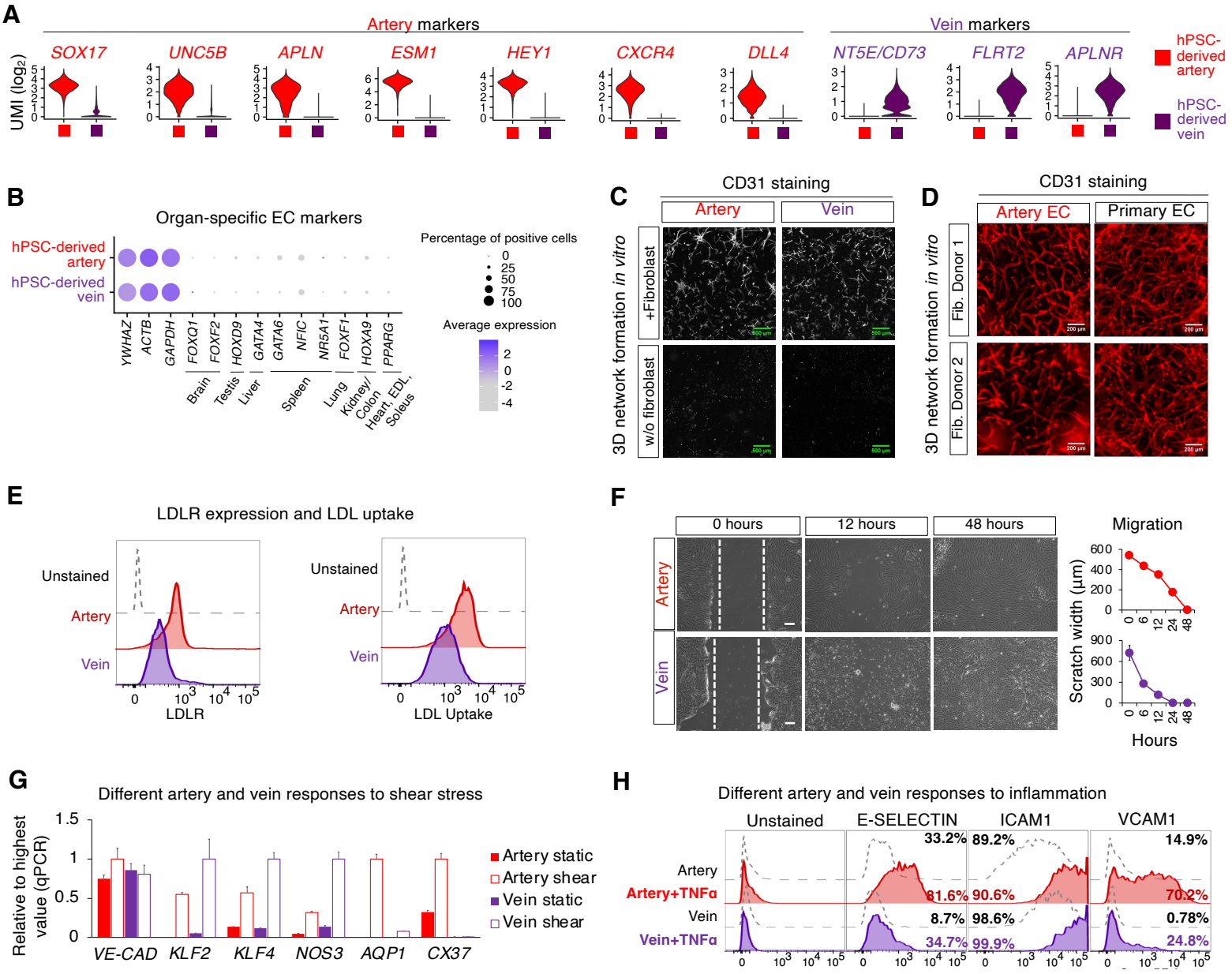
# Figure S4


A
Artery markers
Vein markers
SOX17
UNC5B
APLN
ESM1
HEY1
CXCR4
DLL4
NT5E/CD73
FLRT2
APLNR
UMI (log2)
hPSC-derived artery
hPSC-derived vein
B
Organ-specific EC markers
hPSC-derived artery
hPSC-derived vein
YWHAZ
ACTB
GAPDH
FOXQ1
FOXF2
HOXD9
GATA4
GATA6
NFIC
NR5A1
FOXF1
HOXA9
PPARG
Brain
Testis
Liver
Spleen
Lung
Kidney/ Colon
Heart, EDL, Soleus
Percentage of positive cells
0
25
50
75
100
Average expression
2
0
-2
-4
C
CD31 staining
Artery
Vein
3D network formation in vitro
+Fibroblast
w/o fibroblast
D
CD31 staining
Artery EC
Primary EC
3D network formation in vitro
Fib. Donor 1
Fib. Donor 2
E
LDLR expression and LDL uptake
Unstained
Artery
Vein
LDLR
LDL Uptake
F
0 hours
12 hours
48 hours
Artery
Vein
Migration
Scratch width (µm)
Hours
G
Different artery and vein responses to shear stress
Relative to highest value (qPCR)
VE-CAD
KLF2
KLF4
NOS3
AQP1
CX37
Artery static
Artery shear
Vein static
Vein shear
H
Different artery and vein responses to inflammation
Unstained
E-SELECTIN
ICAM1
VCAM1
Artery
Artery+TNFα
Vein
Vein+TNFα
33.2%
89.2%
14.9%
81.6%
90.6%
70.2%
8.7%
98.6%
0.78%
34.7%
99.9%
24.8%