Figure S1

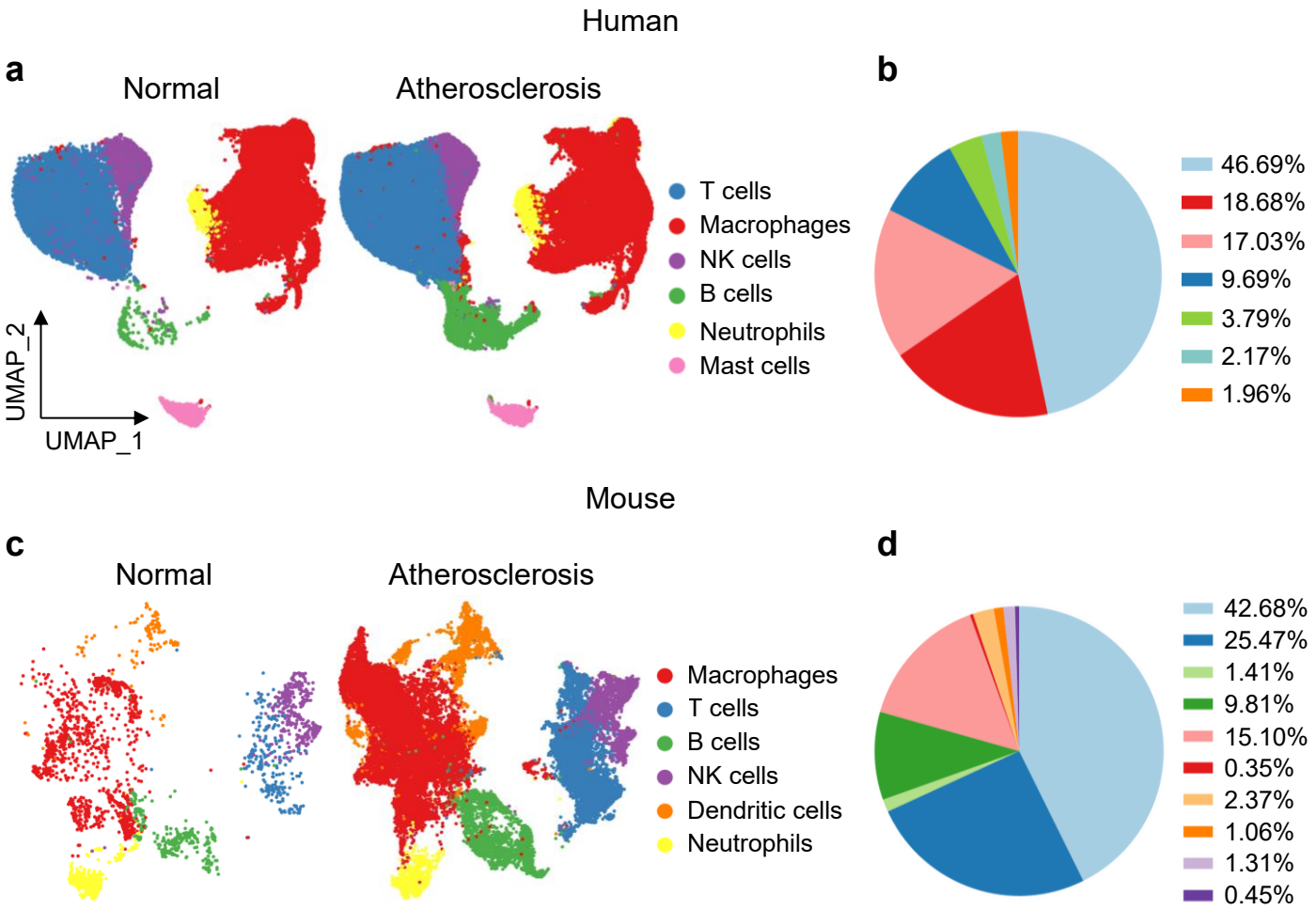

Human
a
Normal
Atherosclerosis
T cells
Macrophages
NK cells
B cells
Neutrophils
Mast cells
UMAP_2
UMAP_1
b
46.69%
18.68%
17.03%
9.69%
3.79%
2.17%
1.96%
Mouse
c
Normal
Atherosclerosis
Macrophages
T cells
B cells
NK cells
Dendritic cells
Neutrophils
d
42.68%
25.47%
1.41%
9.81%
15.10%
0.35%
2.37%
1.06%
1.31%
0.45%

Figure S2

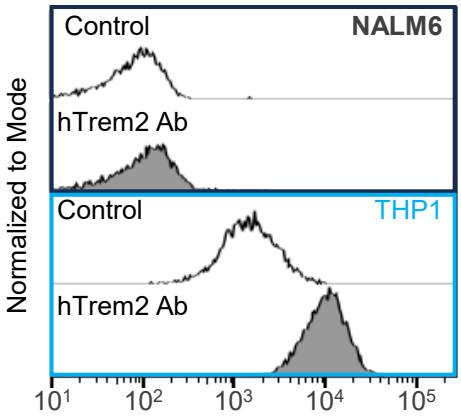
a

Name	CAR construct
hCAR1	scFv(RS9.F6) – V5 – hCD28 hinge – hCD28tm – hCD28 – hCD3ζ
hCAR2	scFv(237920) – V5 – hCD28 hinge – hCD28tm – hCD28 – hCD3ζ
hCAR3	scFv(PI37012) – V5 – hCD28 hinge – hCD28tm – hCD28 – hCD3ζ

b

Name	CAR construct
mCAR1	scFv(RS9.F6) – V5 – mCD28 hinge – mCD28tm – mCD28 – mCD3ζ
mCAR2	scFv(237920) – V5 – mCD28 hinge – mCD28tm – mCD28 – mCD3ζ
mCAR3	scFv(PI37012) – V5 – mCD28 hinge – mCD28tm – mCD28 – mCD3ζ

c



d

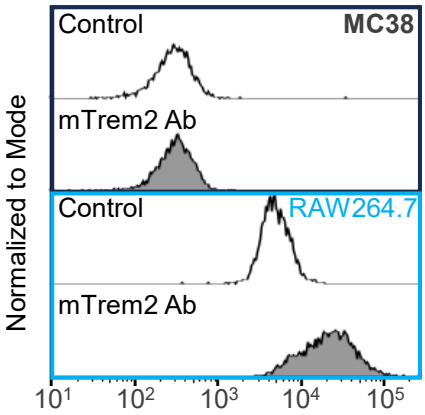


Figure S3

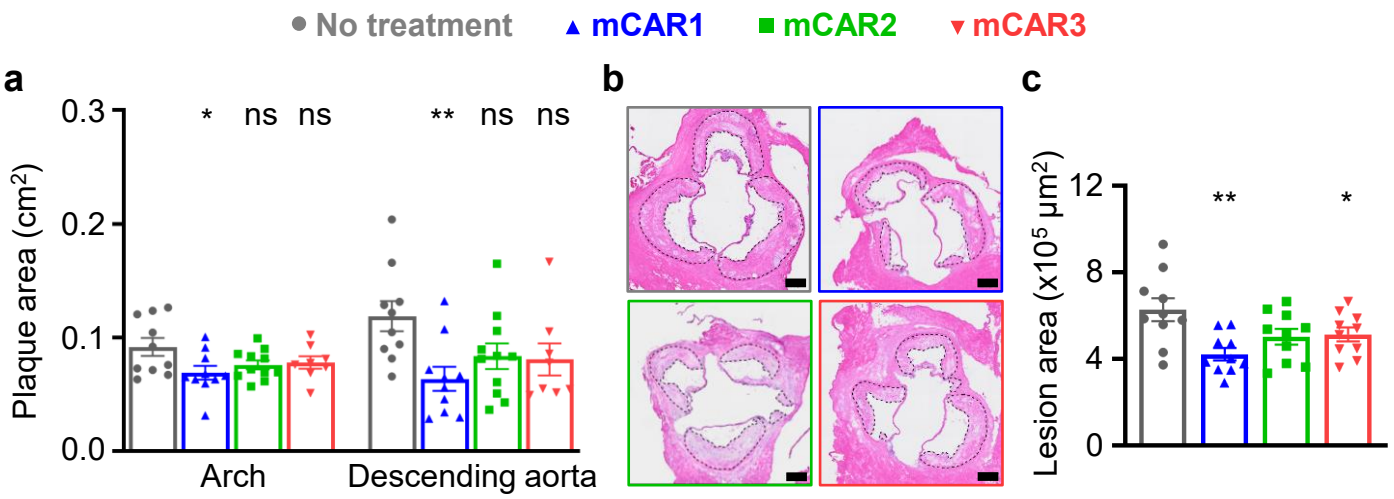

No treatment
mCAR1
mCAR2
mCAR3
a
Plaque area (cm²)
0.3
0.2
0.1
0.0
*
ns
ns
**
ns
ns
Arch
Descending aorta
b
c
Lesion area (x10⁵ µm²)
12
8
4
0
**
*

Figure S4

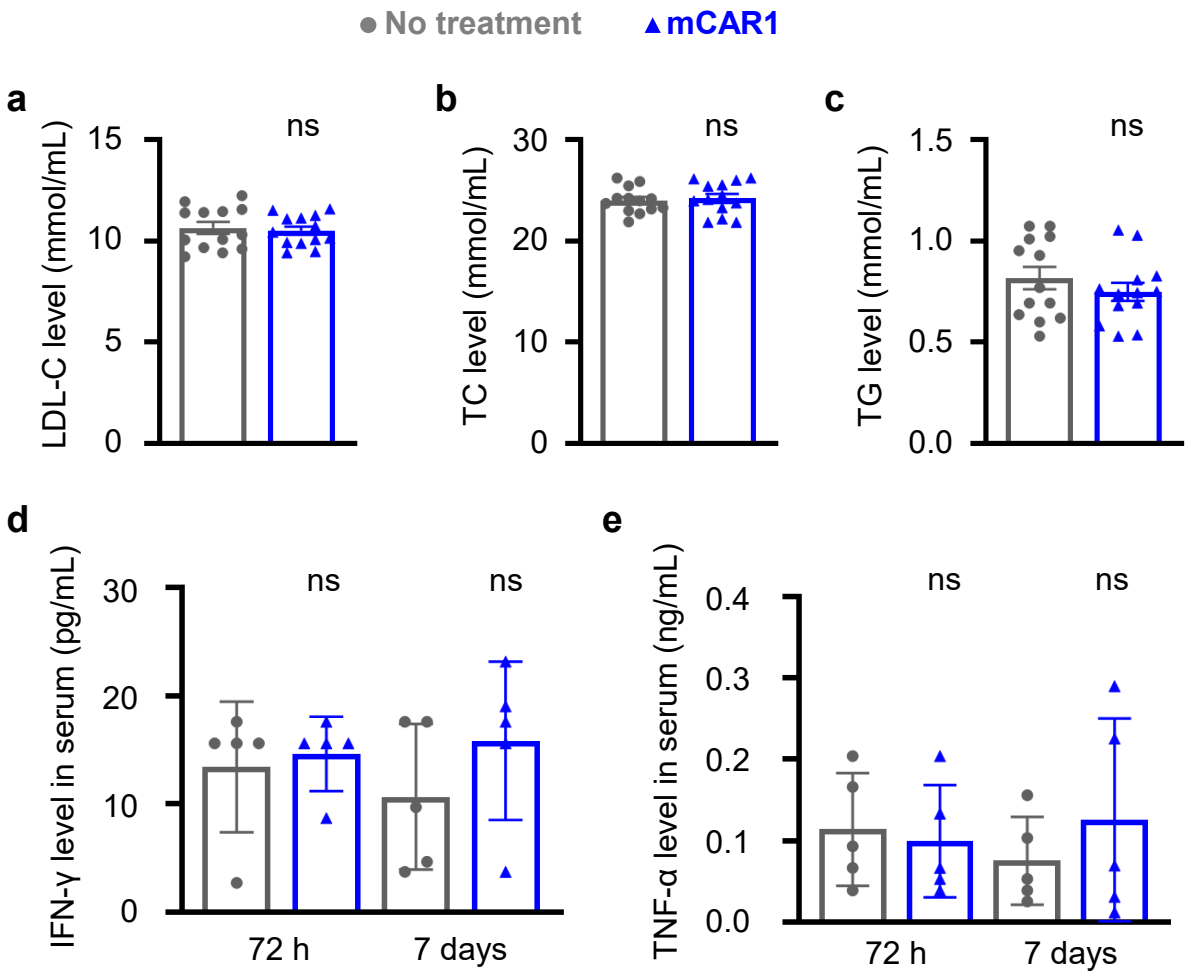

No treatment
mCAR1
a
LDL-C level (mmol/mL)
15
10
5
0
ns
b
TC level (mmol/mL)
30
20
10
0
ns
c
TG level (mmol/mL)
1.5
1.0
0.5
0.0
ns
d
IFN-γ level in serum (pg/mL)
30
20
10
0
ns
ns
72 h
7 days
e
TNF-α level in serum (ng/mL)
0.4
0.3
0.2
0.1
0.0
ns
ns
72 h
7 days

Figure S5

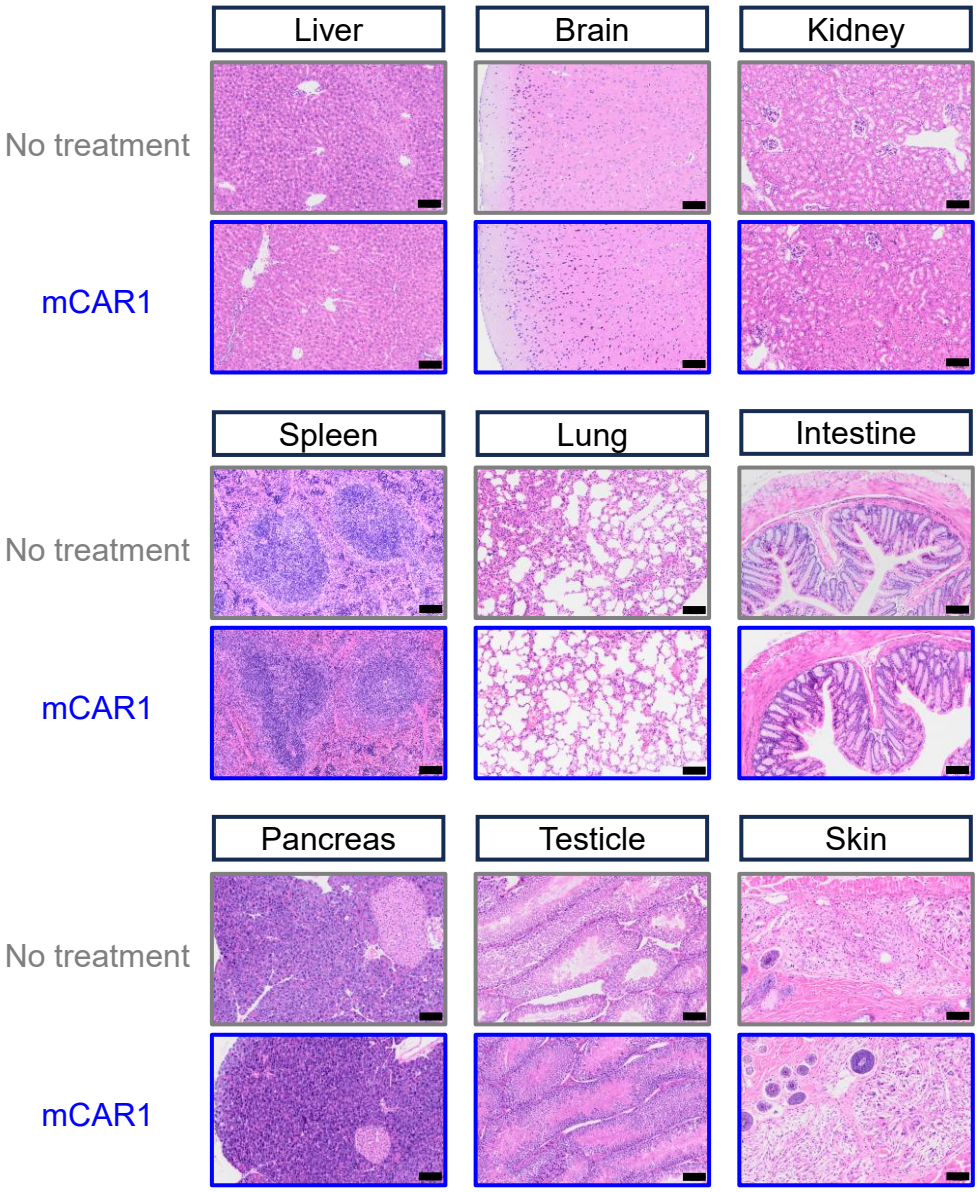
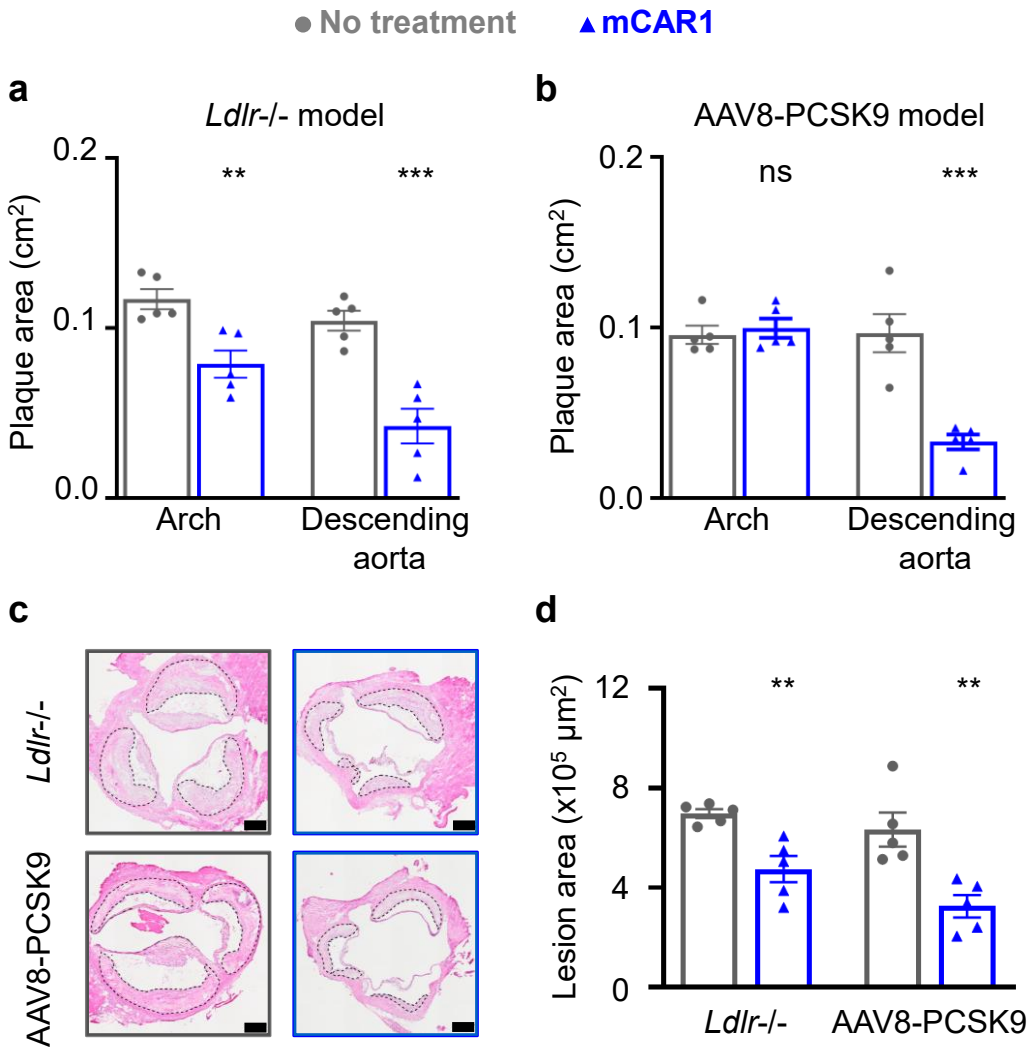

Liver
Brain
Kidney
No treatment
mCAR1
Spleen
Lung
Intestine
No treatment
mCAR1
Pancreas
Testicle
Skin
No treatment
mCAR1

Figure S6


No treatment
mCAR1
a
Ldlr-/- model
Plaque area (cm2)
0.2
0.1
0.0
**
***
Arch
Descending aorta
b
AAV8-PCSK9 model
Plaque area (cm2)
0.2
0.1
0.0
ns
***
Arch
Descending aorta
c
Ldlr-/-
AAV8-PCSK9
d
Lesion area (x10^5 μm2)
12
8
4
0
**
**
Ldlr-/-
AAV8-PCSK9