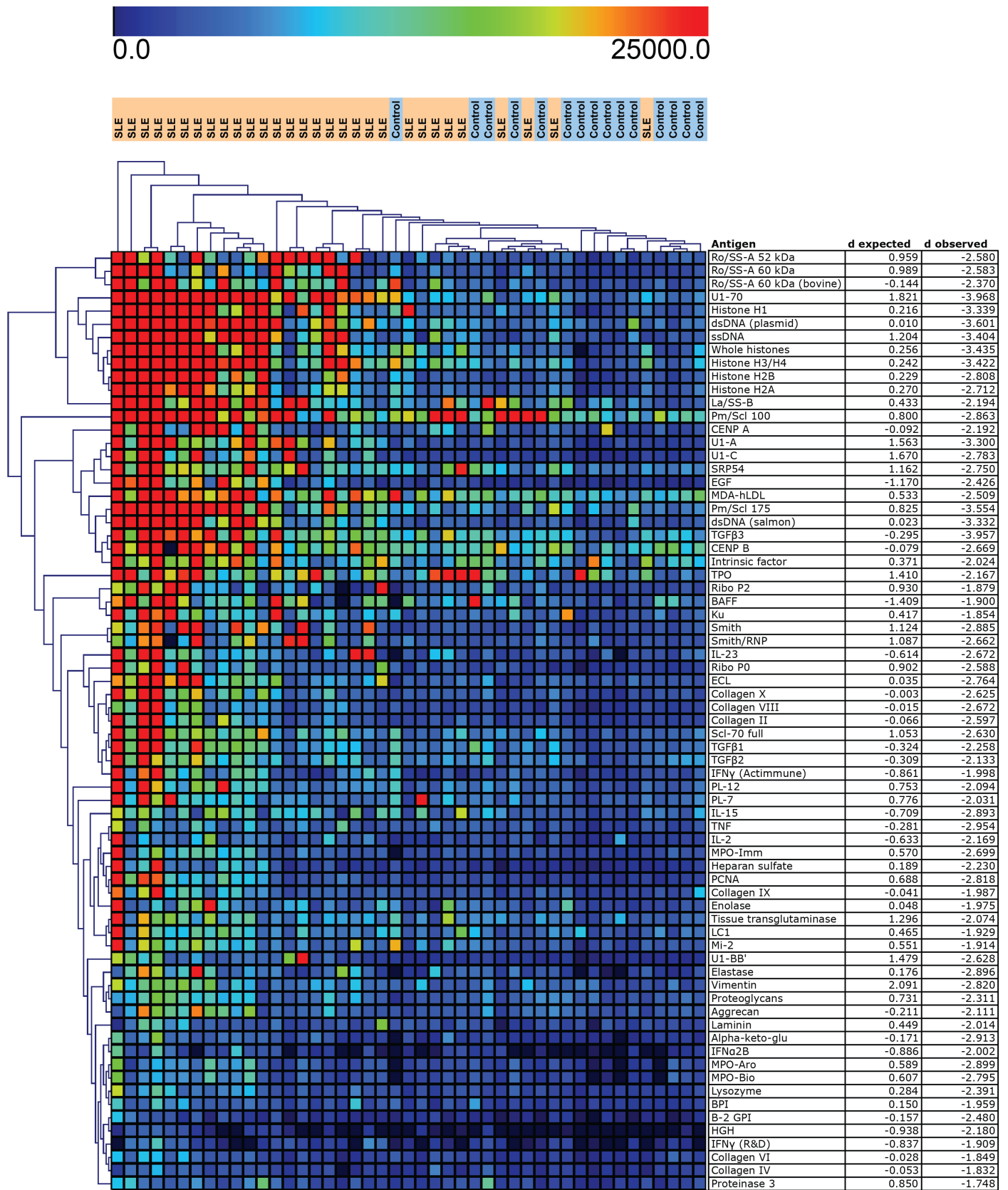
BAFF R/Fc ELISA	OD	[BAFF R/Fc] ng/ml
LOB	0.063	—
LOD	0.066	—
LOQ	0.070	1.70
LOL	1.94	250

log(dynamic range) = 2.17

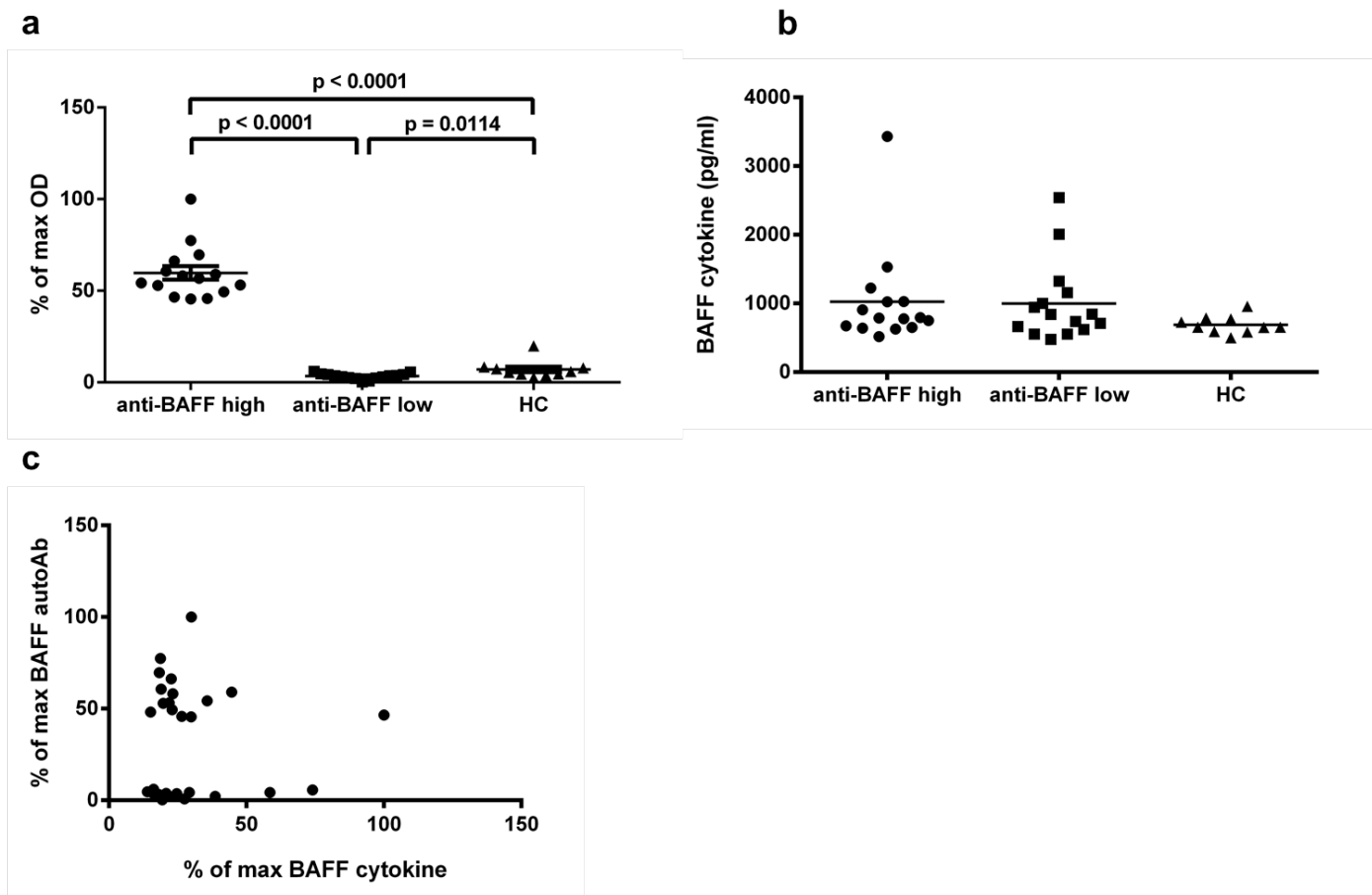
Supplementary Figure 2. Serum factor array dynamic range of detection for mAb, pAb and

R/Fc probes and comparison with ELISA.

(A) Graphs displaying array signal (MFI) of a two-fold dilution of TNF mAb, IL-2 pAb and BAFF R/Fc probes ranging from 1000ng/ml – 0.49ng/ml and including a 0ng/ml “blank” control. RAW MFI (linear scale) is shown plotted against [probe] on a \log_2 scale (left panels), and as %of max MFI vs. [probe] on a \log_2 scale (right panels). LOL, limit of linearity; LOQ, limit of quantitation (see materials and methods for details). **(B)** Graphs displaying ELISA signal measured for the same 2-fold serial dilution of TNF mAb, IL-2 pAb and BAFF R/Fc probes shown in A, and table (left) displaying a summary of the array and ELISA measurements used to calculate the dynamic range of detection for each probe in each system. LOB, limit of blank; LOD, limit of detection; LOQ, limit of quantitation; LOL, limit of linearity (see materials and methods for details). Error bars represent mean \pm s.e.m. of 24 replicate array feature MFI or 4 replicate ELISA well OD measurements for each [probe].

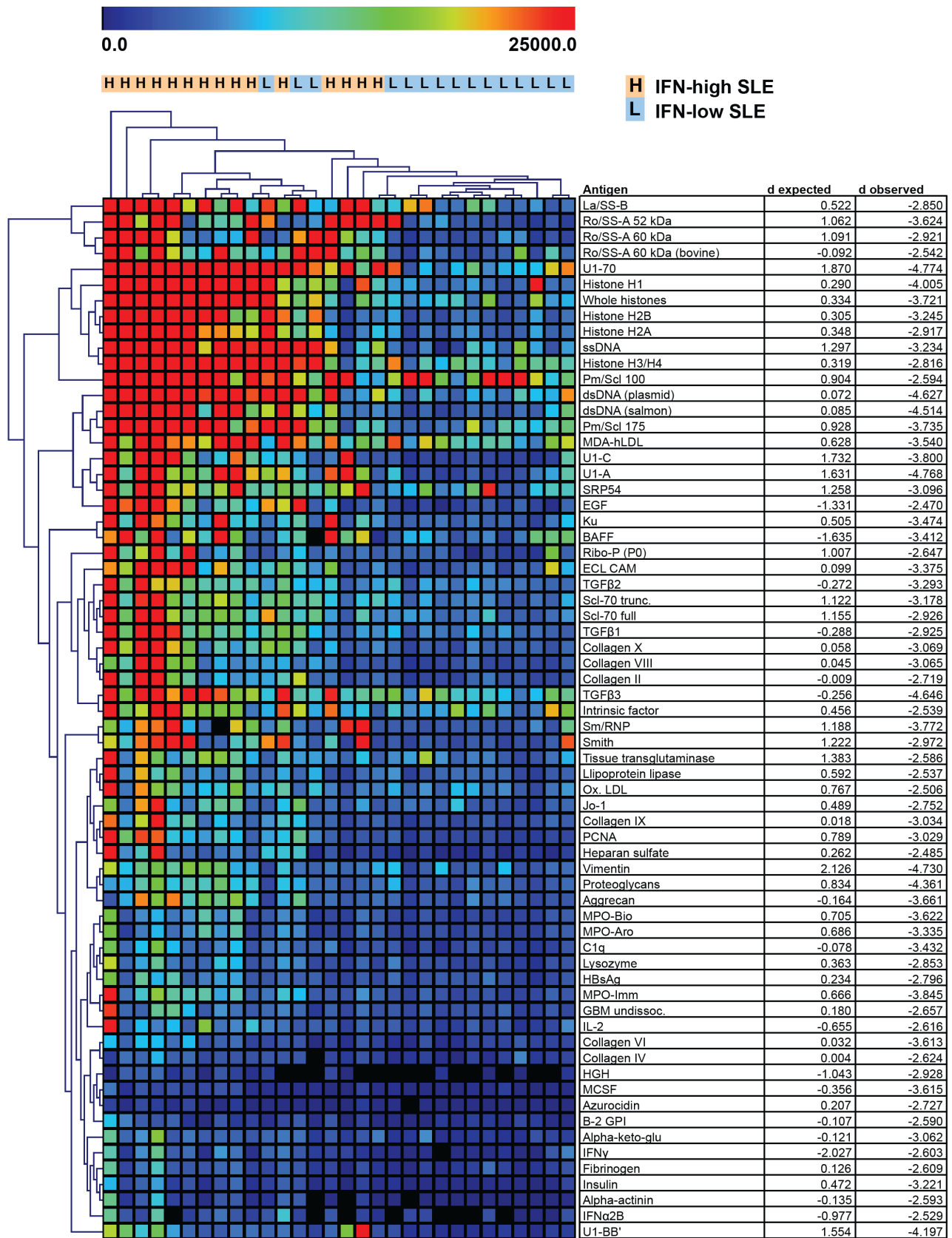


Supplementary Figure 3. SAM algorithm-generated t statistics (d-scores) for indicated array features presented in Figure 2. Heatmap from Figure 2 displaying antigens identified to be significantly associated with SLE vs. control samples, $q < 0.001$, with associated d scores generated by the SAM algorithm.

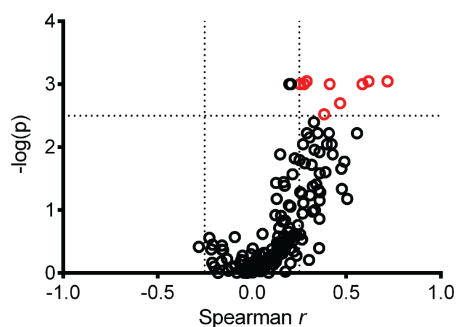


Supplementary Figure 4. Anti-BAFF autoantibody levels and serum BAFF levels in 40 samples from the Stanford Chronic Immunologic Diseases Registry and Repository. (A)

Graph displaying level of BAFF-binding IgG autoantibodies in 40 SCIDRR cohort samples as measured by ELISA, stratified by highest and lowest level of BAFF reactivity. P values (two-tailed) were calculated using a Mann-Whitney U test to compare OD values in the different sample groups. Error bars represent mean \pm s.e.m. of sample group OD values. (B) Level of serum BAFF protein in samples depicted in **a** as measured by sandwich ELISA (R&D). Levels of serum BAFF in all three categories were not observed to differ significantly. (C) Relationship of BAFF-binding autoantibodies and level of serum BAFF in 40 Registry samples.



Supplementary Figure 5. Serum factor array analysis of autoantibody reactivity in IFN-high and IFN-low SLE samples. Heatmap displaying serum IgG reactivity significantly associated with IFN-high (beige) SLE disease state vs. IFN-low (blue) SLE disease state $q < 0.001$, with associated d scores generated by the SAM algorithm.



Protein	Spearman <i>r</i>	p value	q value
ICAM-3	0.718	<0.001	0.035
MIP-1 α (CCL3)	0.618	<0.001	0.035
Lymphotoxin (TNF β)	0.288	<0.001	0.035
ALCAM	0.253	0.001	0.017
Amphiregulin	0.274	0.001	0.017
Neurotrophin-4	0.411	0.001	0.017
TIMP-1	0.586	0.001	0.017
IL-2	0.467	0.002	0.033
IL-1 β	0.381	0.003	0.044

Figure 6. BAFF reactivity correlates with measurements of serum proteins associated with more severe SLE in the ABCoN cohort. Plot displaying measurements of serum proteins associated with BAFF reactivity in the ABCoN cohort. A Spearman *r* correlation coefficient was generated to test the relationship of each serum protein with BAFF reactivity, and false discovery rate (*q* value) was determined using the Benjamini and Hochberg method to correct for multiple hypothesis testing. Dashed lines correspond to Spearman *r* (>0.25,<0.25; x-axis), and a significance level of *q*<0.05 (*p*<0.001; y-axis). Features meeting these criteria are shown in red and listed in the table, right. See **Supplementary Table 3** for correlation statistics for all serum proteins tested.

Supplementary Table 1. Serum factor microarray antigens

Serum Factor Antigens

Name	Vendor	Item/Catalog #	Notes/other info
April	R&D	884-AP-010	TNFSF13
BAFF	R&D	2149-BF-010	B cell activation factor of the TNF family (BLyS/TNFSF13B)
BDNF	Humanzyme	HZ-6501	Brain-derived neurotrophic factor
BMP4	Humanzyme	HZ-1046	Bone morphogenic protein 4
BNP	Humanzyme	HZ-6502	Brain natriuretic peptide
C1q	Biodesign	A90150H	Complement C1q protein, from human serum
EGF	Humanzyme	HZ-6504	Epidermal growth factor
EPO	Humanzyme	HZ-1021	Erythropoietin
FGF-basic	R&D	233-FB	Basic fibroblast growth factor (bFGF, FGF2)
Flt3L	Humanzyme	HZ-1034	Fms-related tyrosine kinase 3 ligand
GCSF	Humanzyme	HZ-1050	Granulocyte colony-stimulating factor
GMCSF	Humanzyme	HZ-1002	Granulocyte-macrophage colony-stimulating factor
HGF	Humanzyme	HZ-1054	Hepatocyte growth factor
HGH	Humanzyme	HZ-1006	Human growth hormone
IFNa2A	Humanzyme	HZ-1064	Interferon alpha 2A
IFNa2A	PBL	111000-1	Interferon alpha 2A
IFNa2A	eBioscience	-	Interferon alpha 2A
IFNa2B	Humanzyme	HZ-1070	Interferon alpha 2B
IFNg	Actimmune	-	Interferon gamma (injectable drug)
IFNg	R&D	285IF	Interferon gamma
IFNg	eBioscience	BMS303	Interferon gamma
IFNomega	Peptotech	300-02J	Interferon Omega
IL-1B	eBioscience	14-8018-62	Interleukin 1 beta
IL-2	Humanzyme	HZ-1015	Interleukin 2
IL-3	Humanzyme	HZ-1073	Interleukin 3
IL-3	Peptotech	200-03	Interleukin 3
IL-4	Humanzyme	HZ-1052	Interleukin 4
IL-5	R&D	205-IL	Interleukin 5
IL-6	eBioscience	14-8069-62	Interleukin 6
IL-6	Humanzyme	HZ-1058	Interleukin 6
IL-6	Peptotech	200-06	Interleukin 6
IL-7	R&D	207-IL	Interleukin 7
IL-8	R&D	208-IL	Interleukin 8 (CXCL8)
IL-8	eBioscience	14-8089-63	Interleukin 8 (CXCL8)
IL-9	eBioscience	14-8958-62	Interleukin 9
IL-9	R&D	209-IL-010	Interleukin 9
IL-10	Humanzyme	HZ-1145	Interleukin 10
IL-11	Humanzyme	HZ-6520	Interleukin 11
IL-12	Humanzyme	HZ-1256	Interleukin 12
IL-12 p70	eBioscience	14-8129-62	Interleukin 12 - p70 subunit
IL-13	Peptotech	200-13	Interleukin 13
IL-15	Humanzyme	HZ-6522	Interleukin 15
IL-17A	Humanzyme	HZ-1112	Interleukin 17A
IL-17E	R&D	1258-IL-025	Interleukin 17E, IL-25
IL-17F	HZ	HZ-1116	Interleukin 17F
IL-22	PT	200-22	Interleukin 22
IL-23	Humanzyme	HZ-1048	Interleukin 23
MCP1	R&D	279-MC	Monocyte chemotactic protein-1 (CCL2)
MCP1	eBioscience	14-8398-62	Monocyte chemotactic protein-1 (CCL2)
MCSF	Humanzyme	HZ-1059	Macrophage colony-stimulating factor
NOG	Humanzyme	HZ-1037	Noggin
OSM	Humanzyme	HZ-1060	Oncostatin M
SCF	Humanzyme	HZ-1061	Stem cell factor
TGFB1	Humanzyme	HZ-1011	Transforming growth factor beta 1
TGFB2	Humanzyme	HZ-1041	Transforming growth factor beta 2
TGFB3	Humanzyme	HZ1089	Transforming growth factor beta 3
TNF	Humanzyme	HZ-1014	Tumor necrosis factor
TPO - pepro	Peptotech	300-18	Thrombopoietin
TSLP	R&D	1398-TS-010	Thymic stromal lymphopoietin
VEGF 121	Humanzyme	HZ-1063	Vascular endothelial growth factor 121 amino acid splice variant
VEGF 165	Humanzyme	HZ-1062	Vascular endothelial growth factor 165 amino acid splice variant

SLE array only

APS-1/DMAC array only

Autoimmune Disease Tissue Antigens

Name	Vendor	Item/Catalog #	Notes/other info
Actin	Sigma	A2522	From rabbit muscle
Aggrecan	Sigma	A1960	From bovine articular cartilage
Aldolase	Sigma	A2714	From rabbit muscle
Alpha-actinin	Sigma	A9776	From chicken gizzard
Alpha-keto-glu	Sigma	K1502	Alpha-Ketoglutarate dehydrogenase, from porcine heart
Annexin	Sigma	A9450	From human placenta
Azurocidin	The Binding Site/Arotec	ATA01-02	From human neutrophils
B-2 GPI	Diarect	14901	Beta-2 glycoprotein 1 (Apolipoprotein H), recombinant human
BCOADC-E2	SurModics	A17701	E2 component of the branched chain 2-oxo-acid dehydrogenase complex, recombinant human
BPI	The Binding Site/Arotec	ATB01-02	Bactericidal/permeability increasing protein, from human neutrophils
Cardiolipin	Sigma	C0563	From bovine heart
Cardiolipin	Sigma	C1649	From bovine heart
CENP A	Diarect	16901	Recombinant human
CENP B	Diarect	12501	Recombinant human
Collagen II	Sigma	C1188	Bornstein and Traub Type II collagen, from bovine tracheal cartilage
Collagen IV	Sigma	C7521	Bornstein and Traub Type IV collagen, from human placenta
Collagen IX	Sigma	C3657	Bornstein and Traub Type V collagen, from human placenta
Collagen VI	Sigma	C8374	Bornstein and Traub Type IV, Sigma Type VI, from human placenta
Collagen VIII	Sigma	C7774	Bornstein and Traub Type I, Sigma Type VIII, from human placenta
Collagen X	Sigma	C4407	Bornstein and Traub Type III, Sigma Type X, from human placenta
dsDNA (plasmid)	Diarect	12301	Double-stranded DNA 3.4 kb plasmid, from E. coli
dsDNA (salmon)	Sigma	D1626	Double-stranded DNA, from salmon
EBNA-1	Sigma Genosys	Custom	Epstein-Barr nuclear antigen 1 (aa 398-412, sequence PPPGRRPFFHPVGEA)
EBV EA-D	Biodesign	R18740	Epstein-Barr early antigen D, recombinant
EBV VCA	Biodesign	8180	Epstein-Barr viral capsid antigen (VCA) gp125, from Burkitt's lymphoma cells
EBV-NA-1	Biodesign	R57523	Epstein-Barr nuclear antigen 1, recombinant
ECL CAM	US Biological	E0275	Enterochromaffin-like cells (ECL) cell attachment matrix
Elastase	The Binding Site/Arotec	ATE-01	From human neutrophils
Enolase	Sigma	E0379	From rabbit muscle
Fibrinogen 1-S	Sigma	F8630	Type I-S, from bovine plasma
Fibrinogen I	Sigma	F4129	Factor 1, from human plasma
Fibrinogen IV	Sigma	F4753	Type IV, from bovine plasma
GBM-dissoc	Diarect	16801	Glomerular basement membrane, dissociated, human alpha-3 chain of collagen IV, recombinant human
GBM-undissoc	Diarect	15901	Glomerular basement membrane, undissociated, human alpha-3 chain of collagen IV, recombinant human
Gpr78	Assay Designs/Stressgen	SPP-765F	Immunoglobulin heavy chain binding protein (BiP), recombinant hamster
HBsAg	Meridian Life Sciences	R36100	Hepatitis B virus surface antigen, from human plasma
Heparin	Sigma	H4784-250MG	Heparin sulfate sodium salt, from porcine intestinal mucosa
HDL	Academy Bio-medical	80P-HD101	Human high density lipoprotein
Histone H1	Immunovision	His-1001	Histone H1, from bovine tissue
Histone H2a	Immunovision	His-1002	Histone H1, from bovine thymus
Histone H2b	Immunovision	His-1003	Histone H2b, from bovine tissue
Histone H3/H4	Immunovision	His-1004	Histone H3 and H4, from bovine tissue
Whole histones	Immunovision	His-1000	Whole histones, from chicken red blood cells
Hsp25	Assay Designs/Stressgen	NSP-510F	Heat shock protein 25kDa, recombinant murine
Hsp47	Assay Designs/Stressgen	SPP-535F	Heat shock protein 47kDa (colliglin), recombinant human
Hsp60	Assay Designs/Stressgen	NSP-540	Heat shock protein 60kDa, recombinant human
Hsp70	Assay Designs/Stressgen	NSP-555	Heat shock protein 70kDa, recombinant human
Hsp90	Assay Designs/Stressgen	NSP-770	Heat shock protein 90kDa, recombinant human
IF	Diarect	16701	Intrinsic factor, recombinant human
Insulin	Sigma	I0908	Recombinant human
Jo-1	Diarect	12900	Histidyl-tRNA synthetase, recombinant human
Ku	Diarect	17300	p70/p80, recombinant human
La/SS-B	Diarect	12800	Recombinant human
Laminin	Sigma	L2020	From EHS murine sarcoma basement membrane
LC1	Diarect	13700	Forminotransferase Cyclodeaminase (liver cytosol type 1 antigen), recombinant human
LKM1	SurModics	A13501	Cytochrome P450 2D6 (CYP2D6), recombinant human
LL	Sigma	L9656	Lipoprotein lipase, from pseudomonas species
Lysozyme	The Binding Site/Arotec	ATL03-02	From human neutrophils
M2	Diarect	18000	Equal mass mixture of PDC-E2, OGDC-E2 and BCOADC-E2, recombinant human
MDA-hLDL	Academy Bio-medical Co.	20P-MD-L110	Malondialdehyde modified human low density lipoprotein
Measles	Meridian Life Sciences	R14120	Measles (Rubeola) antigen, from vero cells, Edmonston strain
Mi-2	Diarect	18100	Mi-2 β protein, recombinant human
MPO	ImmunoVision	MPO-3000	Myeloperoxidase (pANCA antigen), from human promyelocytic cell line
MPO-Aro	The Binding Site/Arotec	ATM01-02	Myeloperoxidase (pANCA antigen), from human neutrophils
MPO-Bio	Meridian Life Sciences	A50181H	Myeloperoxidase (pANCA antigen), from human neutrophils
Mumps	Meridian Life Sciences	8099	BSC-1 antigen, Enders strain
Myosin	Sigma	M1636	From rabbit muscle
NR2A	Sigma Genosys	Custom	Glutamate/N-methyl-D-aspartic acid (NMDA) receptor subunit peptide, sequence SVSYDDWDYSLARV
OGDC-E2	SurModics	A17801	2-oxo-glutarate dehydrogenase complex, recombinant human
Ox-LDL	Academy Bio-medical Co.	20P-OX-L110	Copper oxidized human low density lipoprotein
PCNA	Diarect	15400	Proliferating cell nuclear antigen, recombinant human
PDC	SurModics	A17901	E2 component of the pyruvate dehydrogenase complex, recombinant human
PDH	Sigma	P7032	Pyruvate dehydrogenase, from porcine heart
PG	Sigma	P5864	Proteoglycans, from bovine nasal septum
PL-12	Diarect	15701	Alanyl-tRNA synthetase, recombinant human
PL-7	Diarect	15601	Theonyl-tRNA synthetase, recombinant human
Pm/Scl 100	Diarect	16001	Nucleolar protein, part of Pm/Scl complex or nuclear exosome, recombinant human
Pm/Scl 75	SurModics	A17001	Nucleolar protein, part of Pm/Scl complex or nuclear exosome, recombinant human
PR3-Aro	Arotec	ATP02-10	Proteinase 3 antigen (cANCA antigen), from human neutrophils
PR3-IV	ImmunoVision	PR3-3000	Proteinase 3 antigen (cANCA antigen), from human promyelocytic cell line
Ribo P0	Diarect	14101	Ribosomal Phosphoprotein P0, recombinant human
Ribo P1	Diarect	14200	Ribosomal Phosphoprotein P1, recombinant human
Ribo P2	Diarect	14301	Ribosomal Phosphoprotein P2, recombinant human
Ro/SS-A 52 kDa	Diarect	12701	Ro-52 ribonucleoprotein, recombinant human
Ro/SS-A 60 kDa	Diarect	17401	Ro-60 ribonucleoprotein, recombinant human
Ro/SS-A 60kDa (bovine)	Diarect	15501	Ro-60 Ribonucleoprotein, from calf thymus
Rubella	Meridian Life Sciences	R9A123	Rubella antigen, from Vero cells, strain HPV-77
Scl-70 (trunc)	Diarect	14501	DNA topoisomerase I truncated 70kDa processed antigenic form, recombinant human
Scl-70 (full)	Diarect	12401	DNA topoisomerase I full-length 100kDa form, recombinant human
Sm/RNP	ImmunoVision	SRC-3000	Small nuclear ribonucleoprotein complex (A, B, B', C, D, E/F, G), from calf spleen, thymus and/or rabbit thymus
Smith	ImmunoVision	SMA-3000	Smith antigen (small nuclear ribonucleoproteins B, B', D), from bovine spleen or thymus
SRP54	SurModics	A18401	Signal recognition particle 54, recombinant human
ssDNA	Sigma	D7656	Single-stranded DNA (587-831 nt), from salmon
TG	Diarect	12201	Thyroglobulin, from human thyroid glands
Tissue tGV	Diarect	15201	Tissue transglutaminase (tTG;BV), recombinant human
TPO	Diarect	12101	Thyropoxidase, recombinant human
U-snRNP-BB'	Diarect	13301	Small nuclear ribonucleoprotein BB', recombinant human
U1-snRNP-A	Diarect	13101	Small nuclear ribonucleoprotein A, recombinant human
U1-snRNP-C	Diarect	13201	Small nuclear ribonucleoprotein C, recombinant human
U1-snRNP68	Diarect	13001	Small nuclear ribonucleoprotein 68 (U1-70), recombinant human
Vimentin	Sigma	V4383	From bovine lens

SLE array only

Supplementary Table 2. SLE and healthy control cohort demographic information.

Cohort	ABCoN SLE (<i>n</i> = 30)	ABCoN HC (<i>n</i> = 15)	Stanford SLE (<i>n</i> = 93)	Stanford HC (<i>n</i> = 50)
Age (median)	41	40	36	35
Age range	22–60	32–57	20–81	22–67
Sex (F/M)	28/2	15/0	87/93	28/22
SLEDAI (median)	4	–	2	–
SLEDAI range	0–16	–	0–14	–
IFN signature	15 high, 15 low	–	not assessed	–

Supplementary Table 3. Correlation statistics of ABCoN sample serum protein levels with BAFF reactivity.

Protein	ID	Spearman r	p value	q value	Protein	ID	Spearman r	p value	q value
ICAM3	Intercellular adhesion molecule 3	0.718	0.001	0.035	ACE-2	Angiotensin I converting enzyme 2	-0.159	0.364	0.714
MIP-1 \square	CCL3	0.618	0.001	0.035	IL-5RA	Interleukin 5 receptor, alpha	-0.281	0.383	0.714
Lymphotoxin	TNF \square , TNF superfamily, member 1	0.288	0.001	0.035	G-CSF	Colony stimulating factor 3	0.134	0.390	0.714
ALCAM	Activated leukocyte cell adhesion molecule	0.253	0.001	0.017	MIP-1 \square	CCL4	0.354	0.402	0.746
AR	Amphiregulin	0.274	0.001	0.017	LIF RA	Leukemia inhibitory factor receptor	0.003	0.405	0.746
NT4	Neurotrophin 4	0.411	0.001	0.017	IL-1RA	Interleukin 1 receptor antagonist	0.201	0.409	0.746
TIMP1	Tissue inhibitor of metalloproteinase 1	0.586	0.001	0.017	NAP-2	CXCL7	0.160	0.409	0.746
TNF	TNF \square , TNF superfamily, member 2	0.197	0.001	0.017	PDGFRA	Platelet-derived growth factor receptor, alpha	0.105	0.418	0.746
VEGF	Vascular endothelial growth factor	0.205	0.001	0.035	IL-9	Interleukin 9	-0.216	0.421	0.746
IL-2	Interleukin 2	0.467	0.002	0.033	MCP4	CCL13	-0.160	0.425	0.746
IL-1 \square	interleukin 1, beta	0.381	0.003	0.044	FGF R3 (IIIB)	Fibroblast growth factor receptor 3 (IIIB)	0.172	0.429	0.746
NT3	Neurotrophin 3	0.327	0.004	0.053	IGFBP-2	Insulin-like growth factor binding protein 2	0.137	0.430	0.746
6CKINE	CCL21	0.347	0.006	0.062	ST2	Interleukin-1 receptor-like 1	-0.153	0.431	0.746
FLT3 lig	Fms-related tyrosine kinase 3 ligand	0.290	0.006	0.062	IL-1SRII	Interleukin 1 receptor type 2	0.221	0.452	0.746
IGF-II	Insulin-like growth factor 2	0.407	0.006	0.062	B-NGF	Nerve growth factor, beta polypeptide	0.138	0.461	0.746
MCP-2	CCL8	0.557	0.006	0.062	EGF	Epidermal growth factor	0.134	0.464	0.746
GDNF	Glial cell derived neurotrophic factor	0.304	0.007	0.077	Leptin	Leptin	0.063	0.476	0.746
CD27	TNFR superfamily, member 7	0.269	0.009	0.082	IFN \square	Interferon alpha	0.121	0.483	0.746
TNF-R1	TNFR superfamily, member 1A	0.396	0.009	0.082	ProC	Protein C	0.161	0.483	0.746
TSH	Thyroid stimulating hormone	0.422	0.009	0.082	ET-3	Endothelin	0.070	0.490	0.746
IL-1 \square	Interleukin 1, alpha	0.330	0.011	0.095	ACE	Angiotensin I converting enzyme 1	0.152	0.497	0.746
GM-CSF	Colony stimulating factor 2	0.356	0.012	0.098	HB-EGF	Heparin-binding EGF-like growth factor	-0.007	0.498	0.746
E-selectin	Selectin E	0.149	0.013	0.097	HSP70	Heat shock protein 70	0.040	0.505	0.830
PLGF	Placental growth factor	0.427	0.013	0.097	ERBB1	Epidermal growth factor receptor	0.100	0.520	0.830
IL-5	Interleukin 5	0.226	0.015	0.107	FASL	Fas ligand	-0.050	0.528	0.830
VE-cadherin	Cadherin 5, type 2, VE-cadherin	0.251	0.016	0.109	BDNF	Brain-derived neurotrophic factor	0.235	0.530	0.830
MIP-3 \square	CCL19	0.490	0.017	0.111	IGFBP-4	Insulin-like growth factor binding protein 4	0.097	0.536	0.830
IL-15	Interleukin 15	0.278	0.018	0.113	IL-2RB	Interleukin 2 receptor, beta	0.118	0.576	0.830
IL-3	Interleukin 3	0.315	0.019	0.116	AGRP	Agouti related protein homolog (mouse)	0.023	0.583	0.830
D-dimer DD6	D-dimer, fibrin degradation product (DD6 clone)	0.474	0.022	0.128	TIE-2	TEK tyrosine kinase, endothelial	0.128	0.592	0.830
IL-8	Interleukin 8, CXCL8	0.388	0.025	0.141	IL2RG	Interleukin 2 receptor, gamma	-0.132	0.597	0.830
MCSFR	Colony stimulating factor 1 receptor	0.358	0.026	0.142	FGF1	Fibroblast growth factor 1	0.027	0.614	0.871
I309	CCL1	0.214	0.027	0.142	MCP-1	CCL2	0.301	0.617	0.871
LTBR	TNFR superfamily, member 3	0.167	0.036	0.183	MIF	Macrophage migration inhibitory factor	-0.057	0.618	0.871
MCSF	Colony stimulating factor 1	0.127	0.037	0.183	FGF-4	Fibroblast growth factor 4	0.128	0.624	0.871
CD141	Thrombomodulin	0.339	0.039	0.187	IL-16	Interleukin 16	-0.042	0.634	0.871
SCF	KIT ligand	0.172	0.041	0.191	HGF	Hepatocyte growth factor	-0.058	0.637	0.871
DR6	TNFR superfamily, member 21	0.321	0.042	0.191	CNTF	Ciliary neurotrophic factor	-0.161	0.653	0.871
IGFBP-1	Insulin-like growth factor binding protein 1	0.476	0.046	0.203	Follistatin	Follistatin	0.126	0.659	0.871
L-selectin	Selectin L	0.352	0.048	0.207	Lymphotactin	XCL1	0.117	0.659	0.871
HCC4	CCL16	0.254	0.052	0.200	Fractalkine	CX3CL1	0.032	0.665	0.871
IL-6	Interleukin6	0.360	0.052	0.200	HCC1	RNA-binding region containing 2	0.075	0.673	0.871
MMP-1	Matrix metalloproteinase 1	0.263	0.055	0.200	MCP-3	CCL7	-0.211	0.686	0.871
FAS	TNFR superfamily, member 6	0.307	0.058	0.200	GCP-2	CXCL6	0.203	0.694	0.871
IL-4	Interleukin 4	0.130	0.066	0.221	ERBB2	V-erb-b2 erythroblastic leukemia homolog 2	-0.004	0.699	0.871
ITAC	CXCL11	0.505	0.066	0.221	UPAR	Plasminogen activator, urokinase receptor	-0.018	0.701	0.935
MMP-2	Matrix metalloproteinase 2	0.357	0.070	0.221	TRAIL R4	TNFR superfamily, member 10d	-0.014	0.714	0.935
OSM	Oncostatin M	0.271	0.077	0.247	VEGF R2	Kinase insert domain receptor	0.062	0.731	0.935
HVEM	TNFR superfamily, member 14	0.195	0.084	0.268	IL-12p40	Interleukin 12B	0.112	0.735	0.935
FGF-2	Fibroblast growth factor 2	0.203	0.088	0.268	SCF R	V-kit 4 feline sarcoma viral oncogene	-0.007	0.752	0.935
GRO-G	CXCL3	0.332	0.100	0.294	FGF-6	Fibroblast growth factor 6	0.037	0.760	0.935
PF4	CXCL4	0.319	0.105	0.317	PAI-1	Plasminogen activator inhibitor type 1	-0.089	0.777	0.935
Prolac	Prolactin	0.267	0.113	0.335	MMP-9	Matrix metalloproteinase 9	-0.200	0.787	0.935
PAHI	Plasminogen activator inhibitor type 2	0.124	0.120	0.335	IL-10RB	Interleukin 10 receptor, beta	0.067	0.799	0.935
HCG	Human chorionic gonadotropin	0.153	0.123	0.357	VEGF-D	Vascular endothelial growth factor D	0.019	0.804	0.961
VEGFR3	Fms-related tyrosine kinase 4	0.356	0.137	0.379	IFN \square	Interferon gamma	0.000	0.807	0.961
PECAM1	Platelet/endothelial cell adhesion molecule	0.174	0.146	0.388	TIMP-2	Tissue inhibitor of metalloproteinase 2	-0.108	0.810	0.961
OPN	Osteopontin	0.175	0.148	0.388	IGF-IR	Insulin-like growth factor 1 receptor	0.011	0.812	0.961
AFP	Alpha-fetoprotein	0.159	0.150	0.388	RANK	TNFR superfamily, member 11a	0.059	0.822	0.961
IL-2SR \square	Interleukin 2 receptor, alpha	0.242	0.173	0.458	PARC	p53-associated parkin-like cytoplasmic protein	0.092	0.840	0.961
Endo	Endostatin, procollagen, type XVIII, alpha 1	0.144	0.191	0.494	TGF \square RIII	Transforming growth factor, beta receptor III	-0.014	0.841	0.961
ENA-78	CXCL5	0.197	0.192	0.494	SGP130	Soluble gp130	-0.020	0.857	0.961
LIF	Leukemia inhibitory factor	0.194	0.221	0.618	MMP-8	Matrix metalloproteinase 8	-0.051	0.862	0.961
FGF-7	Fibroblast growth factor 7	0.055	0.239	0.618	Neut Elast	Elastase 2, neutrophil	0.006	0.869	0.961
MIG	CXCL9	0.255	0.244	0.618	CD30	TNFR superfamily, member 8	0.047	0.871	0.961
CA125	Mucin 16	0.220	0.246	0.618	CTACK	CCL27	0.063	0.871	0.961
MIP-1 \square	CCL15	0.236	0.254	0.618	CRP	C-reactive protein	0.036	0.892	0.961
VCAM-1	Vascular cell adhesion molecule 1	0.138	0.263	0.618	BTC	Betacellulin	-0.032	0.893	0.961
MMP7	Matrix metalloproteinase 7	0.167	0.268	0.618	IL-13	Interleukin 13	-0.125	0.912	1.000
MPIF-1	CCL23	-0.091	0.268	0.618	EOT	CCL11	0.043	0.919	1.000
RANTES	CCL5	-0.226	0.276	0.618	CNTFR \square	Ciliary neurotrophic factor receptor, alpha	0.043	0.925	1.000
EOT-3	CCL26	0.190	0.277	0.618	41BB	TNFR superfamily, member 9	0.044	0.934	1.000
TARC	CCL17	0.205	0.280	0.618	CD44V6	CD44 antigen	0.176	0.949	1.000
IL-7	Interleukin 7	0.198	0.289	0.618	IFN \square	Interferon omega	0.003	0.972	1.000
BLC	CXCL13	0.264	0.291	0.618	PDGFR \square	Platelet-derived growth factor receptor, beta	-0.042	0.983	1.000
IL-18	Interleukin 18	0.263	0.292	0.618	Survivin	Baculoviral IAP repeat-containing 5	0.088	0.983	1.000
TGF \square	Transforming growth factor, alpha	0.217	0.304	0.714	UPA	Plasminogen activator, urokinase	-0.080	0.983	1.000
ICAM-1	Intercellular adhesion molecule 1	0.165	0.315	0.714	PEDF	Pigment epithelium derived factor, member 1	-0.027	0.989	1.000
MIP-3 \square	CCL20	0.144	0.321	0.714	CD40	TNFR superfamily member 5	-0.180	0.994	1.000
GROB	CXCL2	0.132	0.327	0.714	ANG	Angiotensin	0.0 (st dev = 0)	—	—
IL-1 SR1	Interleukin 1 receptor type 1	0.174	0.343	0.714	D-dimer DD5	D-dimer, fibrin degradation product (DD5 clone)	0.0 (st dev = 0)	—	—
TRAIL R1	TNFR superfamily, member 10a	0.187	0.345	0.714	IGFBP-3	Insulin-like growth factor binding protein 3	0.0 (st dev = 0)	—	—
P-selectin	CD62P	0.140	0.351	0.714	IGFBP-6	Insulin-like growth factor binding protein 6	0.0 (st dev = 0)	—	—
EOT2	CCL24	-0.209	0.352	0.714	IL-17	Interleukin17	0.0 (st dev = 0)	—	—
FGF R3 (IIIC)	Fibroblast growth factor receptor 3 (IIIC)	0.140	0.355	0.714	VAP-1	Vascular adhesion protein 1	0.0 (st dev = 0)	—	—
MMP-10	Matrix metalloproteinase 10	0.140	0.356	0.714	—	—	—	—	—