

SUPPLEMENTAL INFORMATION

for

Plasma Proteome Profiling in Giant Cell Arteritis

by

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Plasma proteome data standardization

Data standardization, comprised of normalization and calibration, was performed on the raw assay data to remove systematic biases after microarray feature aggregation. Normalization is a sample-by-sample adjustment to the overall signal within a single plate (run) performed across three non-consecutive steps: hybridization controls normalization, intraplate median signal normalization, and median signal normalization to a reference. Plate scaling and calibration were done through SOMAmer binding reagent-by-SOMAmer binding reagent adjustment to minimize between-plate variability. Global reference standards were established for procedures with controls on each plate. Individual samples, quality control (QC), and calibrator samples were normalized and calibrated to the established global reference standards. Separate calibrator global reference standards were established for each matrix, and assay shifts or skew from the global reference standards were tracked over time. In addition, SOMAmer reagents that represent control or non-human analytes were removed, resulting in 7,289 proteins for subsequent analyses. Of note, proteins having the same name but with multiple barcodes (i.e., SeqID) were considered as separate features. A total of 90 plasma samples were profiled using the SomaScan assay, and protein abundance RFUs were quantile normalized prior to all statistical analyses.

Serum or plasma CRP reference ranges for the clinical sites involved in this study

- Boston University: < 1.0 mg/dL
- Cleveland Clinic: < 0.9 mg/dL
- Mayo Clinic: < 5.0 mg/L
- Mount Sinai Hospital: < 10.0 mg/L
- St. Joseph's Healthcare Hamilton: < 10.0 mg/L
- University of Pennsylvania: < 0.8 mg/L (hsCRP < 7.5 mg/dL)

Protein symbols and their designations listed in order of appearance in the main text

Protein symbol	Designation
IFN- γ	Interferon gamma
IL-2	Interleukin 2
TNF- α	Tumor necrosis factor alpha
CCL25	C-C motif chemokine ligand 25
CD40	Tumor Necrosis Factor receptor Superfamily Member 5
CXCL9	C-X-C motif chemokine ligand 9
IL10RB	Interleukin 10 receptor subunit beta
MCP3	C-C motif chemokine ligand 7
SCF	Mast cell growth factor
PRKRA	Protein activator of interferon induced protein
VSIG4	V-set and immunoglobulin domain containing 4
CGB3	Chorionic gonadotropin subunit beta 3
SHARPIN	Shank-associated RH domain-interacting protein
ABLIM3	Actin binding LIM protein family member 3
RHOT1	Ras homolog family member T1
IL36A	Interleukin 36 alpha
IBSP	Integrin binding sialoprotein
BCDIN3D	RNA 5'-monophosphate methyltransferase
APOBEC3G	Apolipoprotein B mRNA editing enzyme catalytic subunit 3G
UROS	Uroporphyrinogen III synthase
FER	FER tyrosine kinase
APOA4	Apolipoprotein A4
BCAN	Brevican
P4HB	Prolyl 4-hydroxylase subunit beta
CCL11	C-C motif chemokine ligand 11
PLOD3	Procollagen-lysine,2-oxoglutarate 5-dioxygenase 3
IMPA1	Inositol monophosphatase 1
NRN1L	Neuritin 1 like
TOM1	Target of myb1 membrane trafficking protein
MMP12	Matrix metalloproteinase 12
UCHL1	Ubiquitin C-terminal hydrolase L1
TFRC	Transferrin receptor protein 1
PAPPA	Pappalysin 1
BIRC7	Baculoviral IAP repeat containing 7
LONP1	Lon peptidase 1, mitochondrial
CXorf38	Chromosome X open reading frame 38
YY2	Transcription Factor Yin Yang 2
NUMBL	NUMB like endocytic adaptor protein
HEPH	Hephaestin
RAD51D	DNA repair protein RAD51 homolog 4
RPLP2	Ribosomal protein lateral stalk subunit P2
NGFR	Nerve growth factor receptor
UCMA	Upper zone of growth plate and cartilage matrix associated
CA6	Carbonic anhydrase 6
KIR3DL1	Killer cell immunoglobulin like receptor, three Ig
PDGFC	Platelet derived growth factor C

PTP4A1	Protein tyrosine phosphatase 4A1
B2M	Beta-2-microglobulin
C9	Complement C9
CD8A	T-cell surface glycoprotein CD8 alpha chain
LBP	Lipopolysaccharide binding protein
IL5	Interleukin 5
TRIL	TLR4 interactor with leucine rich repeats
C8G	Complement C8 gamma chain
CCL14	C-C motif chemokine ligand 14
CFD	Complement factor D
CD59	Membrane attack complex inhibition factor
IL1RL1	Interleukin 1 receptor like 1
PDCD1	Programmed cell death 1
CCL3	C-C motif chemokine ligand 3
CFB	Complement factor B
CXCL3	C-X-C motif chemokine 3
CCL23	C-C motif chemokine 23
HLA-G	Major histocompatibility complex, class I, G
IL18R1	Interleukin 18 receptor 1
C1RL	Complement C1r subcomponent like
C1S	Complement component 1, S subcomponent
C2	Complement C2
C4BPA	Complement C4-B-Like
CR1	Complement receptor type 1
CFI	Complement factor I
CLU	Clusterin
CFHR1	Complement factor H related 1
CFHR5	Complement factor H related 5
C5	Complement C5
C6	Complement C6
MASP1	Mannan-binding lectin serine protease 1
C3	Complement C3