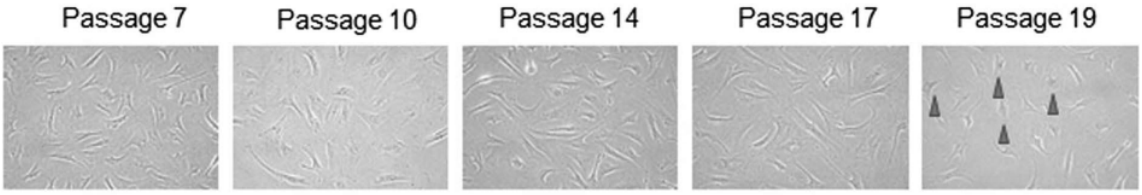
FIG. 1A



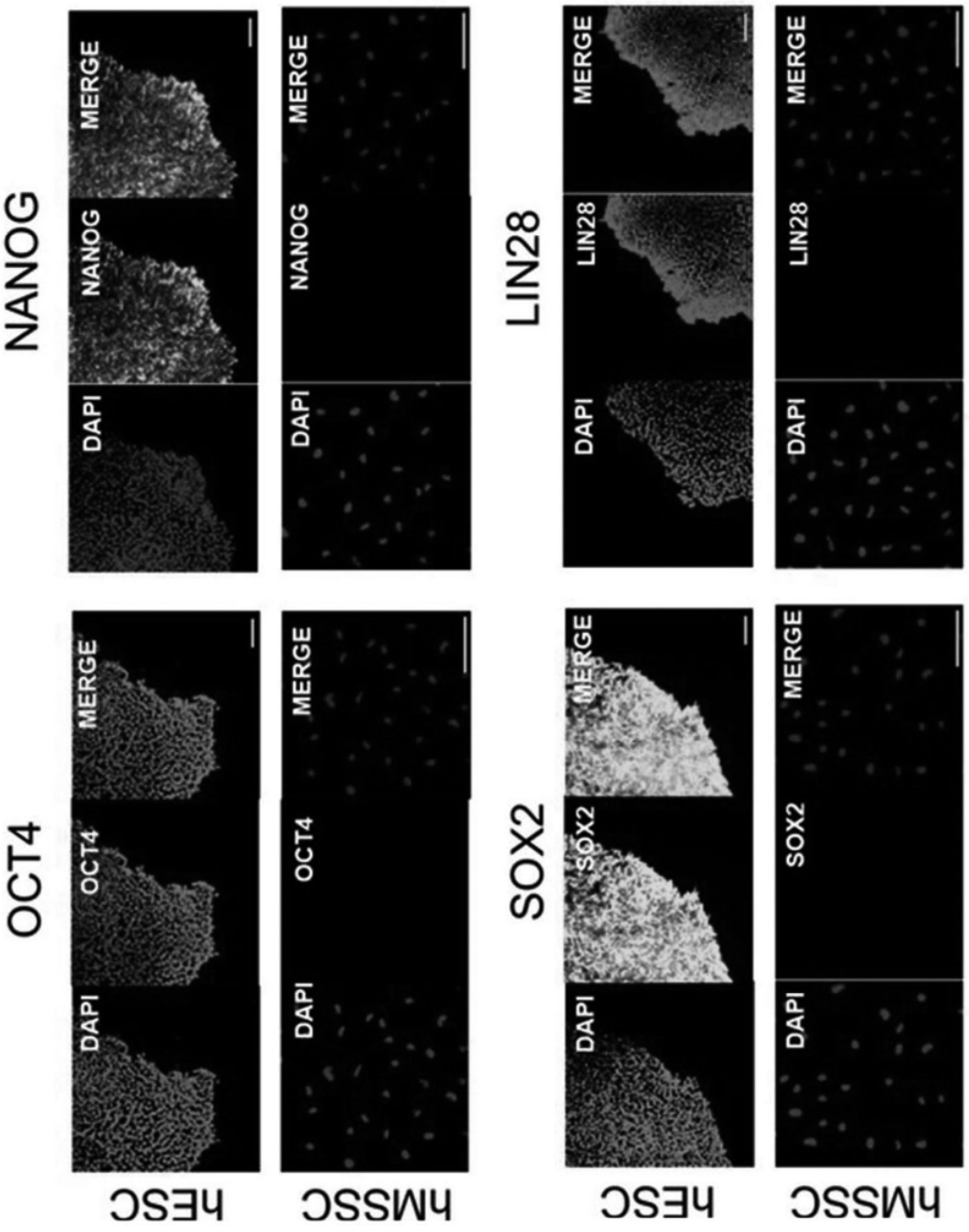

OCT4
NANOG
LIN28
SOX2
DAPI
OCT4
NANOG
LIN28
SOX2
MERGE
hESC
hMSSC

FIG. 1B

FIG. 1C

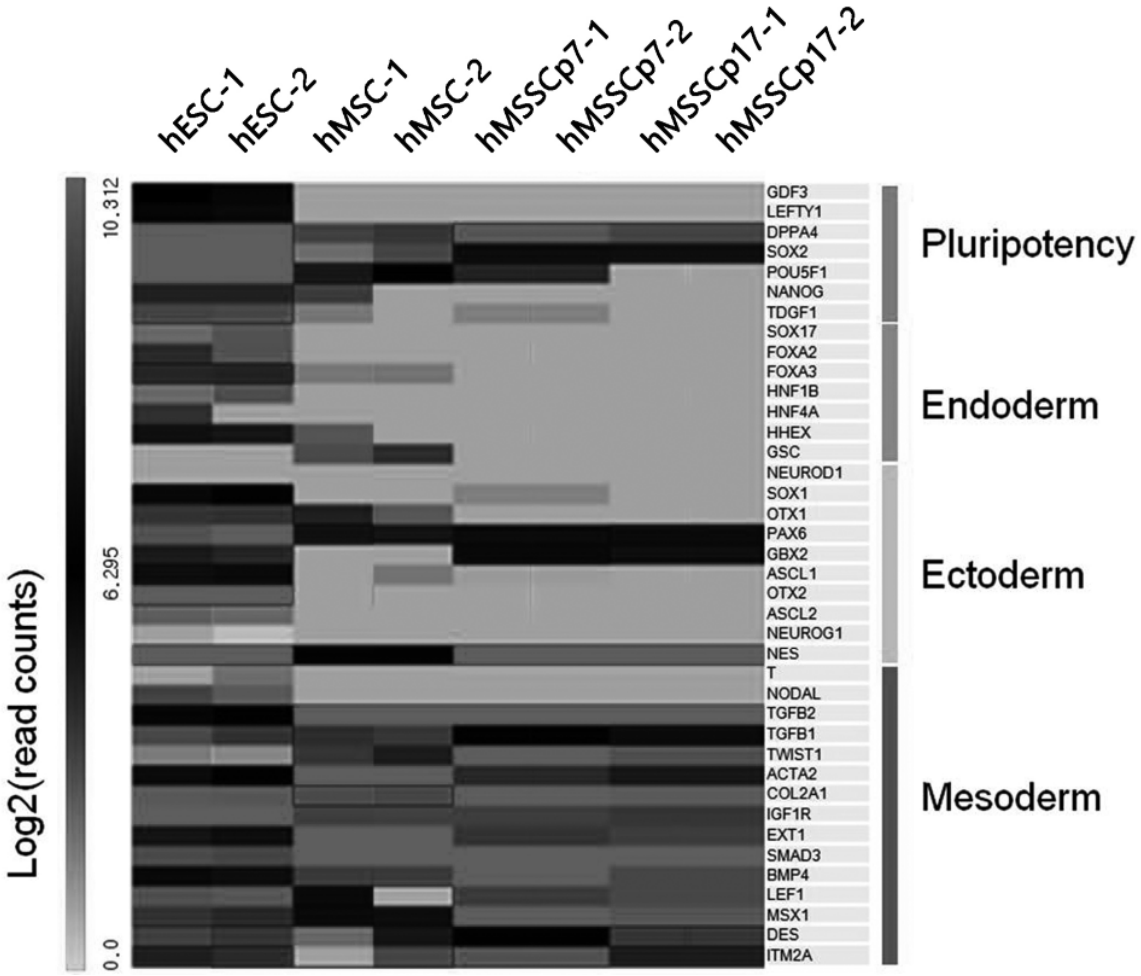
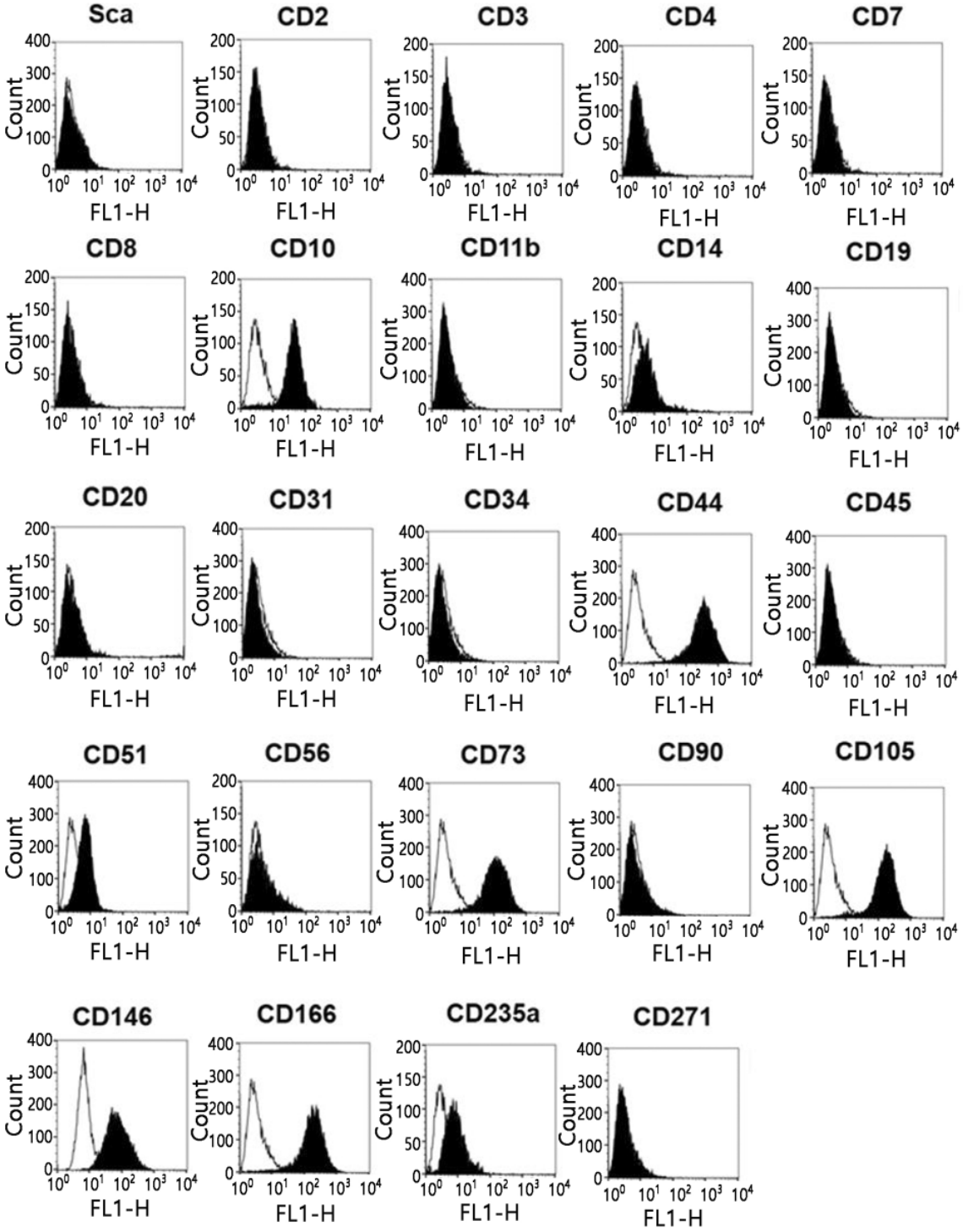

hESC-1
hESC-2
hMSC-1
hMSC-2
hMSSCp7-1
hMSSCp7-2
hMSSCp17-1
hMSSCp17-2
Log2(read counts)
10.312
6.295
0.0
GDF3
LEFTY1
DPPA4
SOX2
POU5F1
NANOG
TDGF1
SOX17
FOXA2
FOXA3
HNF1B
HNF4A
HHEX
GSC
NEUROD1
SOX1
OTX1
PAX6
GBX2
ASCL1
OTX2
ASCL2
NEUROG1
NES
T
NODAL
TGFB2
TGFB1
TWIST1
ACTA2
COL2A1
IGF1R
EXT1
SMAD3
BMP4
LEF1
MSX1
DES
ITM2A
Pluripotency
Endoderm
Ectoderm
Mesoderm

FIG. 1D


Sca
CD2
CD3
CD4
CD7
CD8
CD10
CD11b
CD14
CD19
CD20
CD31
CD34
CD44
CD45
CD51
CD56
CD73
CD90
CD105
CD146
CD166
CD235a
CD271
Count
FL1-H

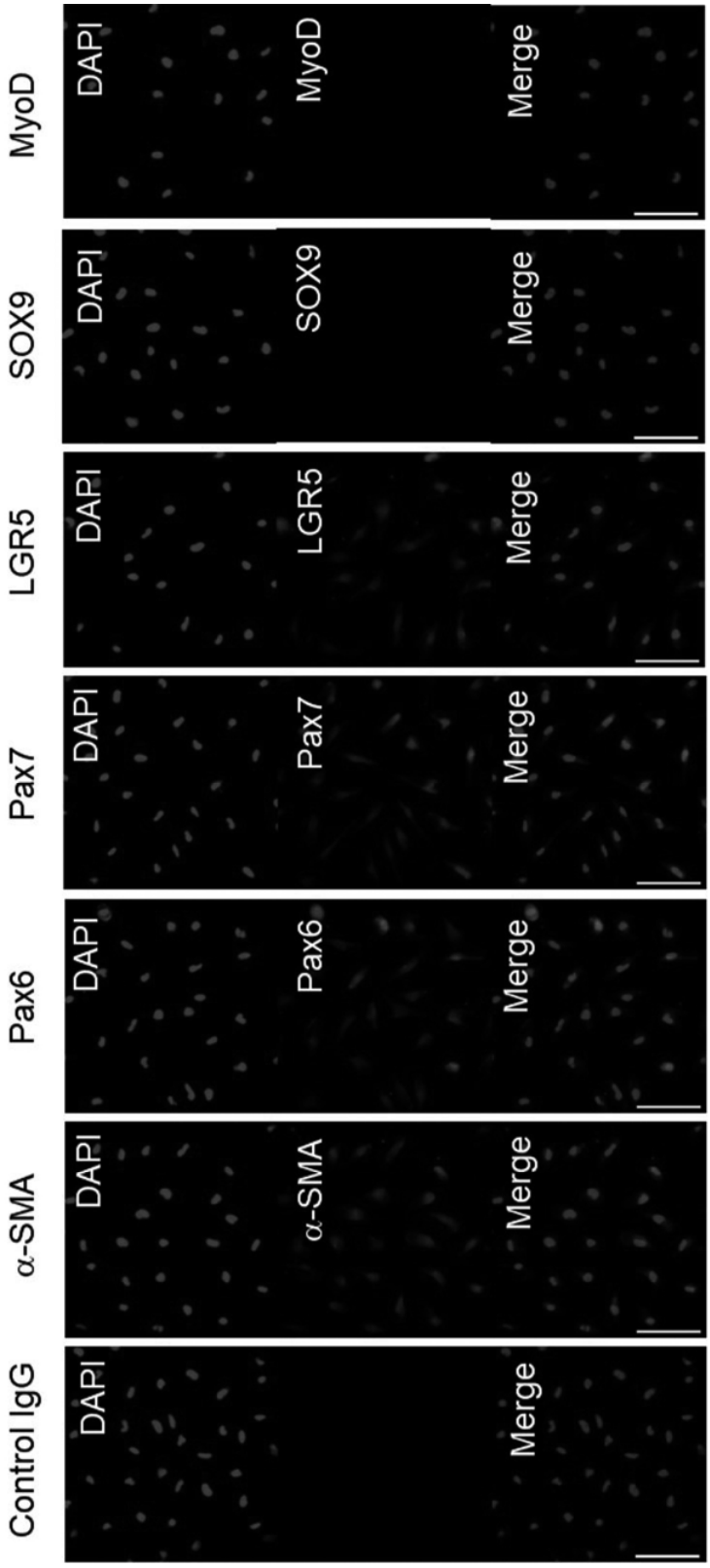

Control IgG
α-SMA
Pax6
Pax7
LGR5
SOX9
MyoD
DAPI
Merge
α-SMA
Pax6
Pax7
LGR5
SOX9
MyoD

FIG. 1E

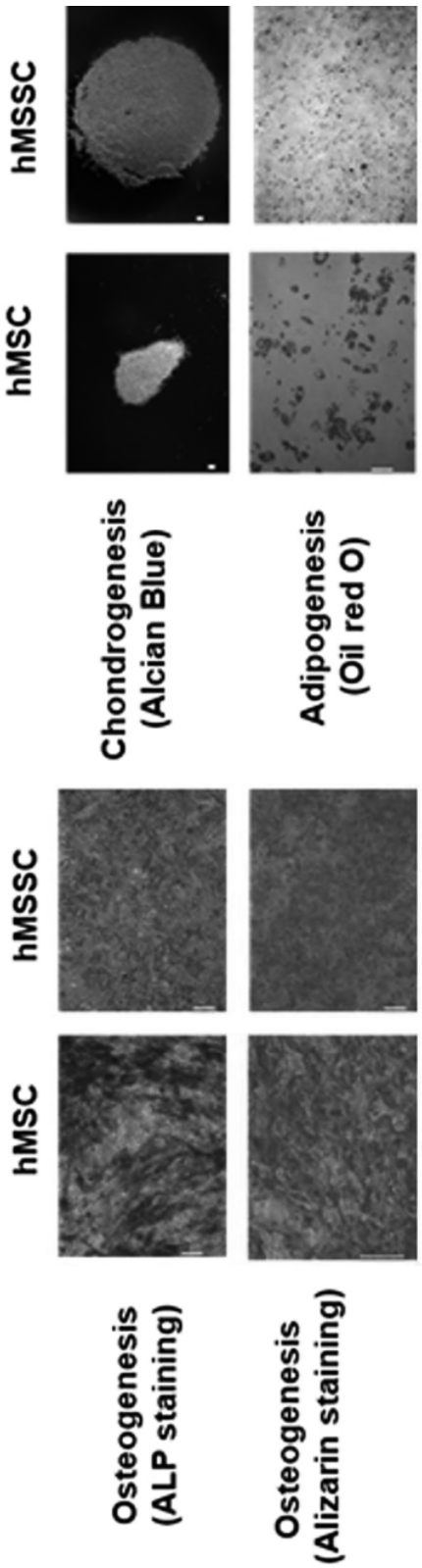

hMSC
hMSSC
Osteogenesis (ALP staining)
Osteogenesis (Alizarin staining)
Chondrogenesis (Alcian Blue)
Adipogenesis (Oil red O)
hMSC
hMSSC

FIG. 2A

FIG. 2B

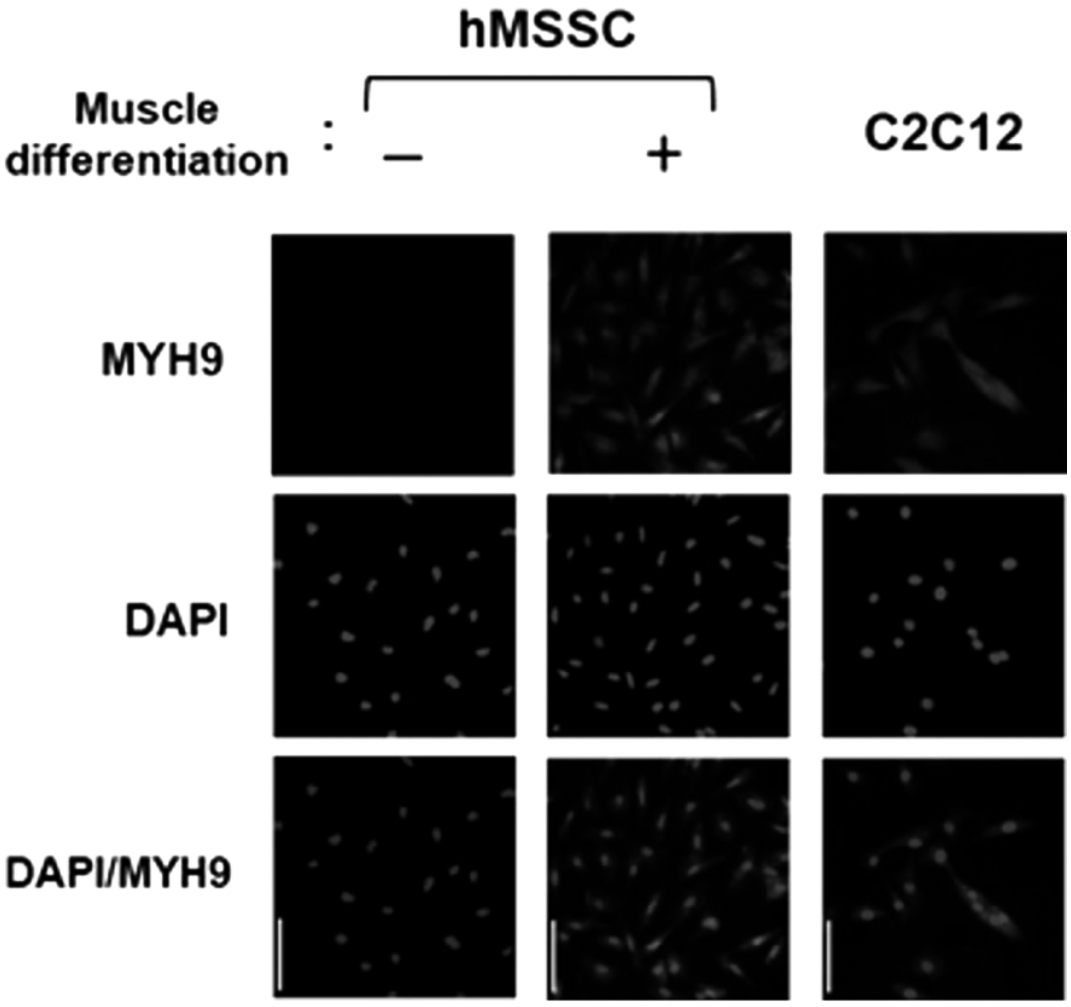


FIG. 2C

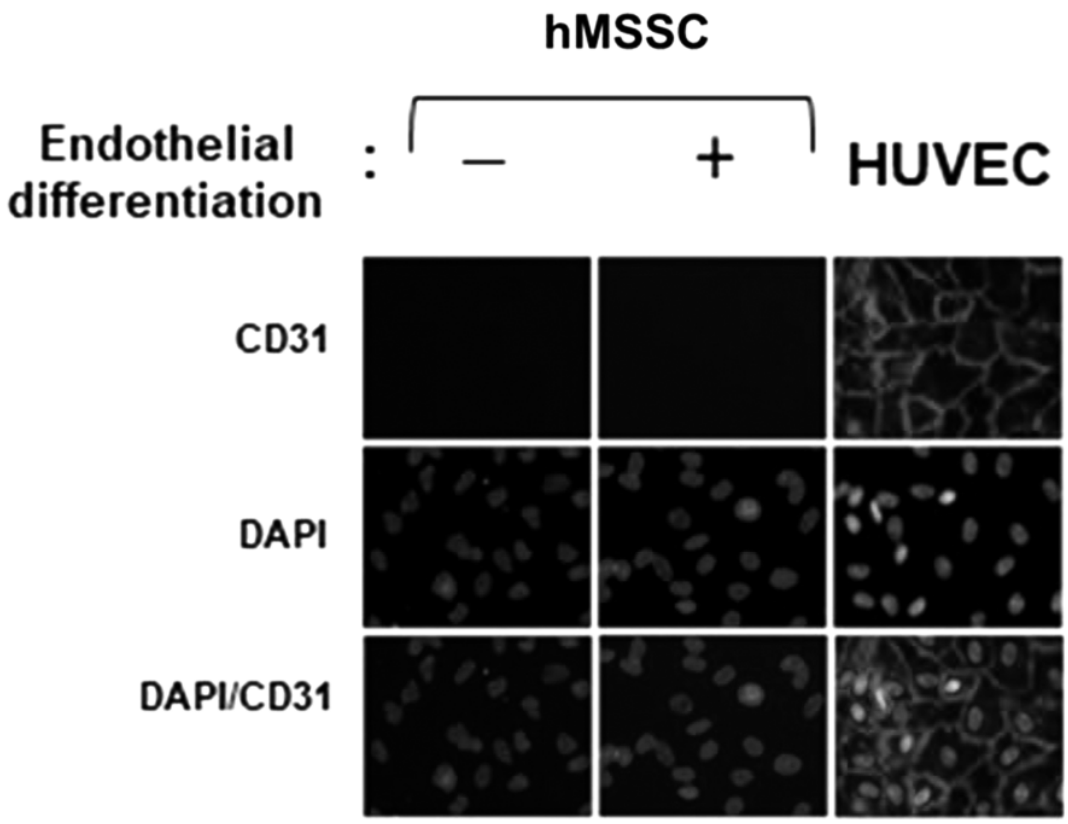

hMSSC
Endothelial differentiation
:
—
+
HUVEC
CD31
DAPI
DAPI/CD31

FIG. 2D

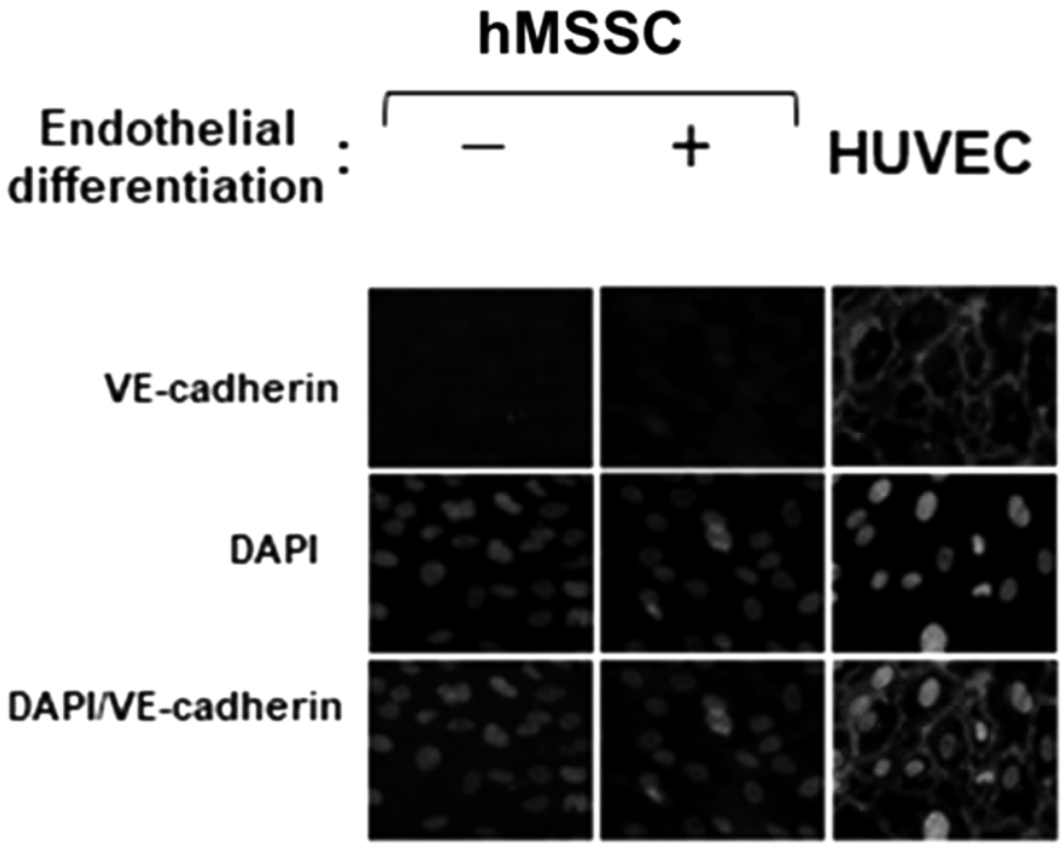
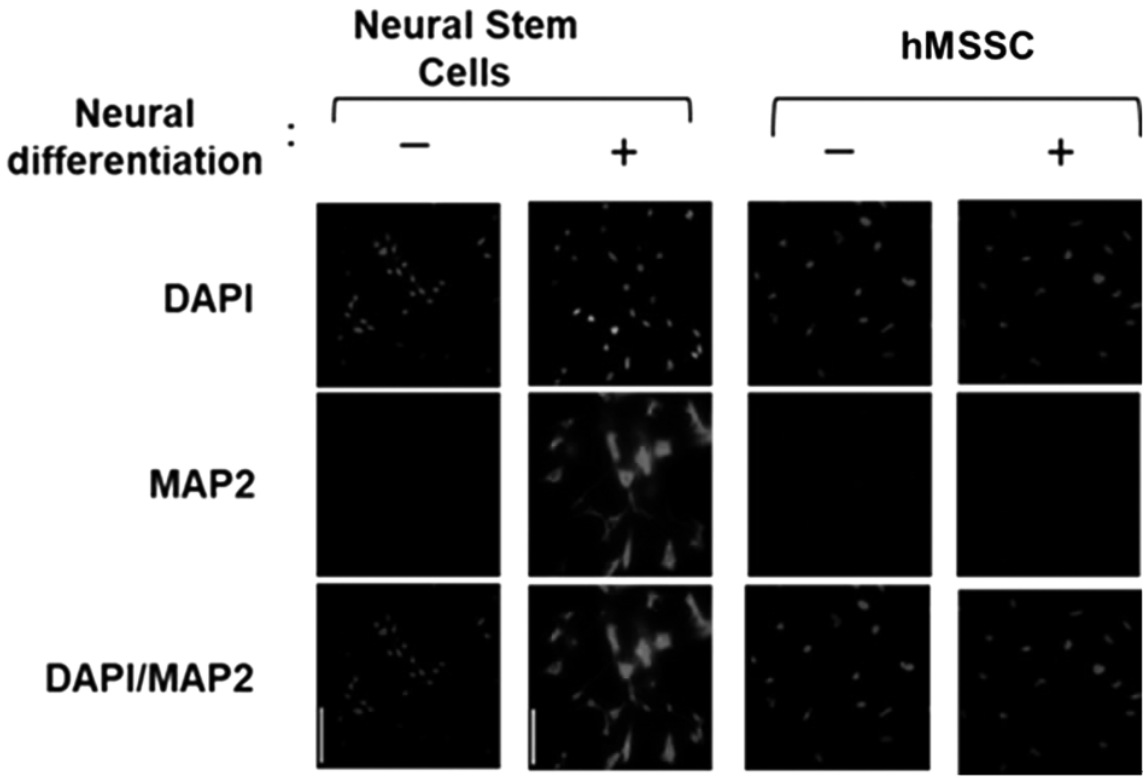

hMSSC
Endothelial differentiation :
—
+
HUVEC
VE-cadherin
DAPI
DAPI/VE-cadherin

FIG. 2E


Neural Stem Cells
hMSSC
Neural differentiation :
–
+
–
+
DAPI
MAP2
DAPI/MAP2

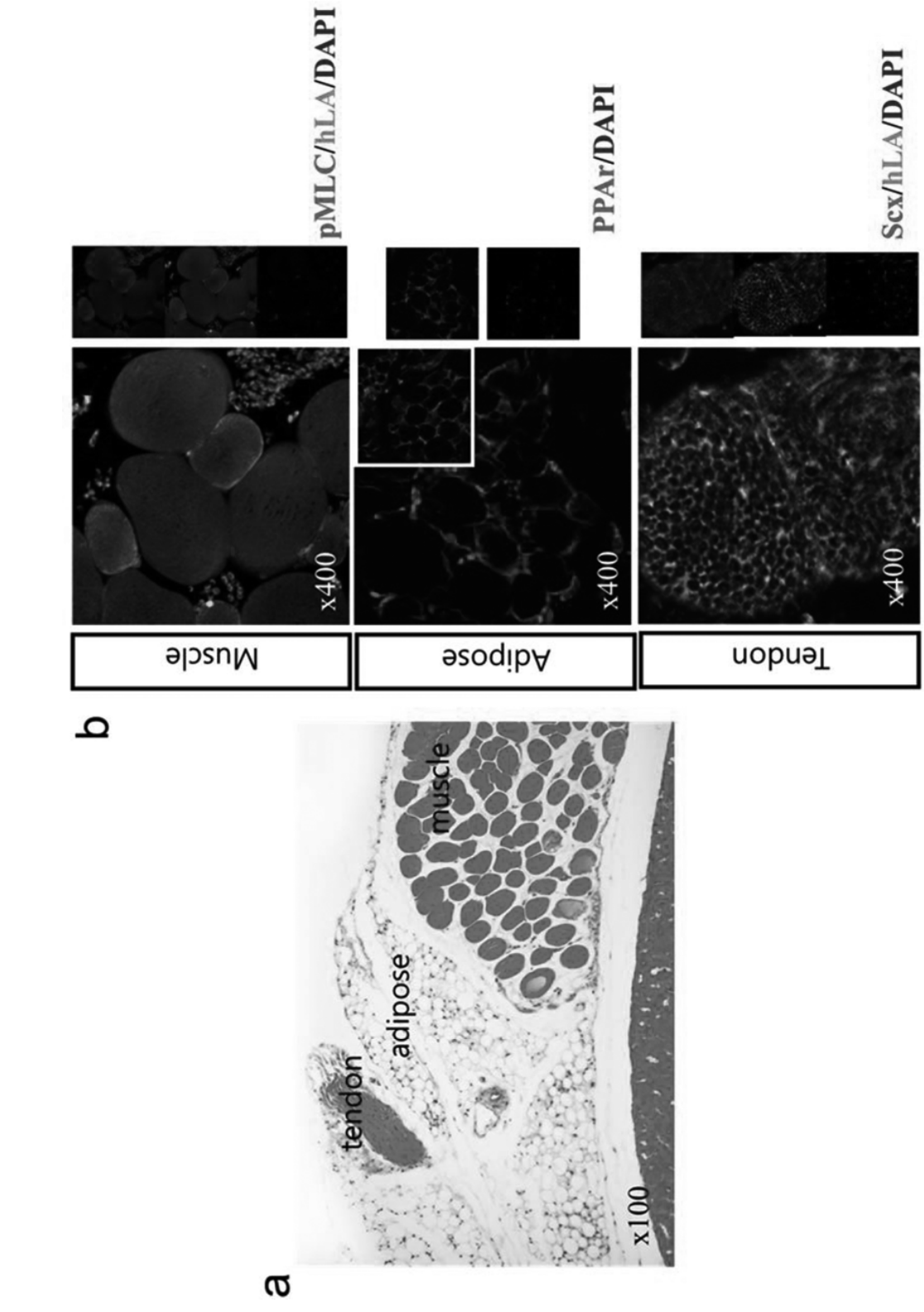

a
tendon
adipose
muscle
x100
b
Muscle
Adipose
Tendon
pMLC/hLA/DAPI
PPAr/DAPI
Scx/hLA/DAPI
x400
x400
x400

FIG. 3A

FIG. 3B

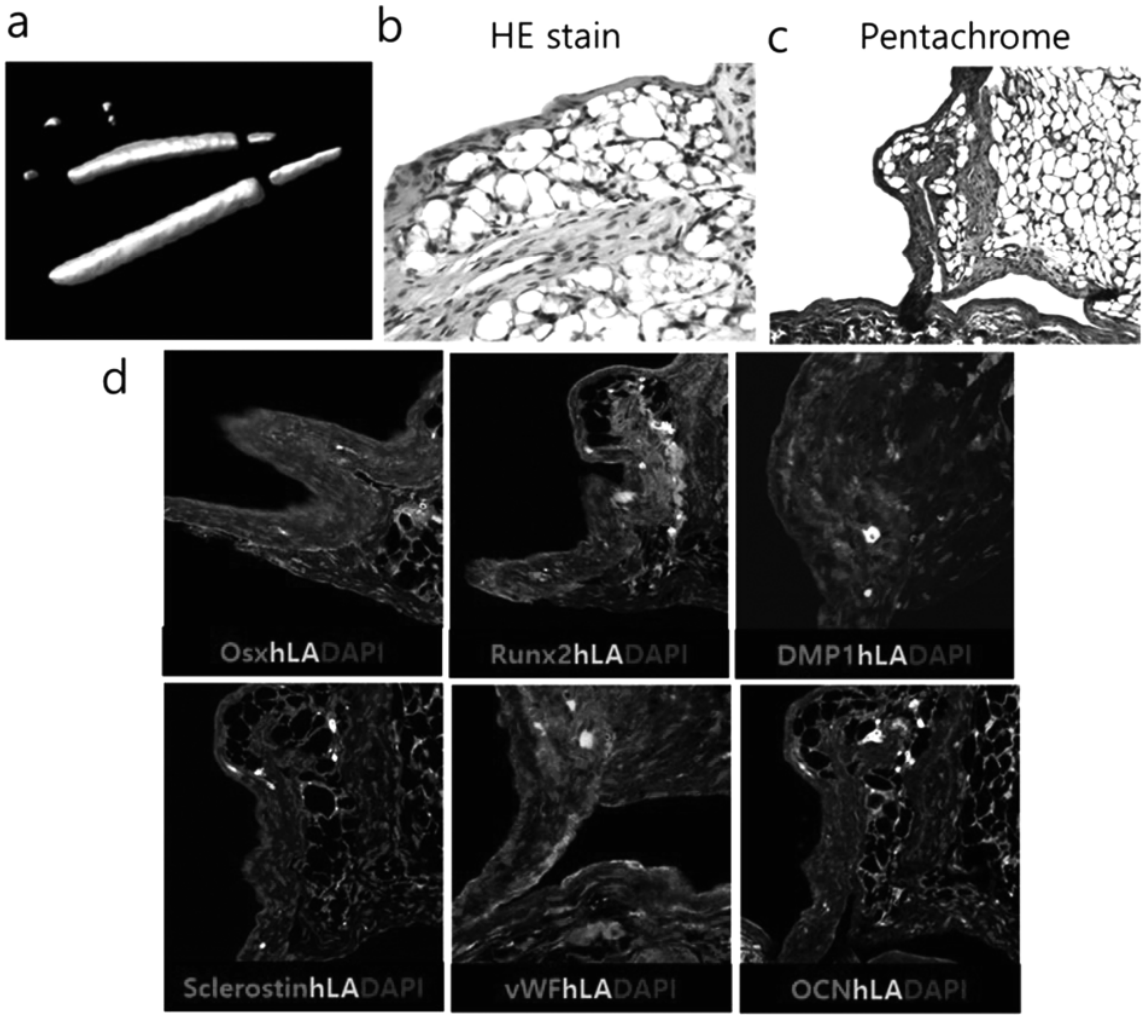
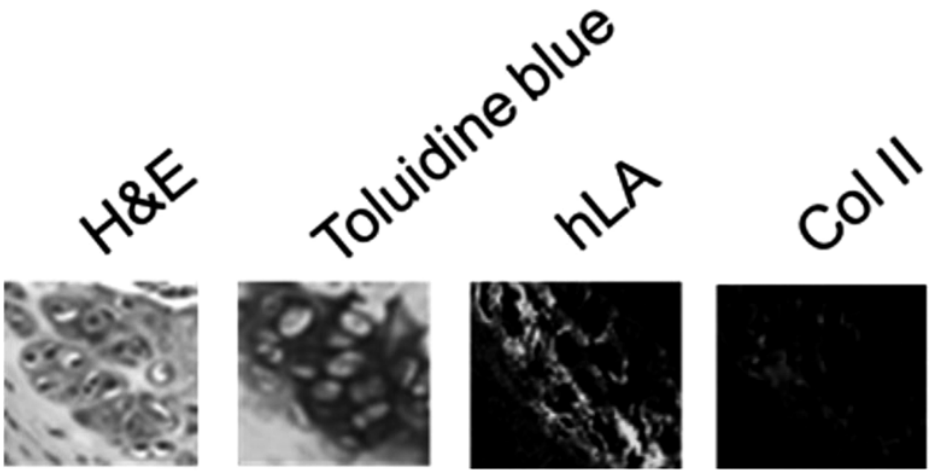

a
b
HE stain
c
Pentachrome
d
OsxhLADAPI
Runx2hLADAPI
DMP1hLADAPI
SclerostinhLADAPI
vWFhLADAPI
OCNhLADAPI

FIG. 3C



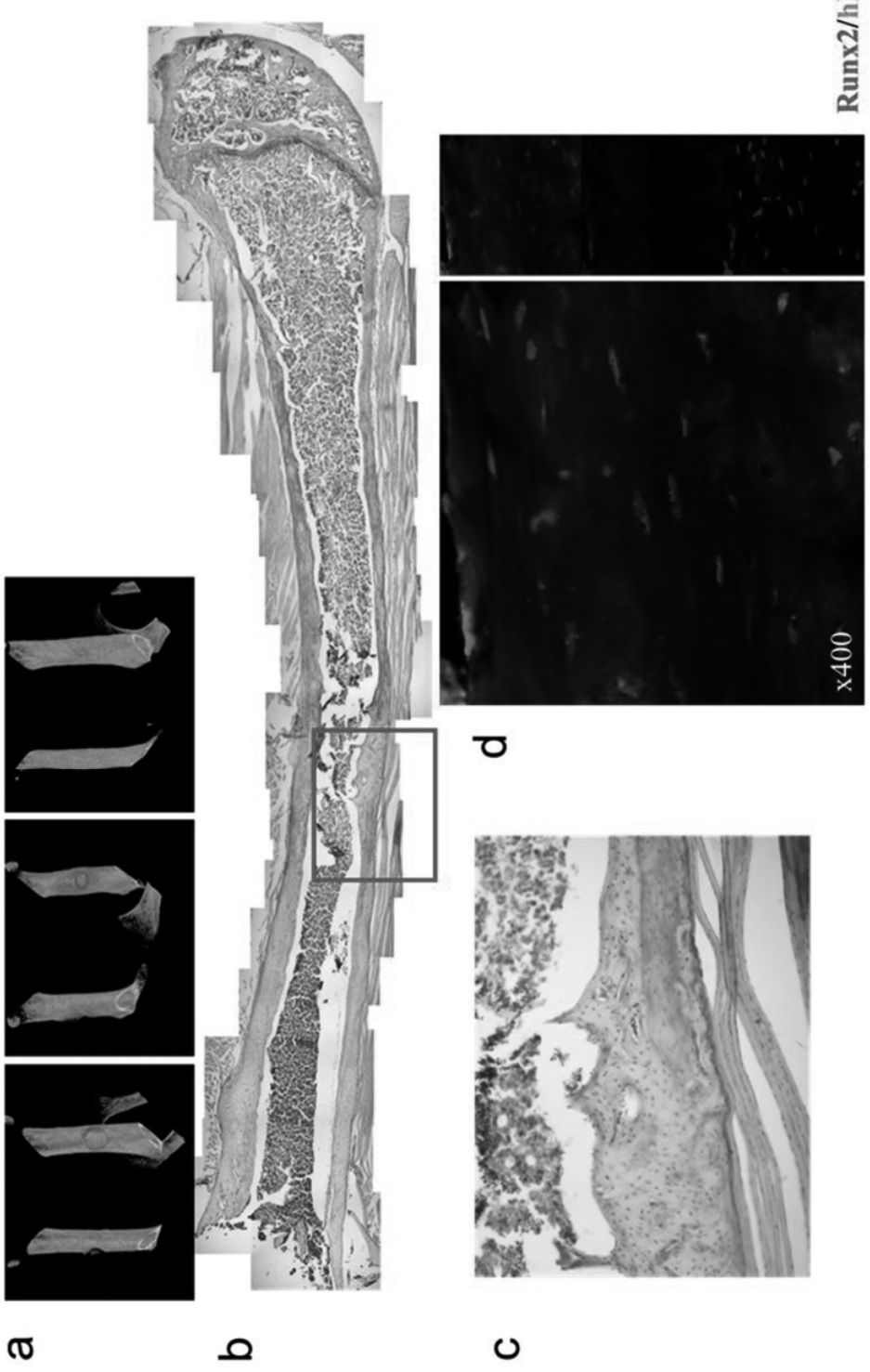


FIG. 4A

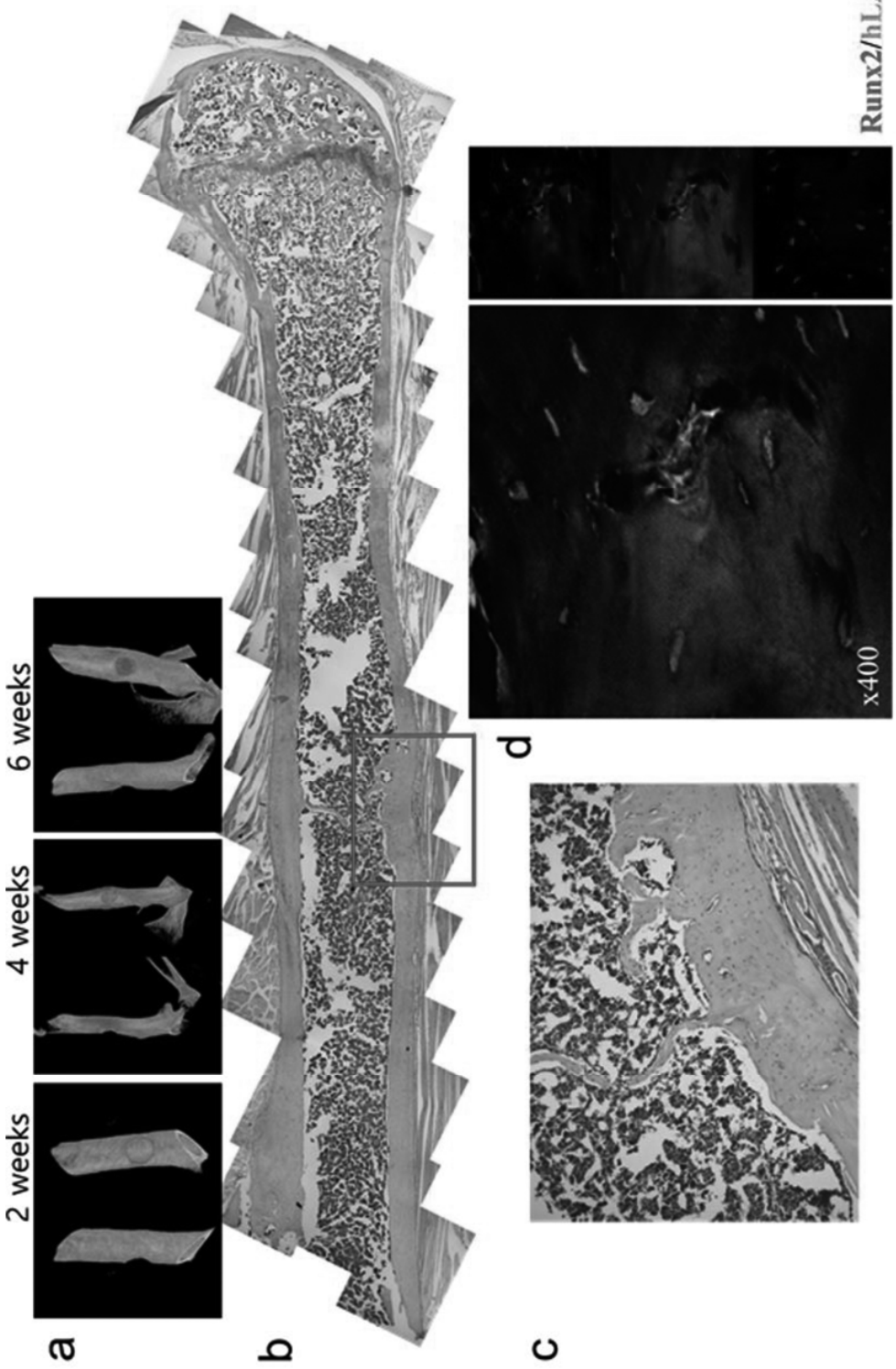


FIG. 4B

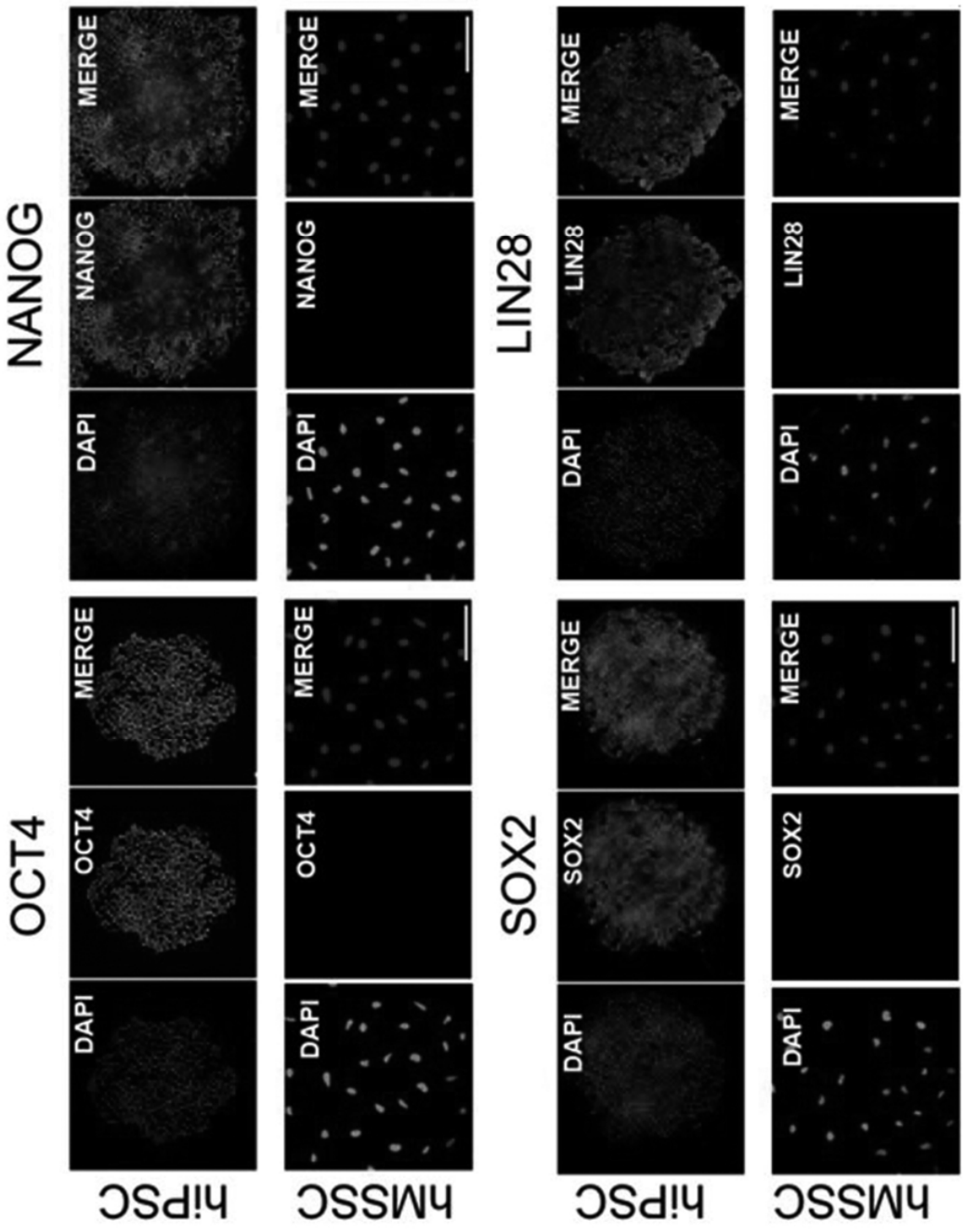

OCT4
NANOG
LIN28
SOX2
DAPI
OCT4
NANOG
LIN28
SOX2
MERGE
hiPSC
hMSSC

FIG. 5A

FIG. 5B

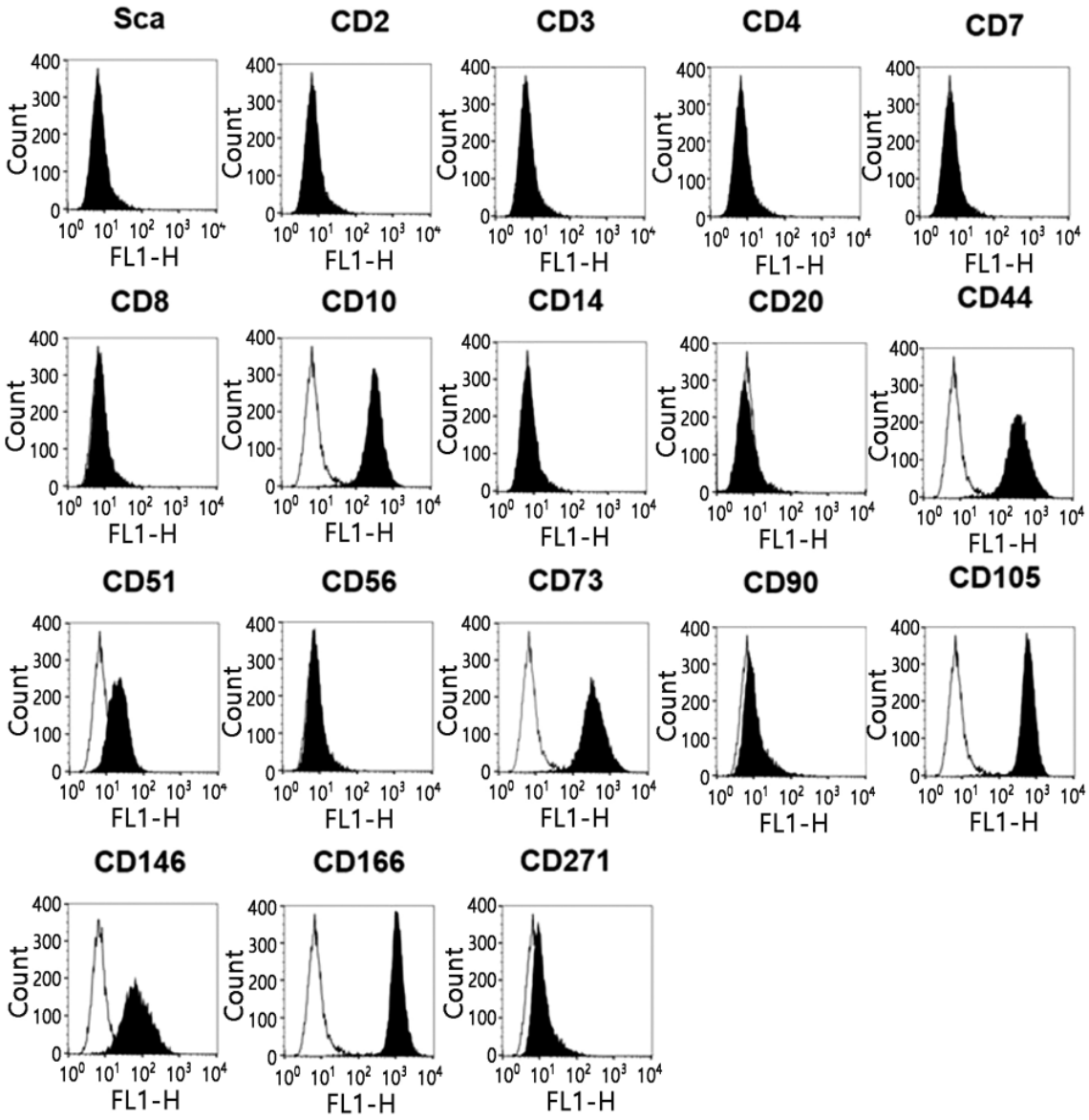

Sca
CD2
CD3
CD4
CD7
CD8
CD10
CD14
CD20
CD44
CD51
CD56
CD73
CD90
CD105
CD146
CD166
CD271
Count
FL1-H

FIG. 5C

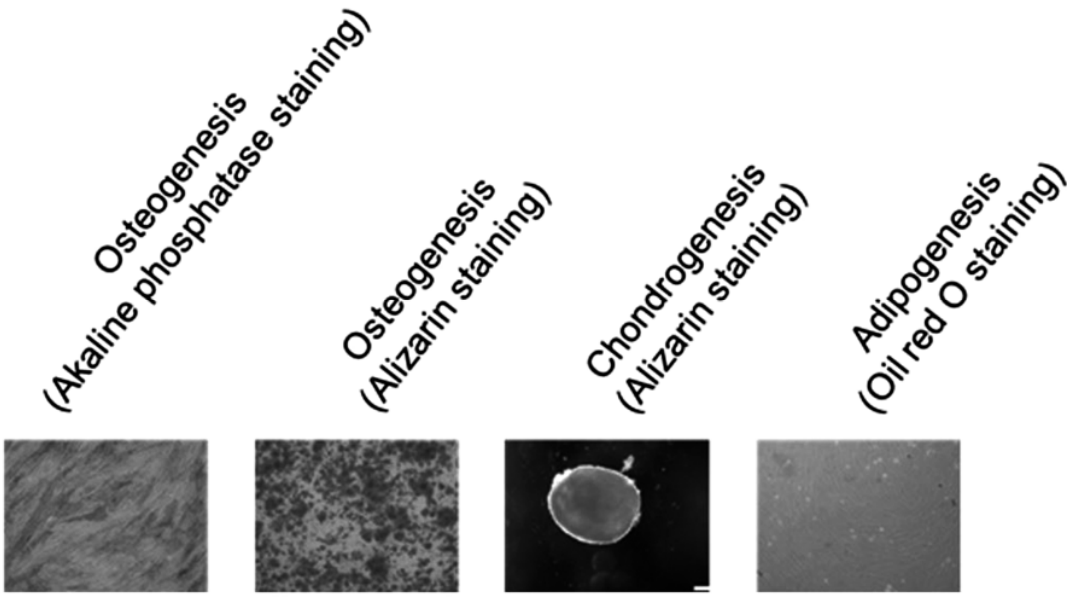

Osteogenesis
(Akaline phosphatase staining)
Osteogenesis
(Alizarin staining)
Chondrogenesis
(Alizarin staining)
Adipogenesis
(Oil red O staining)

FIG. 5D

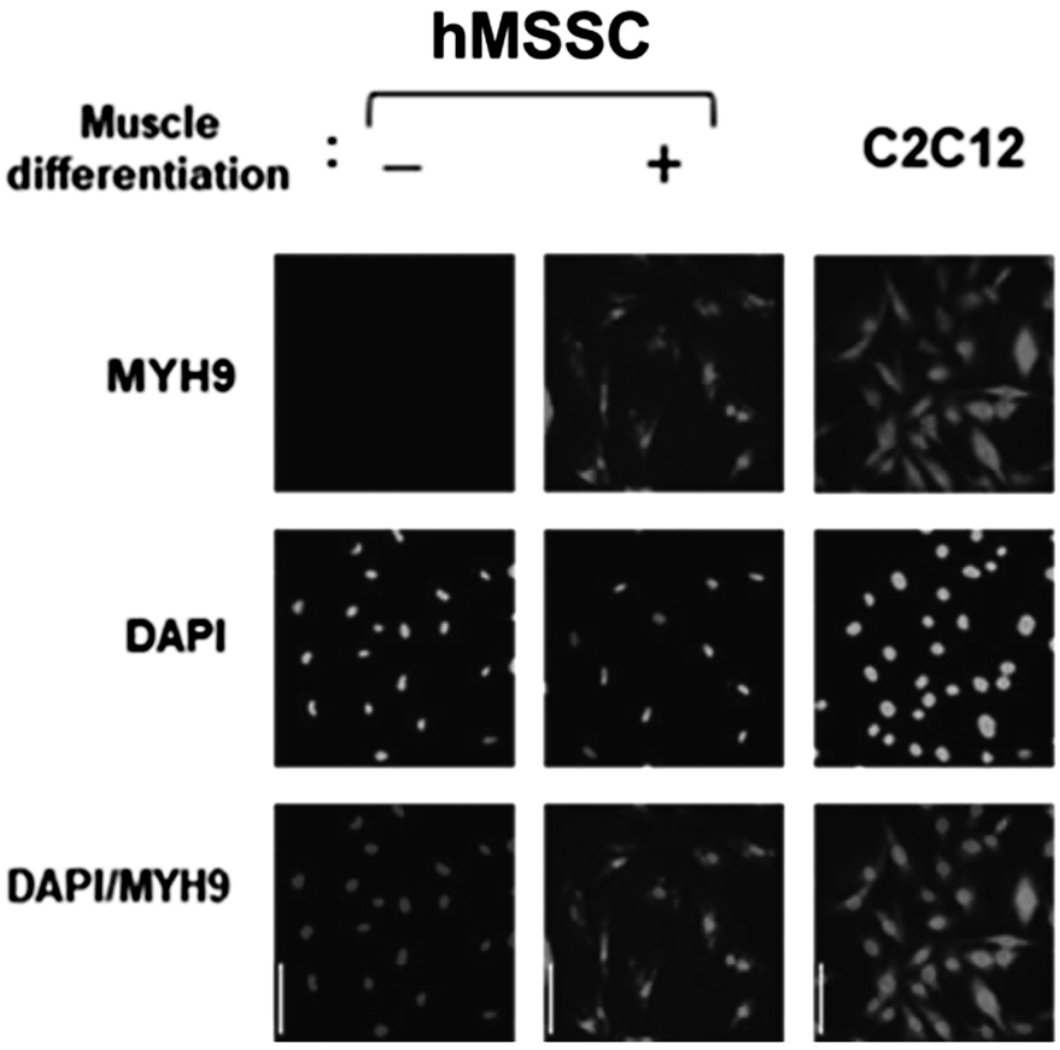


FIG. 6

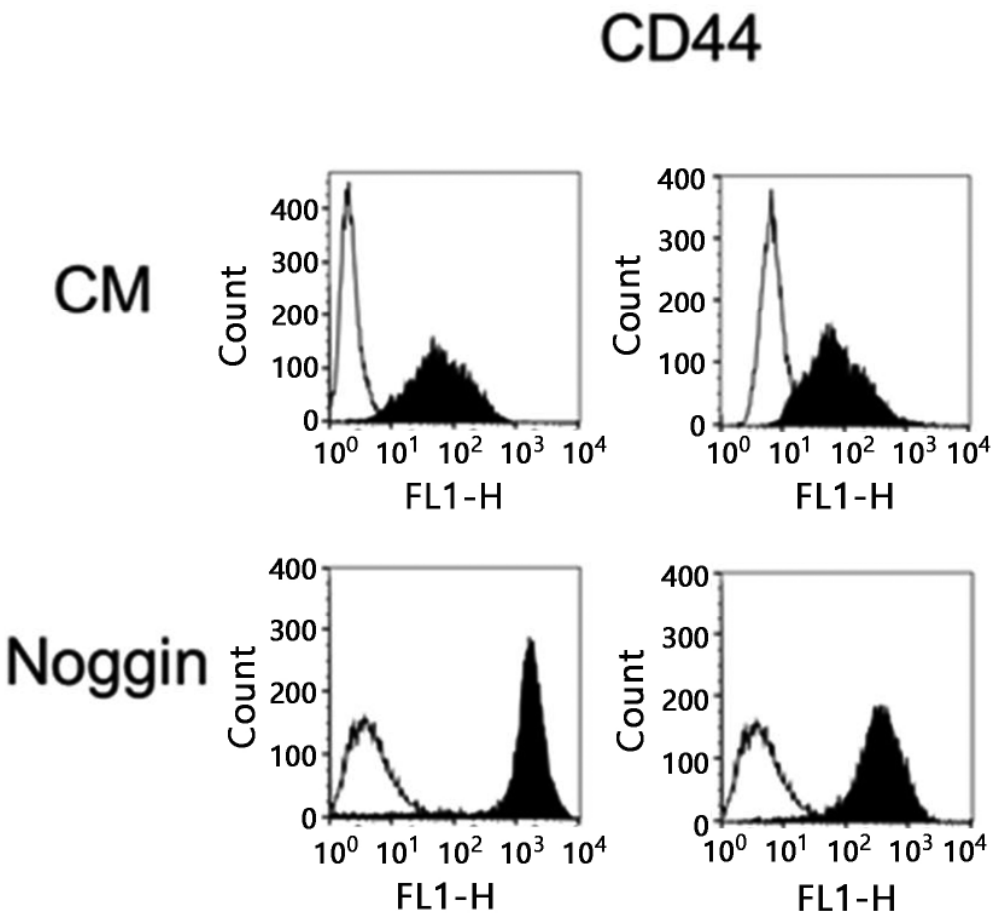


FIG. 7

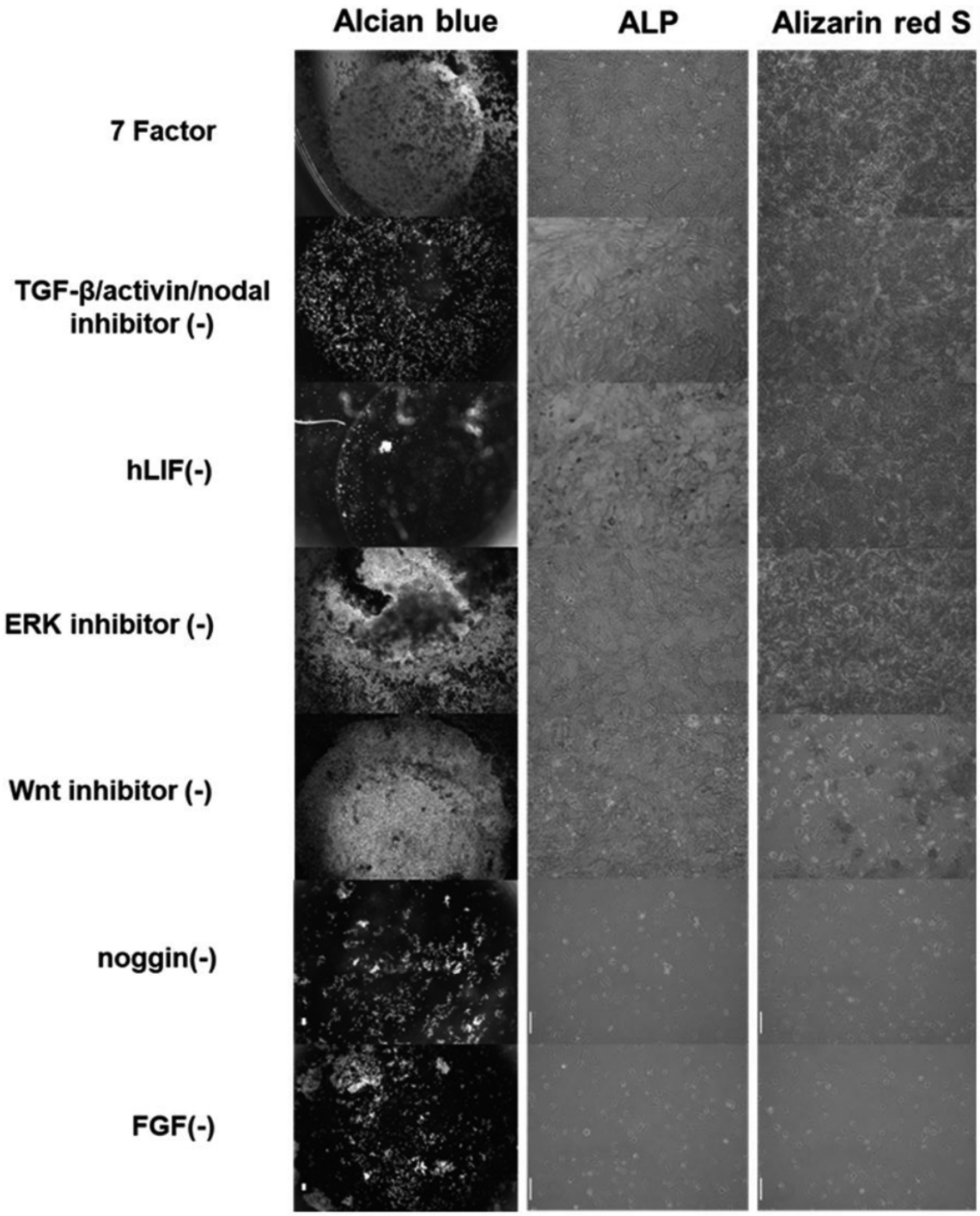

Alcian blue
ALP
Alizarin red S
7 Factor
TGF-β/activin/nodal inhibitor (-)
hLIF(-)
ERK inhibitor (-)
Wnt inhibitor (-)
noggin(-)
FGF(-)

FIG. 8

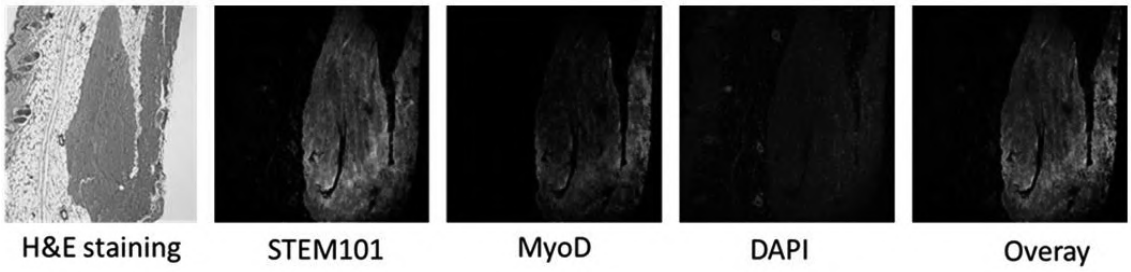


FIG. 9

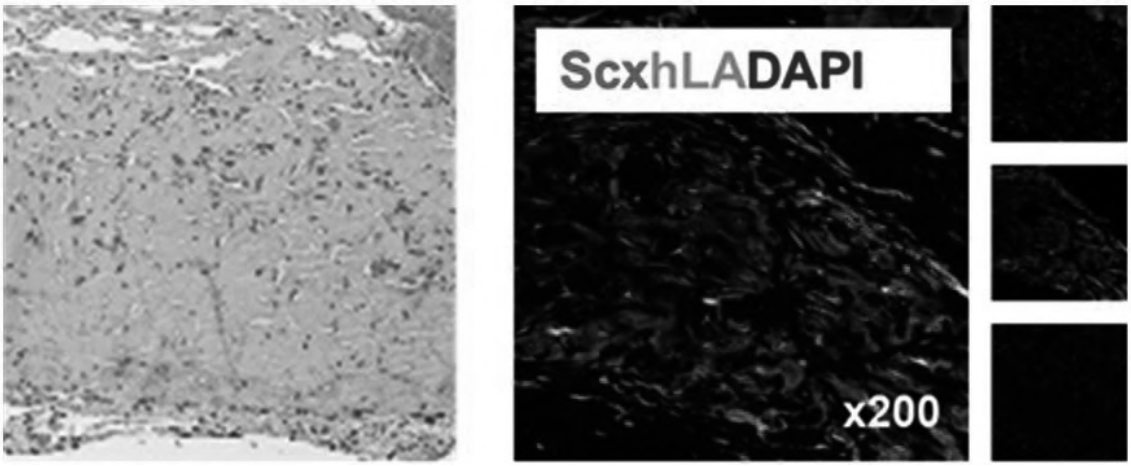


FIG. 10A

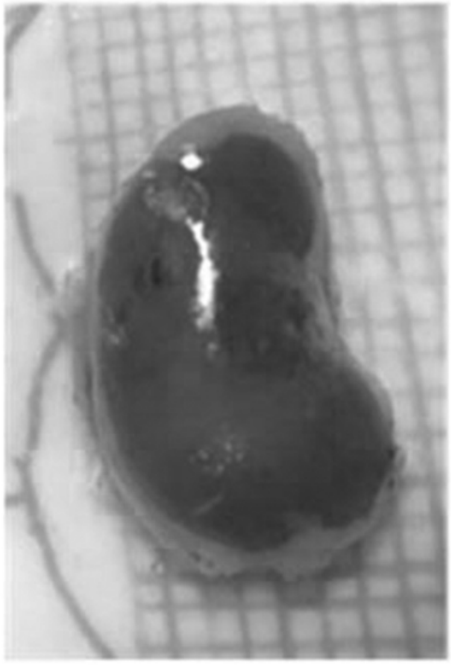


FIG. 10B



FIG. 10C

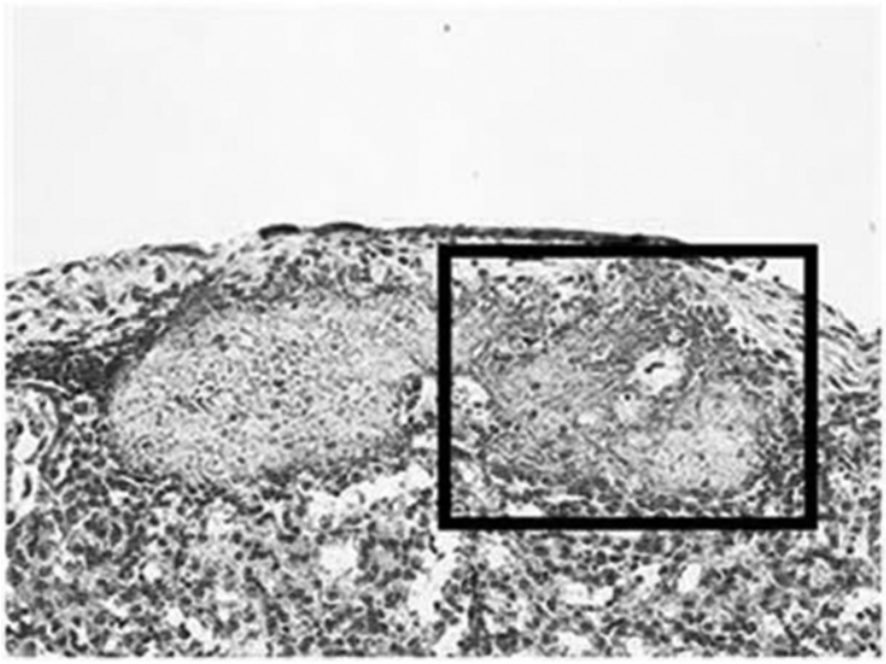


FIG. 10D

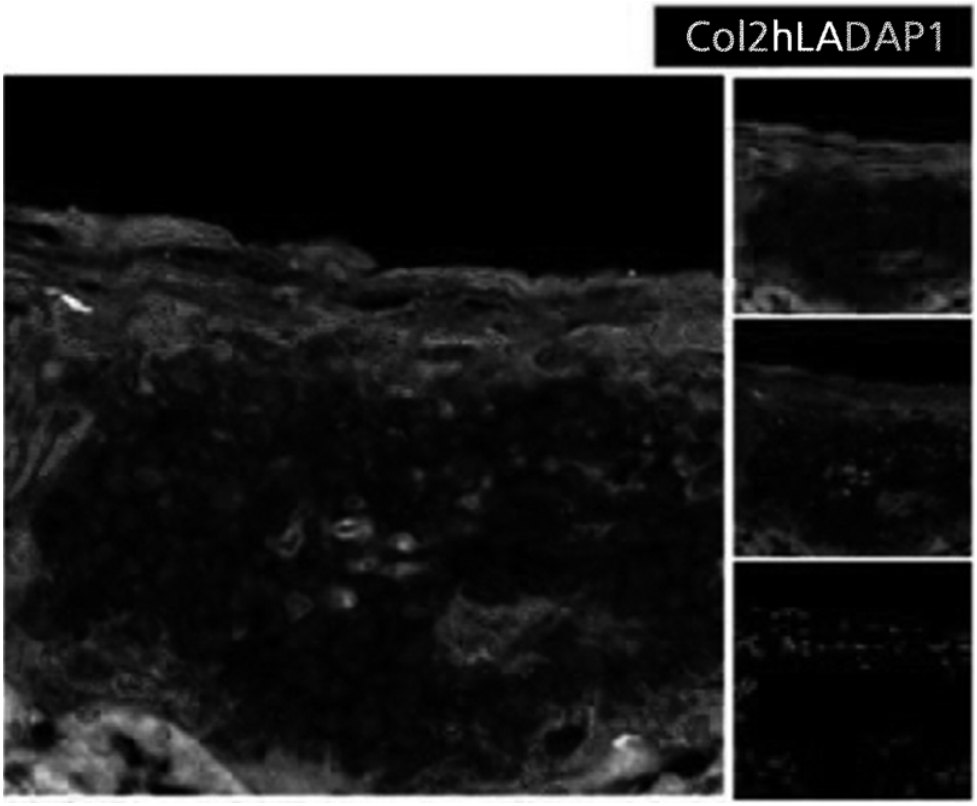


FIG. 10E

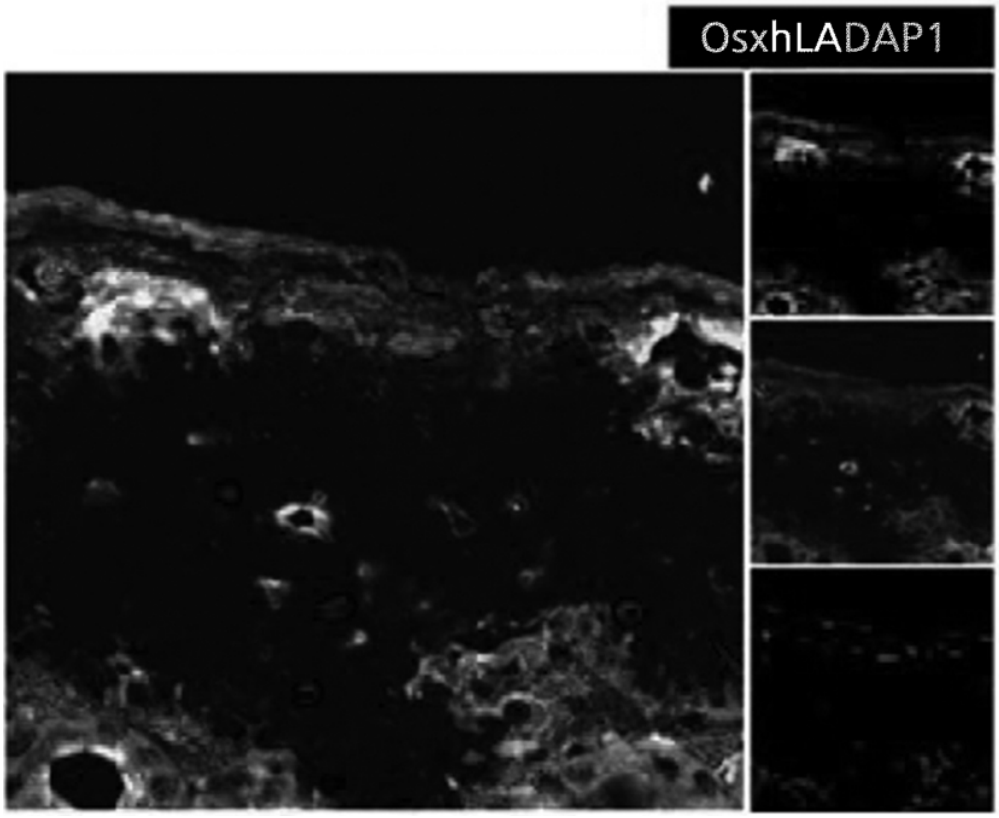


FIG. 11A

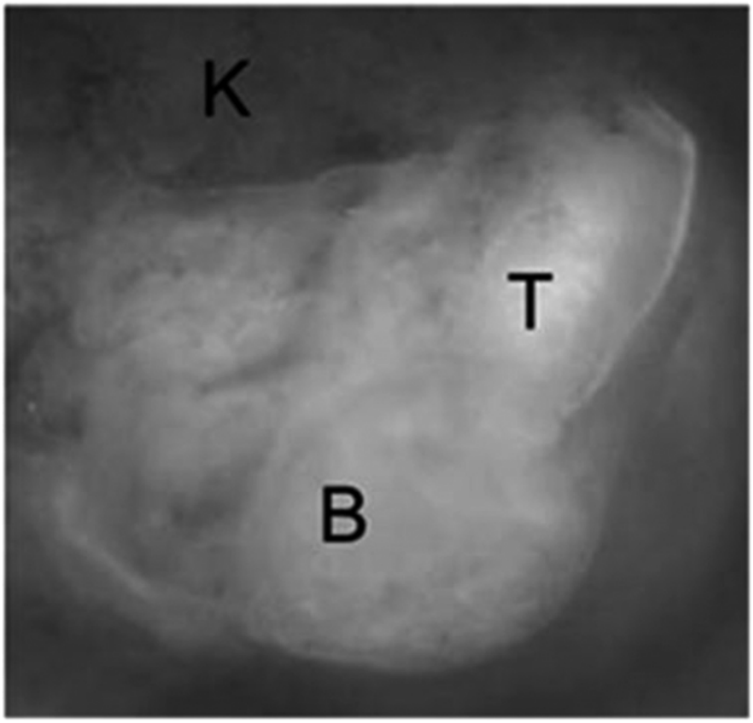


FIG. 11B



FIG. 11C

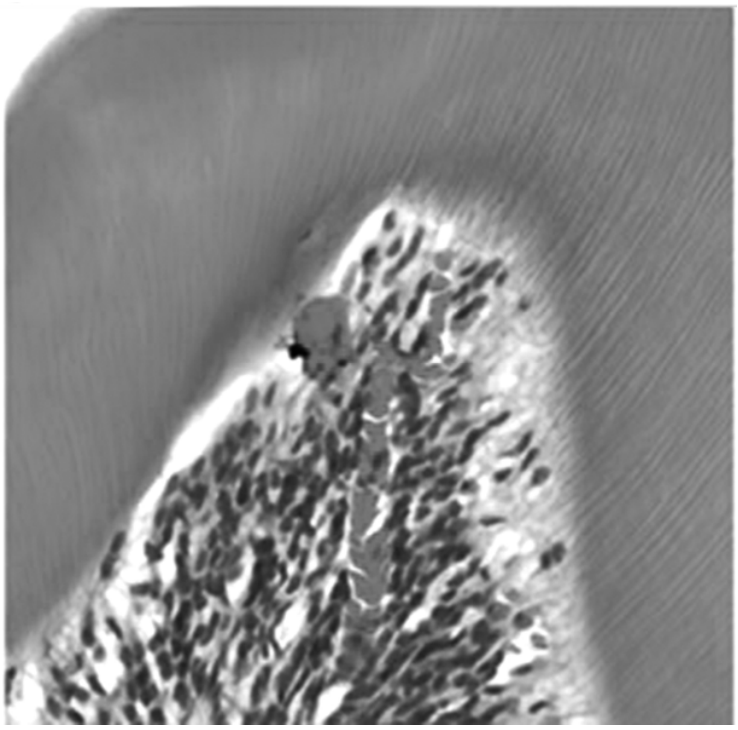
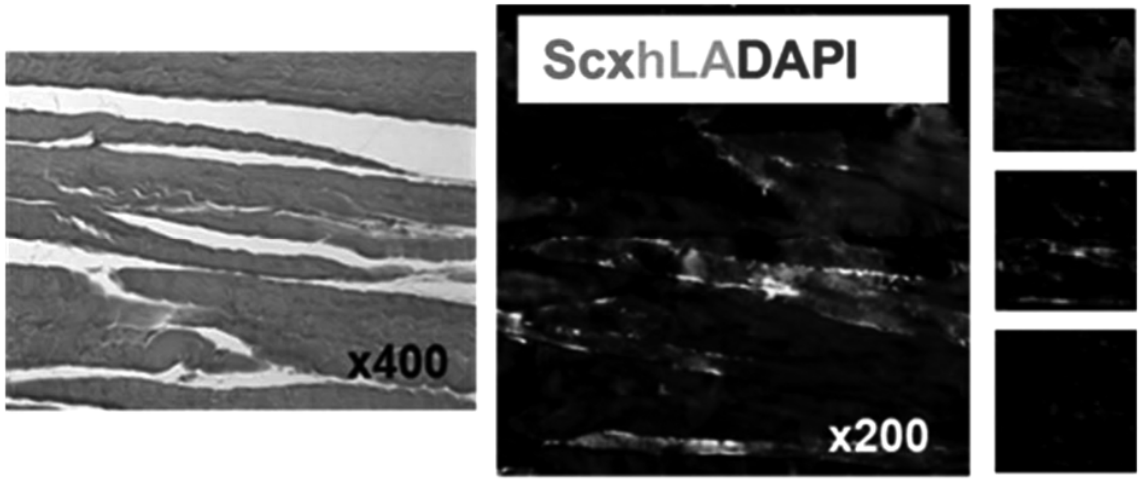


FIG. 11D



FIG. 12



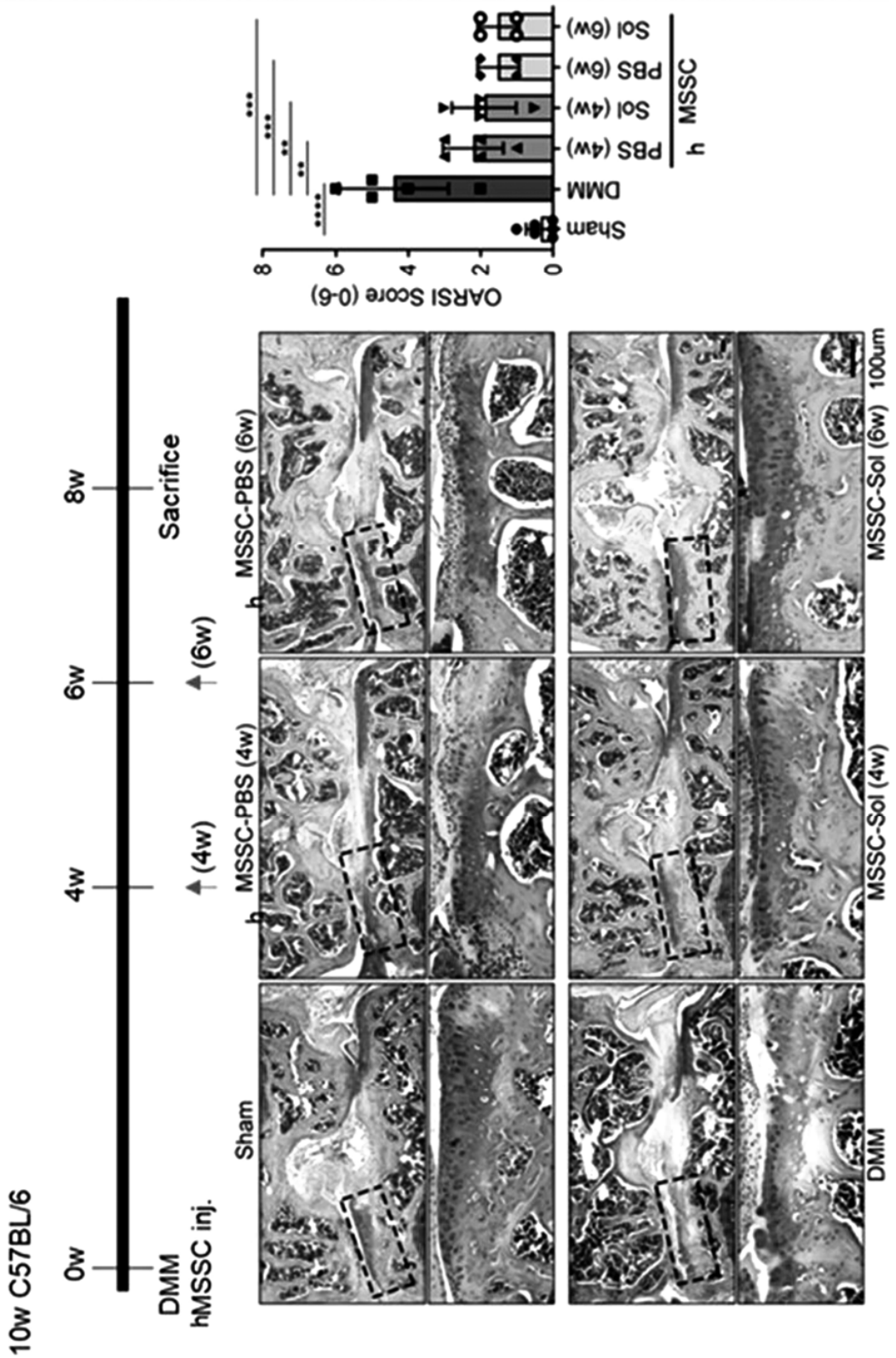

10w C57BL/6
0w
4w
6w
8w
DMM
hMSSC inj.
(4w)
(6w)
Sacrifice
Sham
DMM
MSSC-PBS (4w)
MSSC-Sol (4w)
MSSC-PBS (6w)
MSSC-Sol (6w)
100um
OARSI Score (0-6)
Sham
DMM
PBS (4w)
Sol (4w)
PBS (6w)
Sol (6w)
MSSC

FIG. 13