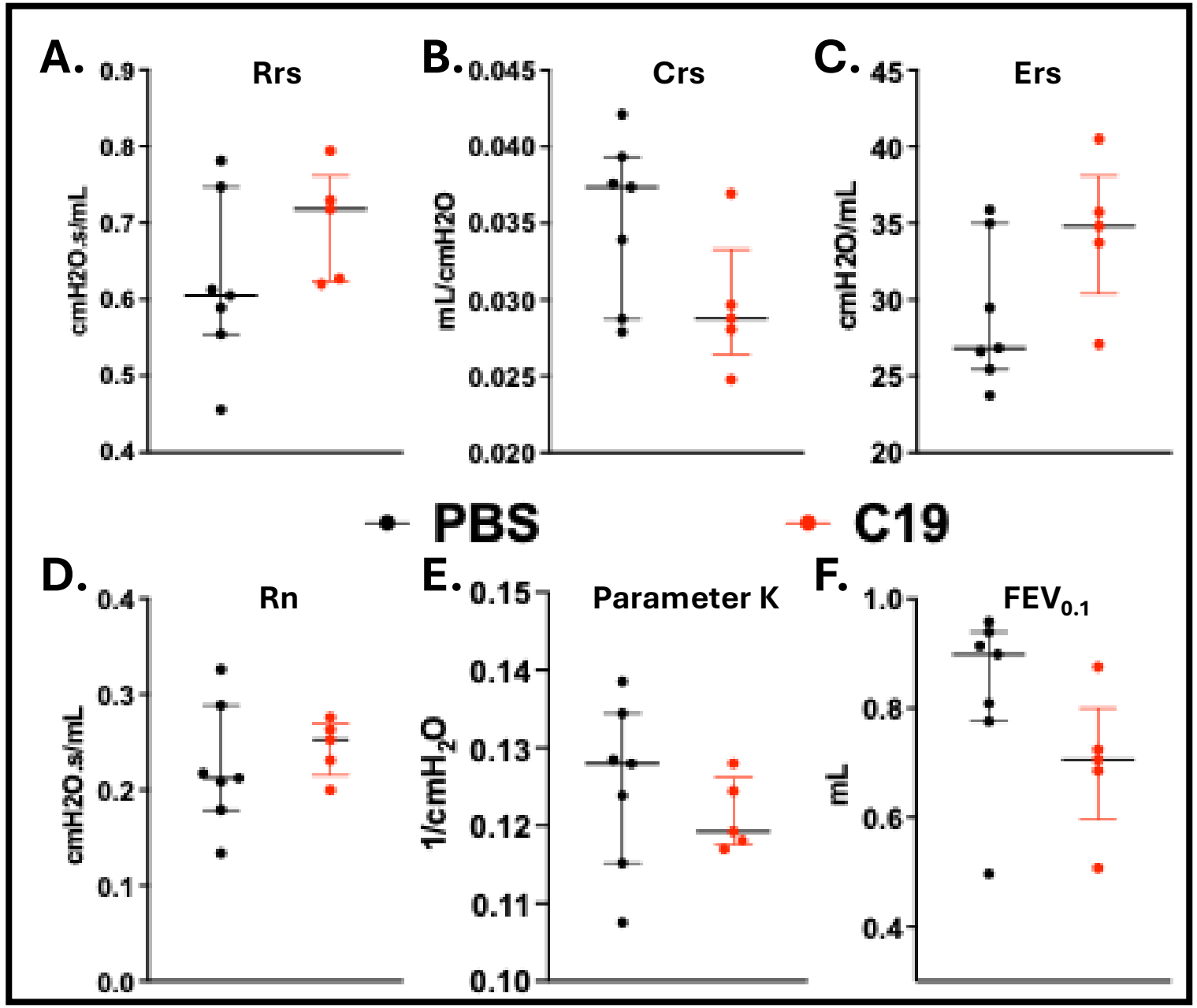
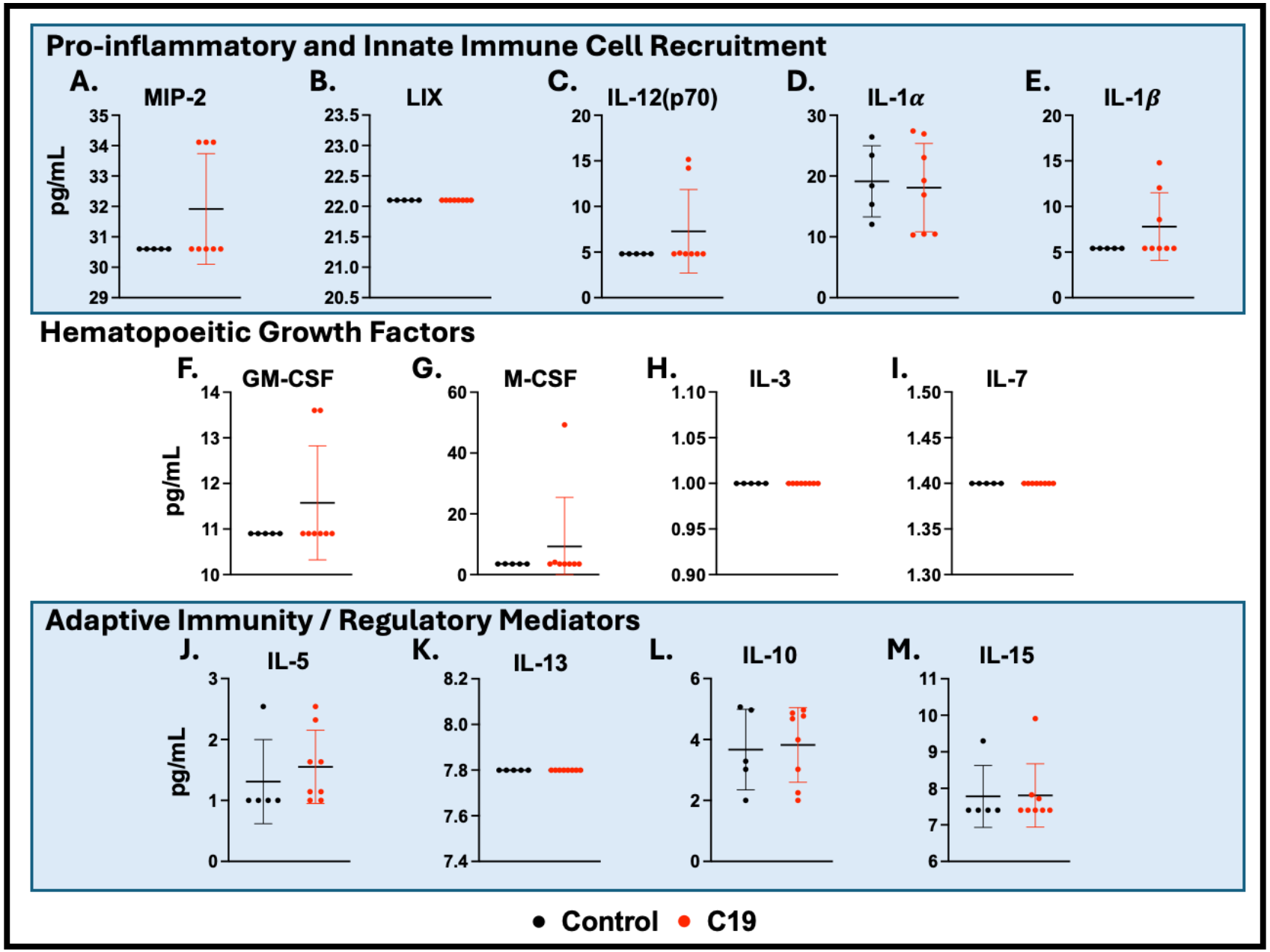
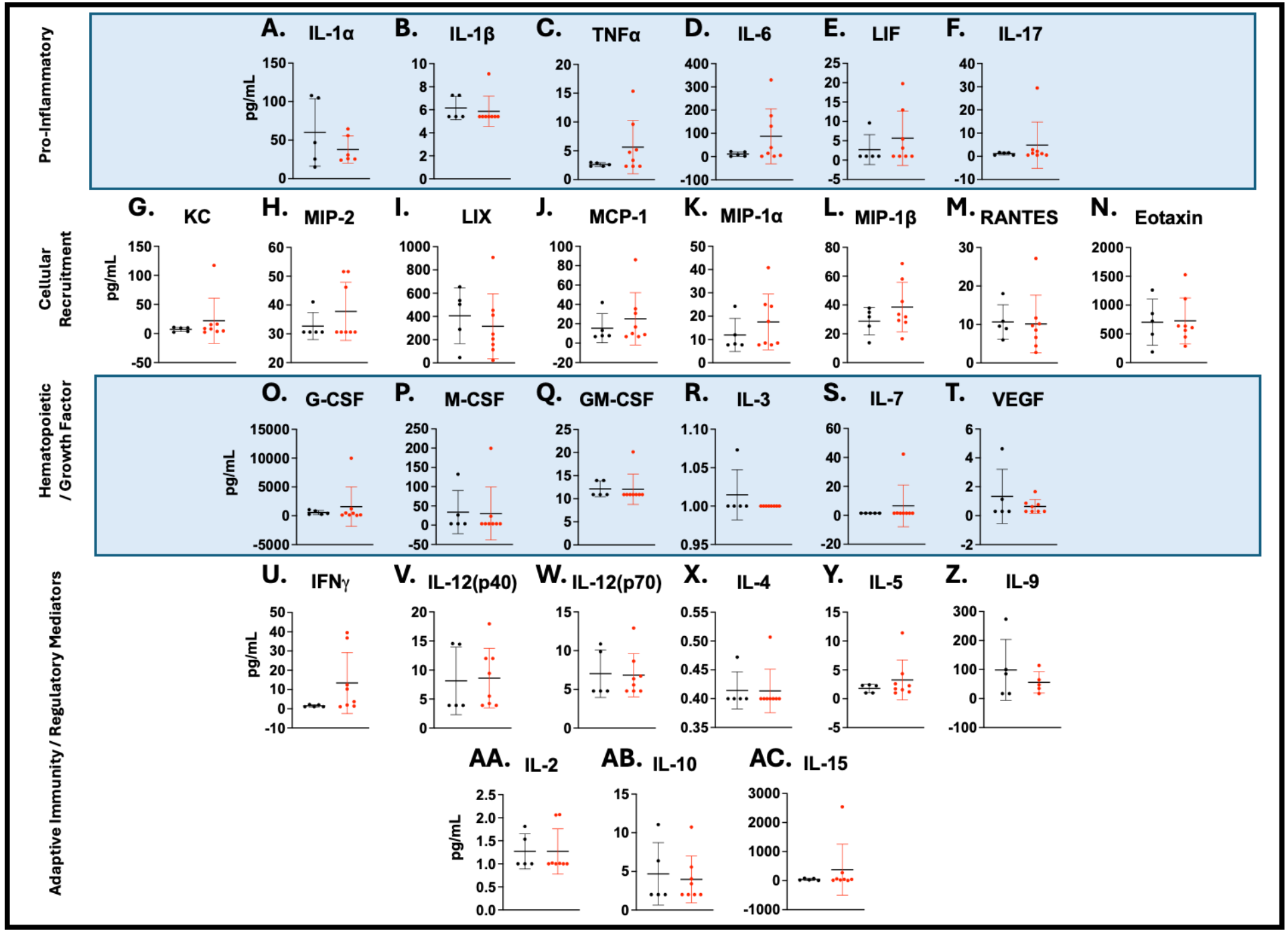
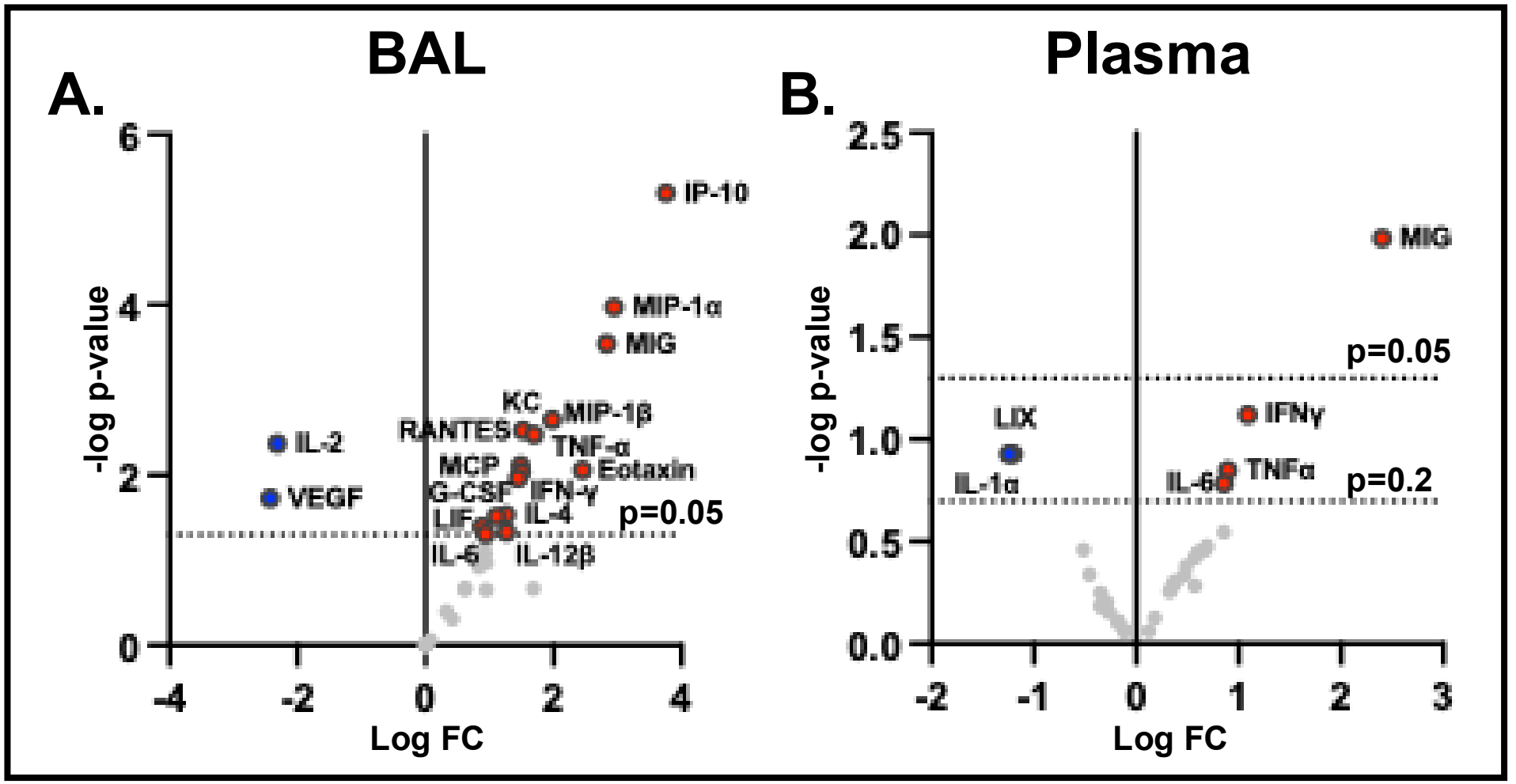
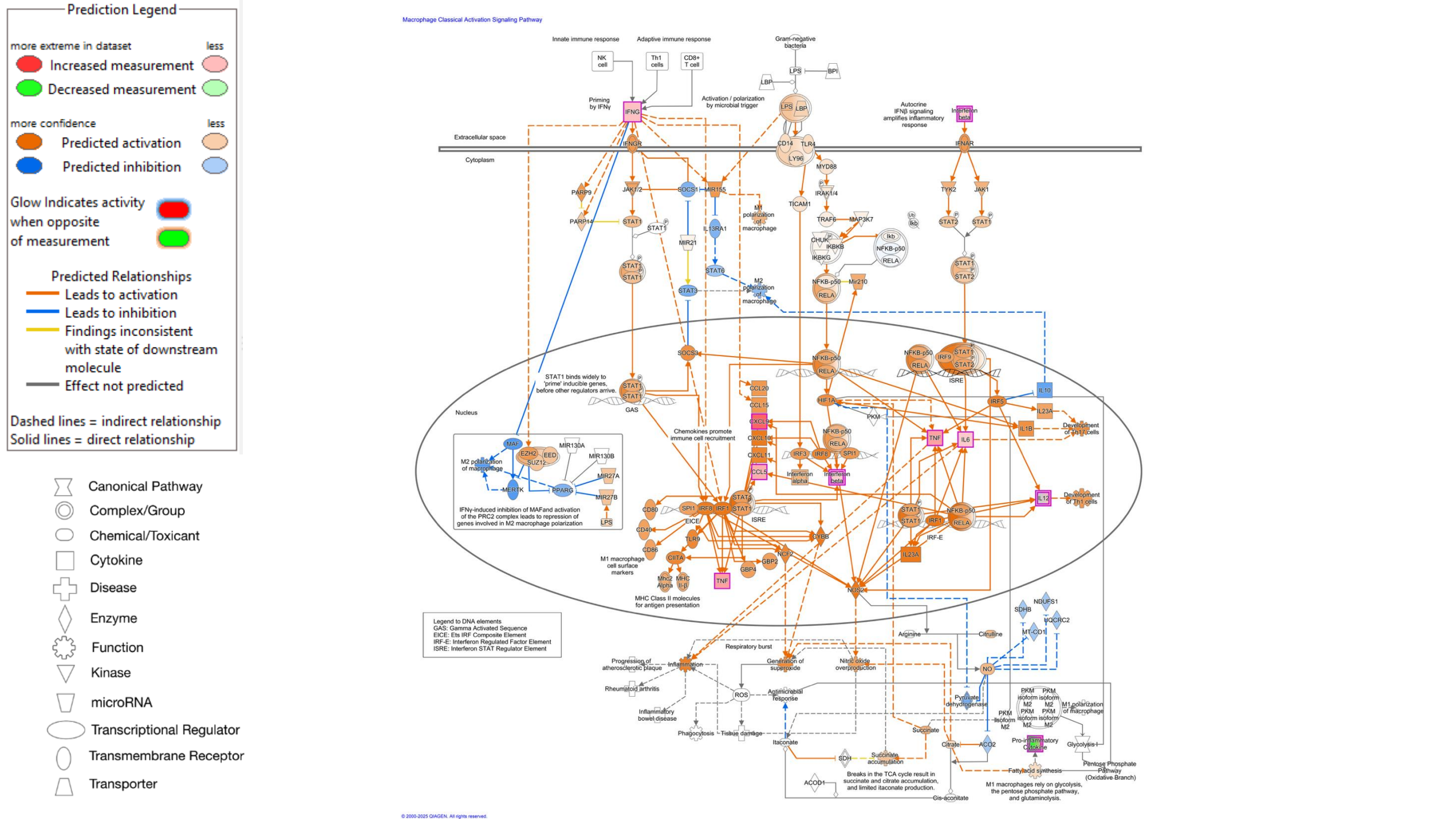

A.
Rrs
cmH2O.s/mL
0.9
0.8
0.7
0.6
0.5
0.4
B.
Crs
mL/cmH2O
0.045
0.040
0.035
0.030
0.025
0.020
C.
Ers
cmH2O/mL
45
40
35
30
25
20
PBS
C19
D.
Rn
cmH2O.s/mL
0.4
0.3
0.2
0.1
0.0
E.
Parameter K
1/cmH2O
0.15
0.14
0.13
0.12
0.11
0.10
F.
FEV0.1
mL
1.0
0.8
0.6
0.4


Pro-inflammatory and Innate Immune Cell Recruitment
A.
MIP-2
B.
LIX
C.
IL-12(p70)
D.
IL-1α
E.
IL-1β
pg/mL
Hematopoeitic Growth Factors
F.
GM-CSF
G.
M-CSF
H.
IL-3
I.
IL-7
pg/mL
Adaptive Immunity / Regulatory Mediators
J.
IL-5
K.
IL-13
L.
IL-10
M.
IL-15
pg/mL
Control
C19


Pro-Inflammatory
A. IL-1α
B. IL-1β
C. TNFα
D. IL-6
E. LIF
F. IL-17
pg/mL
Cellular Recruitment
G. KC
H. MIP-2
I. LIX
J. MCP-1
K. MIP-1α
L. MIP-1β
M. RANTES
N. Eotaxin
Hematopoietic / Growth Factor
O. G-CSF
P. M-CSF
Q. GM-CSF
R. IL-3
S. IL-7
T. VEGF
Adaptive Immunity / Regulatory Mediators
U. IFNγ
V. IL-12(p40)
W. IL-12(p70)
X. IL-4
Y. IL-5
Z. IL-9
AA. IL-2
AB. IL-10
AC. IL-15


BAL
A.
-log p-value
Log FC
IP-10
MIP-1α
MIG
KC
MIP-1β
RANTES
TNF-α
IL-2
MCP
Eotaxin
G-CSF
IFN-γ
VEGF
LIF
IL-4
p=0.05
IL-6
IL-12β
Plasma
B.
-log p-value
Log FC
MIG
p=0.05
LIX
IFNγ
IL-1α
IL-6
TNFα
p=0.2


Prediction Legend
more extreme in dataset
less
Increased measurement
Decreased measurement
more confidence
less
Predicted activation
Predicted inhibition
Glow Indicates activity when opposite of measurement
Predicted Relationships
Leads to activation
Leads to inhibition
Findings inconsistent with state of downstream molecule
Effect not predicted
Dashed lines = indirect relationship
Solid lines = direct relationship
Canonical Pathway
Complex/Group
Chemical/Toxicant
Cytokine
Disease
Enzyme
Function
Kinase
microRNA
Transcriptional Regulator
Transmembrane Receptor
Transporter
Macrophage Classical Activation Signaling Pathway
Innate immune response
Adaptive immune response
Gram-negative bacteria
NK cell
Th1 cells
CD8+ T cell
LPS
BPI
LBP
Priming by IFNγ
Activation / polarization by microbial trigger
Autocrine IFNβ signaling amplifies inflammatory response
Interferon beta
IFNG
IFNGR
IFNAR
Extracellular space
Cytoplasm
CD14
TLR4
LY96
MYD88
IRAK1/4
TICAM1
TRAF6
MAP3K7
TYK2
JAK1
JAK1/2
SOCS1
MIR155
PARP9
PARP14
STAT1
STAT2
IL13RA1
MIR21
STAT6
STAT3
M1 polarization of macrophage
M2 polarization of macrophage
CHUK
IKBKB
IKBKG
Ikb
NFKB-p50
RELA
Mir210
IRF9
ISRE
SOCS3
GAS
STAT1 binds widely to 'prime' inducible genes, before other regulators arrive.
Nucleus
Chemokines promote immune cell recruitment
CCL20
CCL15
CXCL9
CXCL10
CXCL11
CCL5
IRF3
IRF8
SPI1
Interferon alpha
Interferon beta
HIF1A
PKM
IL10
IRF5
IL23A
IL1B
Development of Th17 cells
TNF
IL6
IL12
Development of Th1 cells
IRF-E
MAF
EZH2
EED
SUZ12
MIR130A
MIR130B
MIR27A
MIR27B
M2 polarization of macrophage
MERTK
PPARG
IFNγ-induced inhibition of MAFand activation of the PRC2 complex leads to repression of genes involved in M2 macrophage polarization
CD80
CD40
CD86
EICE
TLR9
CIITA
M1 macrophage cell surface markers
MHC Class II molecules for antigen presentation
Mhc2 Alpha
MHC II-β
CYBB
NCF2
GBP2
GBP4
NOS2
Legend to DNA elements
GAS: Gamma Activated Sequence
EICE: Ets IRF Composite Element
IRF-E: Interferon Regulated Factor Element
ISRE: Interferon STAT Regulator Element
Respiratory burst
Arginine
Citrulline
NO
Progression of atherosclerotic plaque
Inflammation
Rheumatoid arthritis
Inflammatory bowel disease
Generation of superoxide
Nitric oxide overproduction
ROS
Antimicrobial response
Phagocytosis
Tissue damage
Itaconate
SDH
Succinate accumulation
ACOD1
Breaks in the TCA cycle result in succinate and citrate accumulation, and limited itaconate production.
Cis-aconitate
Succinate
Citrate
ACO2
Pyruvate dehydrogenase
NDUFS1
SDHB
UQCRC2
MT-CO1
PKM isoform M2
M1 polarization of macrophage
Pro-inflammatory Cytokine
Glycolysis I
Fatty acid synthesis
Pentose Phosphate Pathway (Oxidative Branch)
M1 macrophages rely on glycolysis, the pentose phosphate pathway, and glutaminolysis.
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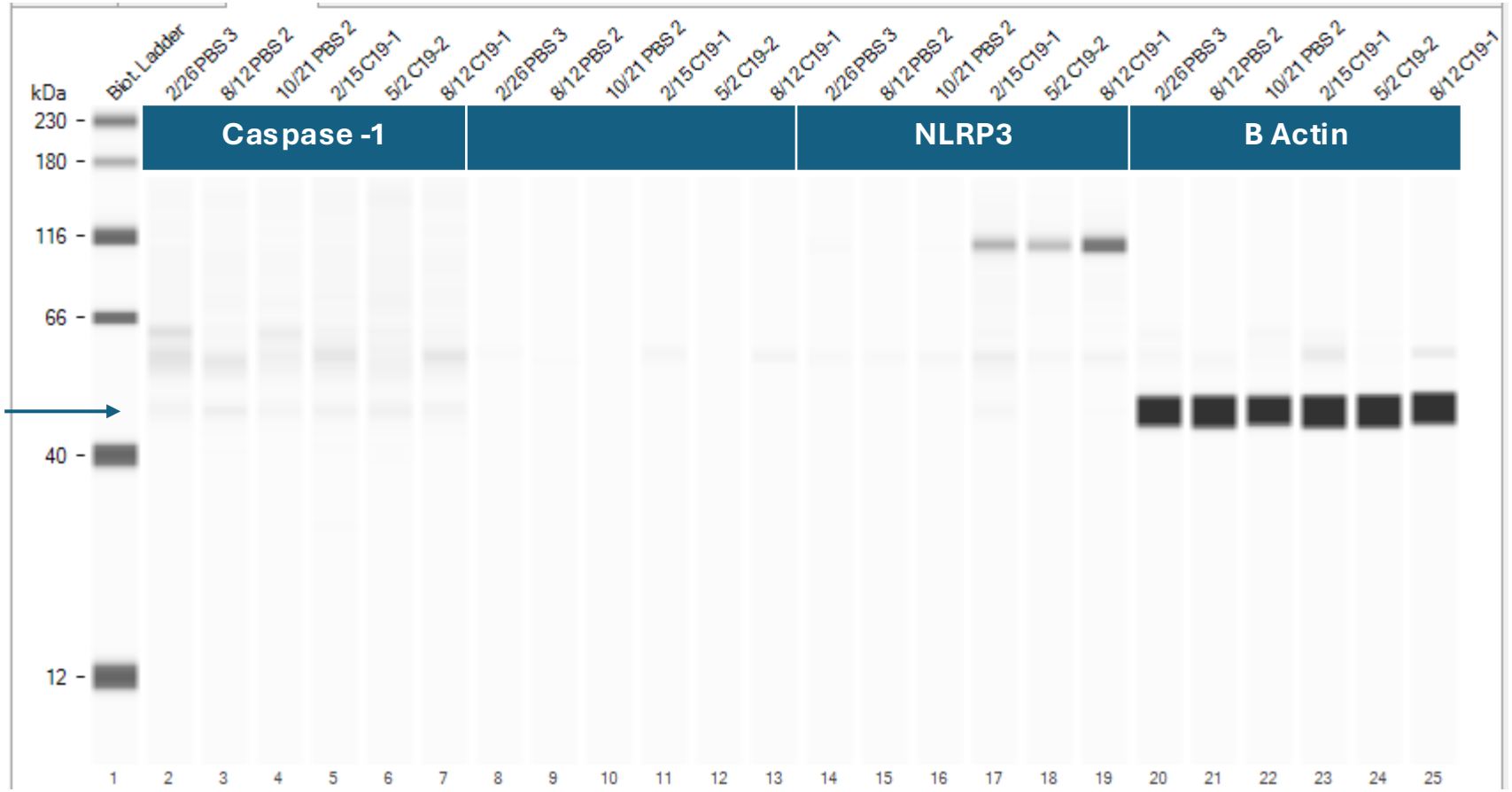
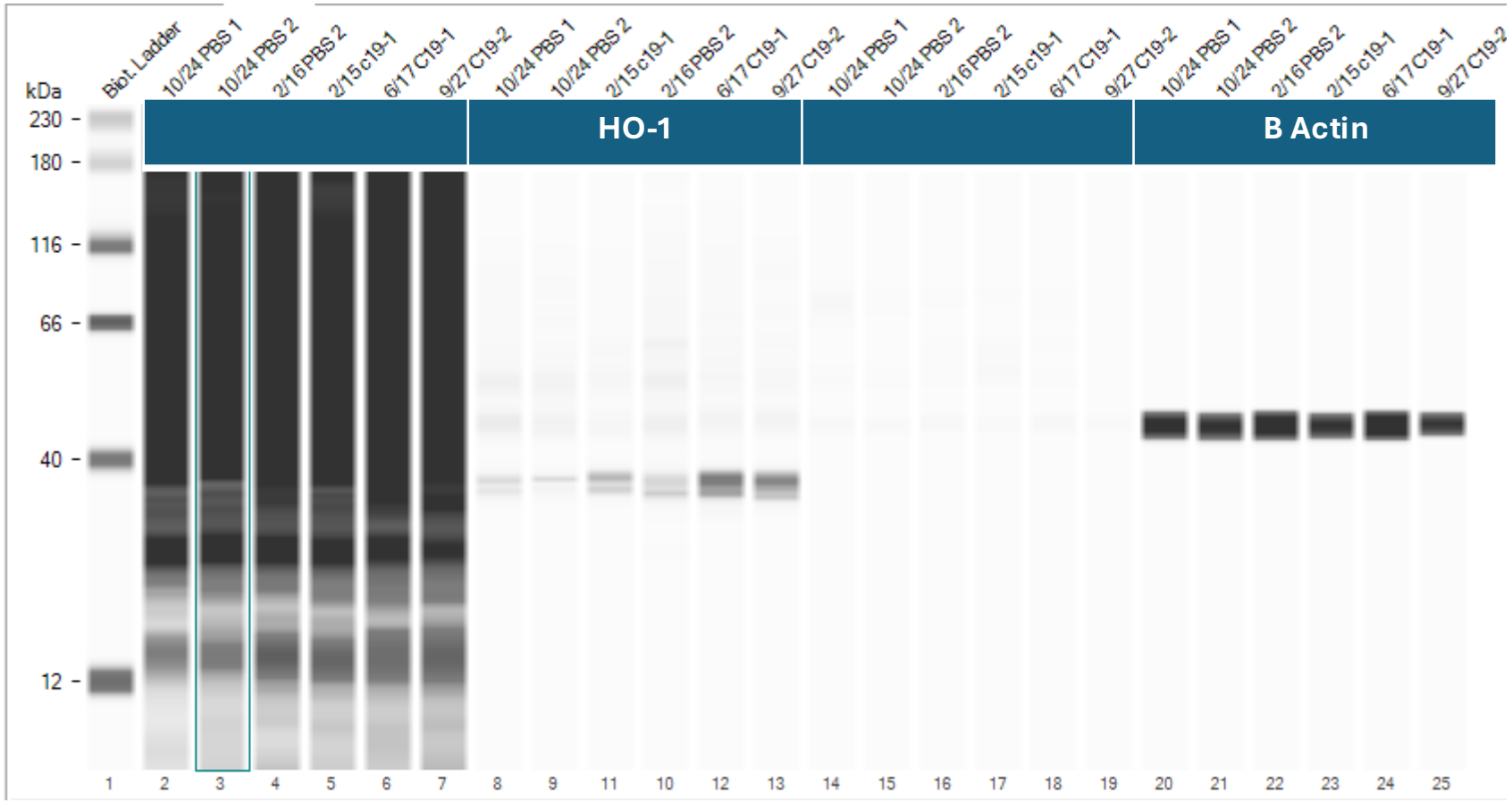
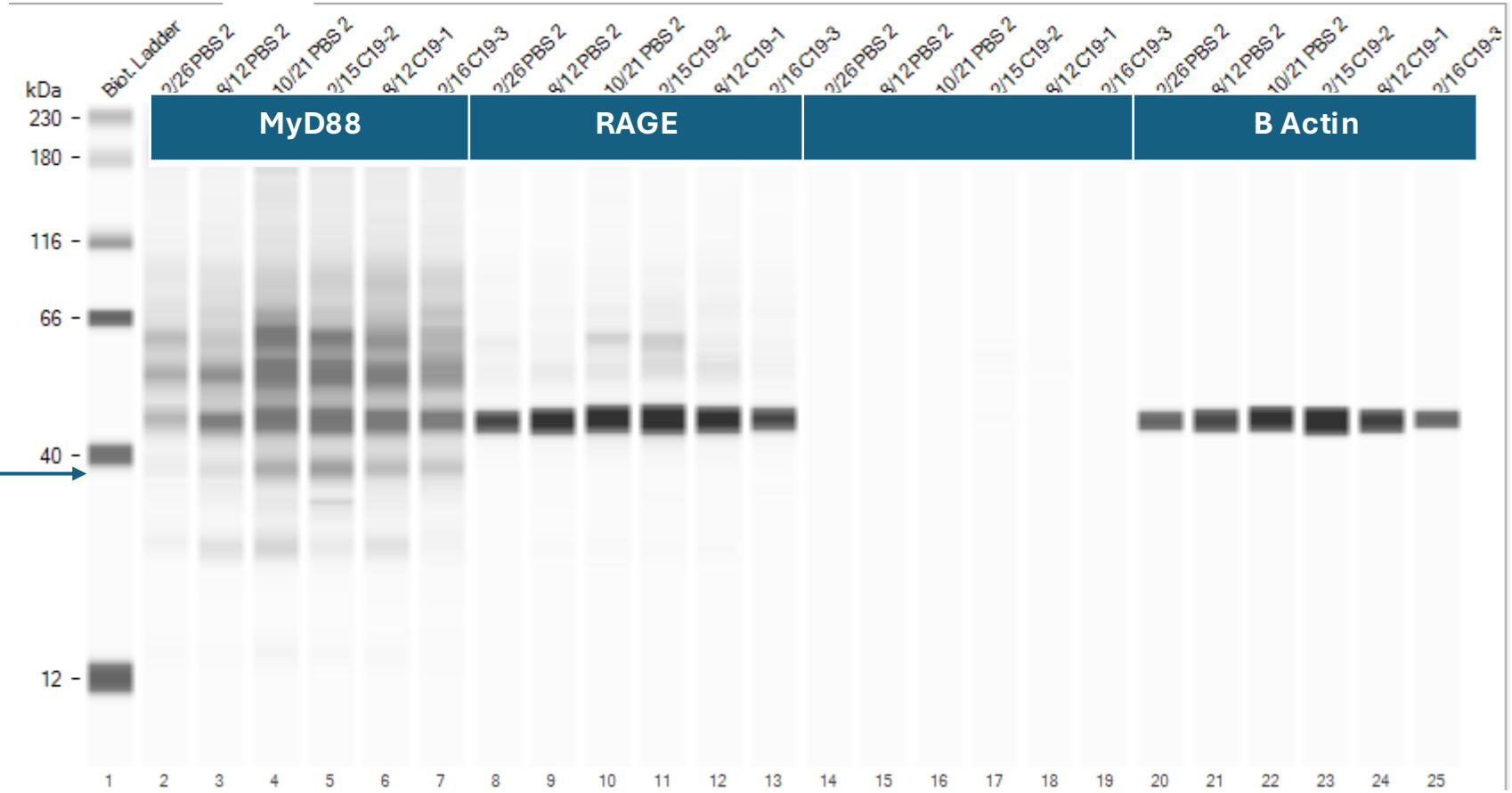
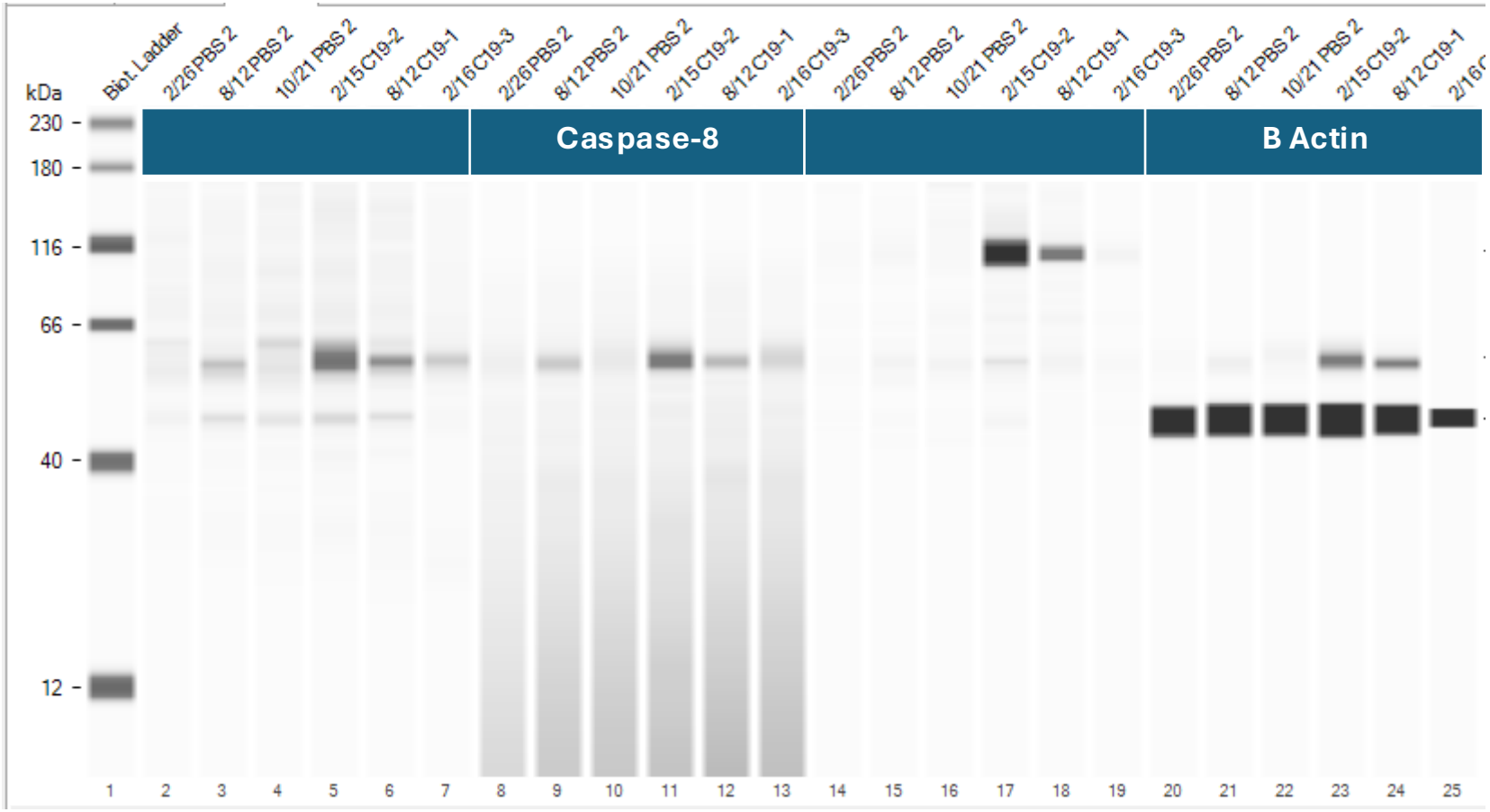

kDa
230
180
116
66
40
12
Biol Ladder
2/26 PBS 3
8/12 PBS 2
10/21 PBS 2
2/15 C19-1
5/2 C19-2
8/12 C19-1
Caspase -1
NLRP3
B Actin
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

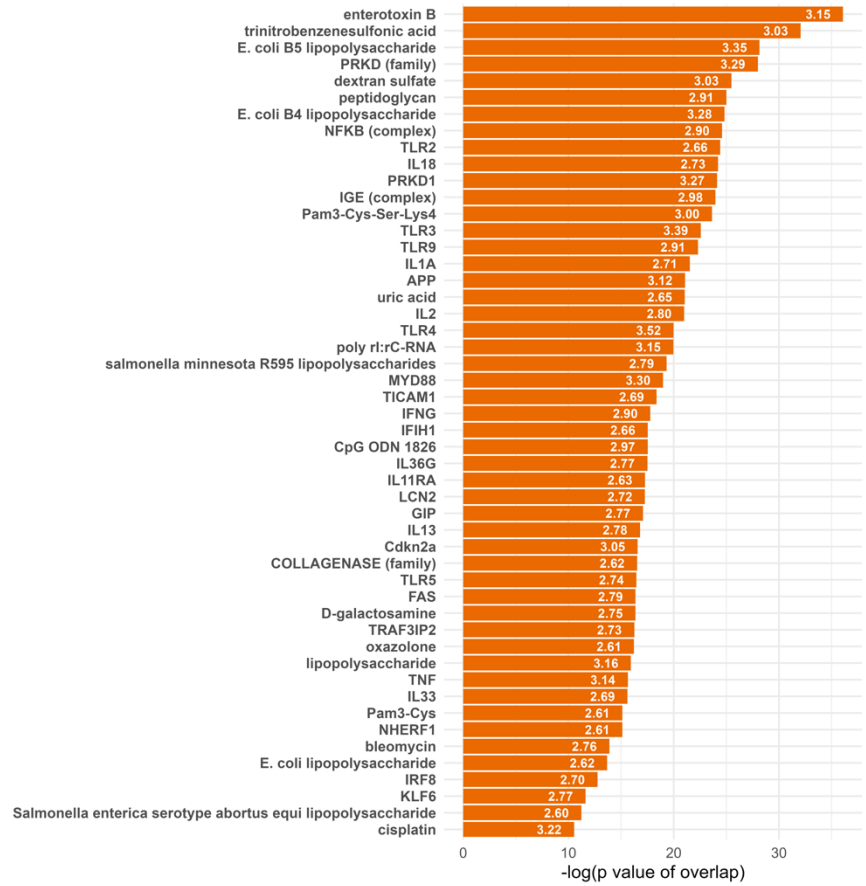

kDa
230
180
116
66
40
12
Biot. Ladder
10/24 PBS 1
10/24 PBS 2
2/16 PBS 2
2/15 c19-1
6/17 C19-1
9/27 C19-2
10/24 PBS 1
10/24 PBS 2
2/15 c19-1
2/16 PBS 2
6/17 C19-1
9/27 C19-2
10/24 PBS 1
10/24 PBS 2
2/16 PBS 2
2/15 c19-1
6/17 C19-1
9/27 C19-2
10/24 PBS 1
10/24 PBS 2
2/16 PBS 2
2/15 c19-1
6/17 C19-1
9/27 C19-2
HO-1
B Actin
1 2 3 4 5 6 7 8 9 11 10 12 13 14 15 16 17 18 19 20 21 22 23 24 25

MyD88 = 37

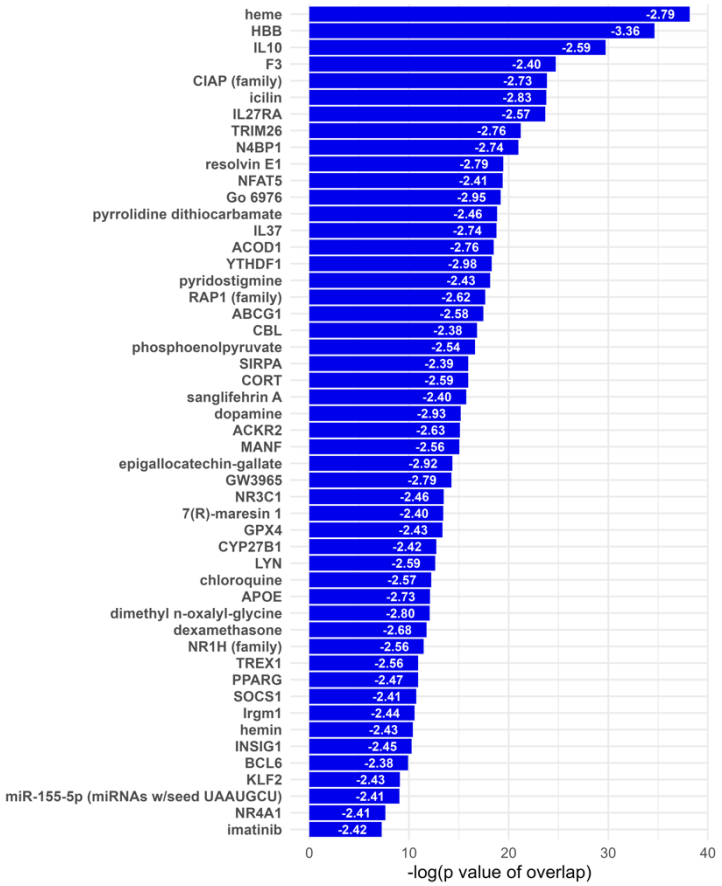

kDa
230
180
116
66
40
12
Biot Ladder
2/26PBS 2
8/12PBS 2
10/21 PBS 2
2/15C19-2
8/12C19-1
2/16C19-3
MyD88
RAGE
B Actin
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25


kDa
230
180
116
66
40
12
Biol. Ladder
2/26PBS 2
8/12PBS 2
10/21 PBS 2
2/15C19-2
8/12C19-1
2/16C19-3
Caspase-8
B Actin
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

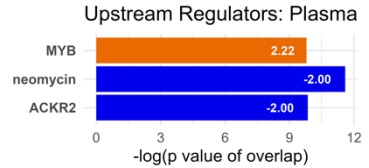
A.



B.



C.



Legend

Predicted State

Activated

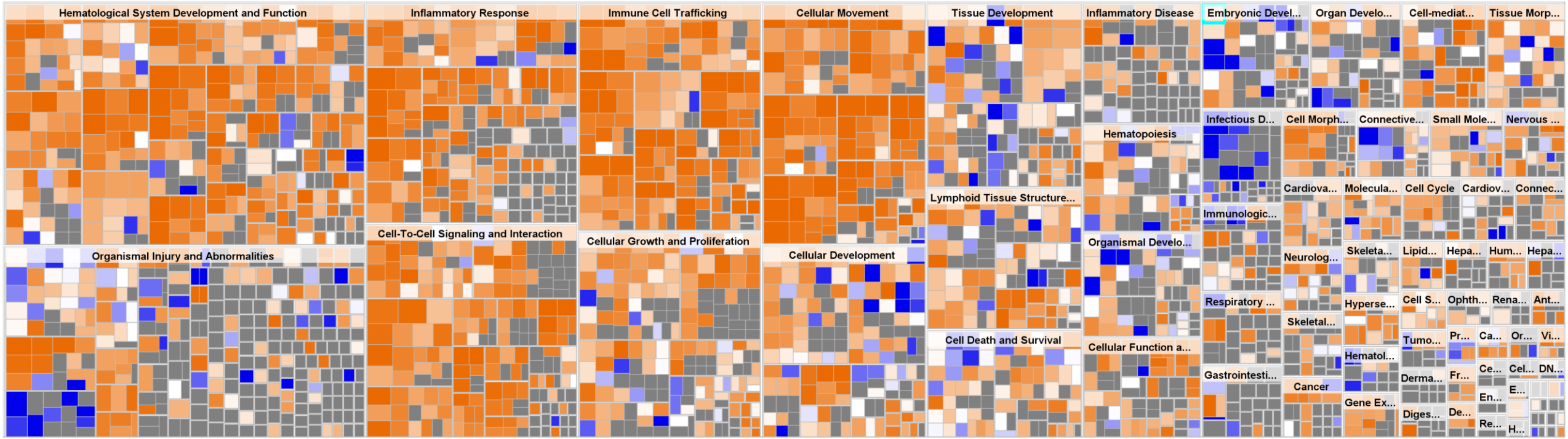
Inhibited

Values inside bars represent significant z-score values >2.0

BAL - Diseases & Functions

Sized by : -log(p-value) Colored by : z-score

All



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