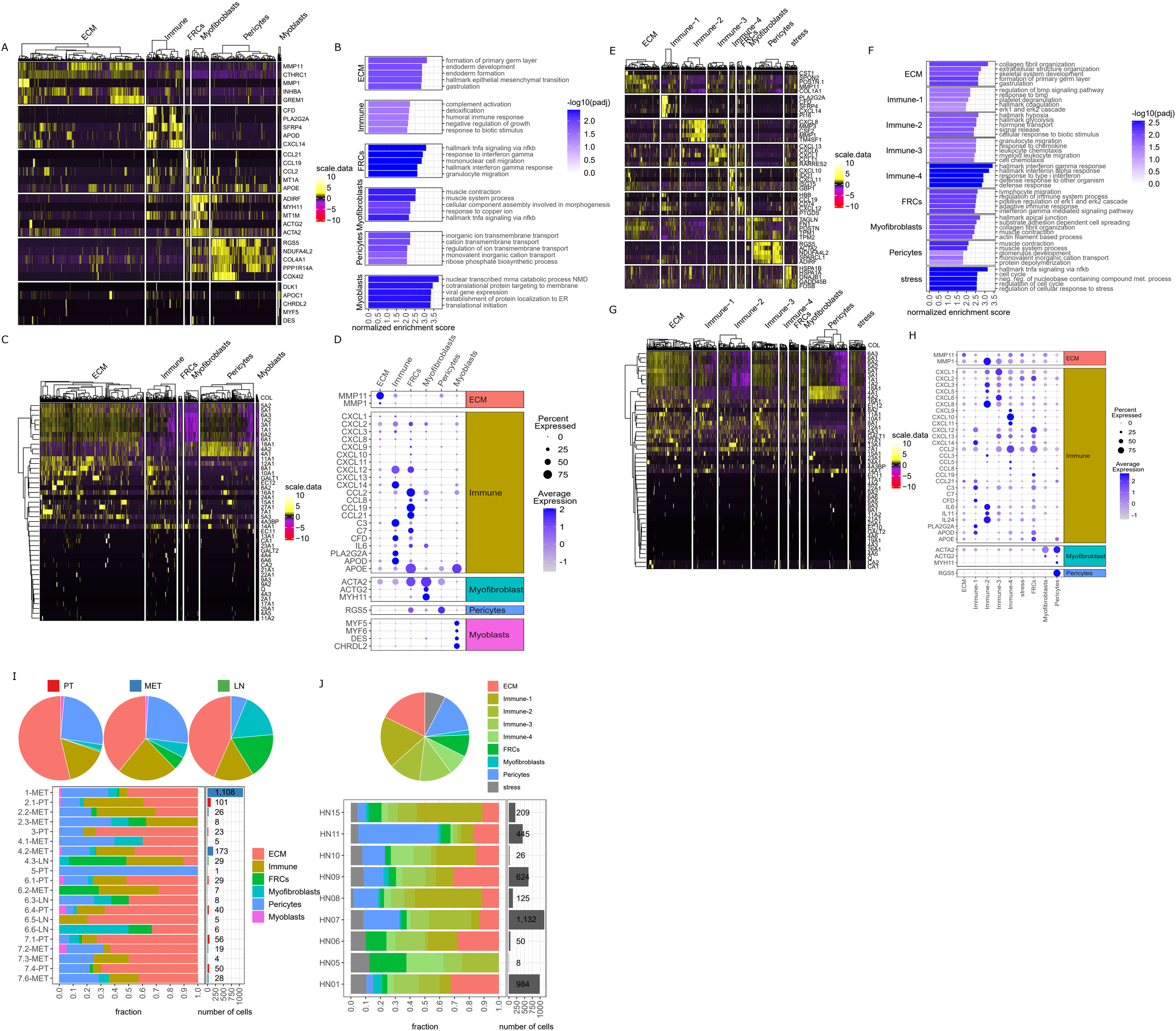
A
ECM
Immune
FRCs
Myofibroblasts
Pericytes
Myoblasts
MMP11
CTHRC1
MMP1
INHBA
GREM1
CFD
PLA2G2A
SFRP4
APOD
CXCL14
CCL21
CCL19
CCL2
MT1A
APOE
ADIRF
MYH11
MT1M
ACTG2
ACTA2
RGS5
NDUFA4L2
COL4A1
PPP1R14A
COX4I2
DLK1
APOC1
CHRDL2
MYF5
DES
scale.data
10
5
0
−5
−10
B
ECM
formation of primary germ layer
endoderm development
endoderm formation
hallmark epithelial mesenchymal transition
gastrulation
Immune
complement activation
detoxification
humoral immune response
negative regulation of growth
response to biotic stimulus
FRCs
hallmark tnfa signaling via nfkb
response to interferon gamma
mononuclear cell migration
hallmark interferon gamma response
granulocyte migration
Myofibroblasts
muscle contraction
muscle system process
cellular component assembly involved in morphogenesis
response to copper ion
hallmark tnfa signaling via nfkb
Pericytes
inorganic ion transmembrane transport
cation transmembrane transport
regulation of ion transmembrane transport
monovalent inorganic cation transport
ribose phosphate biosynthetic process
Myoblasts
nuclear transcribed mrna catabolic process NMD
cotranslational protein targeting to membrane
viral gene expression
establishment of protein localization to ER
translational initiation
-log10(padj)
2.0
1.5
1.0
0.5
0.0
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5
normalized enrichment score
C
ECM
Immune
FRCs
Myofibroblasts
Pericytes
Myoblasts
COL
scale.data
10
5
0
−5
−10
D
ECM
Immune
FRCs
Myofibroblasts
Pericytes
Myoblasts
MMP11
MMP1
CXCL1
CXCL2
CXCL3
CXCL8
CXCL9
CXCL10
CXCL11
CXCL12
CXCL13
CXCL14
CCL2
CCL8
CCL19
CCL21
C3
C7
CFD
IL6
PLA2G2A
APOD
APOE
ACTA2
ACTG2
MYH11
RGS5
MYF5
MYF6
DES
CHRDL2
Percent Expressed
0
25
50
75
Average Expression
2
1
0
-1
Immune
Myofibroblast
Pericytes
Myoblasts
E
ECM
Immune−1
Immune−2
Immune−3
Immune−4
FRCs
Myofibroblasts
Pericytes
stress
CST1
SPON2
POSTN.1
MMP11
COL1A1
PLA2G2A
CFD
SFRP4
CXCL14
PI16
CXCL8
MMP3
CSF2
MMP1
TM4SF1
CXCL13
CXCL6
CXCL1
CCL11
RARRES2
CXCL10
IDO1
CXCL11
ISG15
GBP1
HBB
CCL19
CCL2
CXCL12
PTGDS
TAGLN
FN1
POSTN
TPM1
TPM2
RGS5
ACTA2
NDUFA4L2
SPARCL1
ADIRF
HSPA1B
HSPA1A
DNAJB1
GADD45B
FOSB
scale.data
10
5
0
−5
−10
F
ECM
collagen fibril organization
extracellular structure organization
skeletal system development
formation of primary germ layer
gastrulation
Immune-1
regulation of bmp signaling pathway
response to bmp
platelet degranulation
hallmark coagulation
erk1 and erk2 cascade
Immune-2
hallmark hypoxia
hallmark glycolysis
hormone transport
signal release
cellular response to biotic stimulus
Immune-3
granulocyte migration
response to chemokine
leukocyte chemotaxis
myeloid leukocyte migration
cell chemotaxis
Immune-4
hallmark interferon gamma response
hallmark interferon alpha response
response to type i interferon
defense response to other organism
defense response
FRCs
lymphocyte migration
regulation of immune system process
positive regulation of erk1 and erk2 cascade
adaptive immune response
interferon gamma mediated signaling pathway
Myofibroblasts
hallmark apical junction
substrate adhesion dependent cell spreading
collagen fibril organization
muscle contraction
actin filament based process
Pericytes
muscle contraction
muscle system process
glomerulus development
monovalent inorganic cation transport
protein depolymerization
stress
hallmark tnfa signaling via nfkb
cell cycle
neg. reg. of nucleobase containing compound met. process
regulation of cell cycle
regulation of cellular response to stress
-log10(padj)
2.5
2.0
1.5
1.0
0.5
0.0
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5
normalized enrichment score
G
ECM
Immune−1
Immune−2
Immune−3
Immune−4
FRCs
Myofibroblasts
Pericytes
stress
COL
scale.data
10
5
0
−5
−10
H
ECM
MMP11
MMP1
Immune
CXCL1
CXCL2
CXCL3
CXCL5
CXCL6
CXCL8
CXCL9
CXCL10
CXCL11
CXCL12
CXCL13
CXCL14
CCL2
CCL3
CCL5
CCL8
CCL19
CCL21
C3
C7
CFD
IL6
IL11
IL24
PLA2G2A
APOD
APOE
Myofibroblast
ACTA2
ACTG2
MYH11
Pericytes
RGS5
ECM
Immune-1
Immune-2
Immune-3
Immune-4
stress
FRCs
Myofibroblasts
Pericytes
Percent Expressed
0
25
50
75
Average Expression
2
1
0
-1
I
PT
MET
LN
1-MET
2.1-PT
2.2-MET
2.3-MET
3-PT
4.1-MET
4.2-MET
4.3-LN
5-PT
6.1-PT
6.2-MET
6.3-LN
6.4-PT
6.5-LN
6.6-LN
7.1-PT
7.2-MET
7.3-MET
7.4-PT
7.6-MET
1,108
101
26
8
23
5
173
29
1
29
7
8
40
5
6
56
19
4
50
28
ECM
Immune
FRCs
Myofibroblasts
Pericytes
Myoblasts
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
fraction
0 250 500 750 1000
number of cells
J
ECM
Immune-1
Immune-2
Immune-3
Immune-4
FRCs
Myofibroblasts
Pericytes
stress
HN15
HN11
HN10
HN09
HN08
HN07
HN06
HN05
HN01
209
445
26
624
125
1,132
50
8
984
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
fraction
0 250 500 750 1000
number of cells