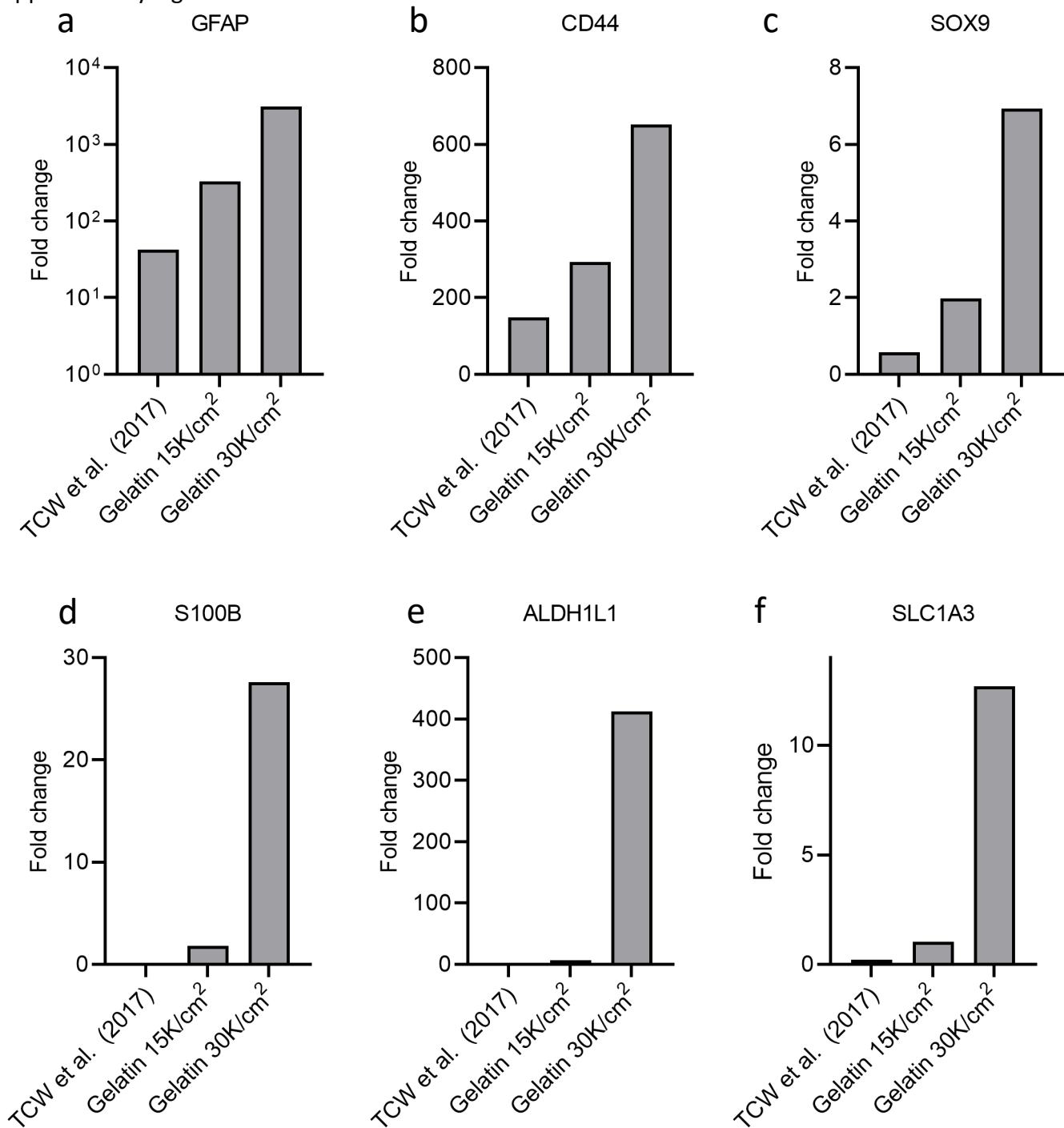
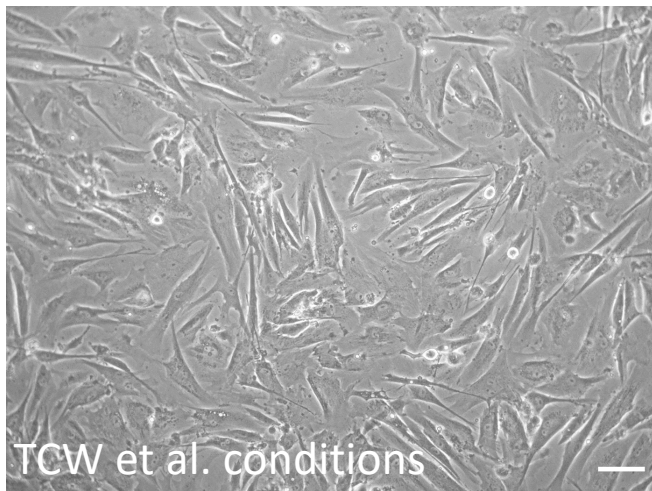


Supplementary Figure 1

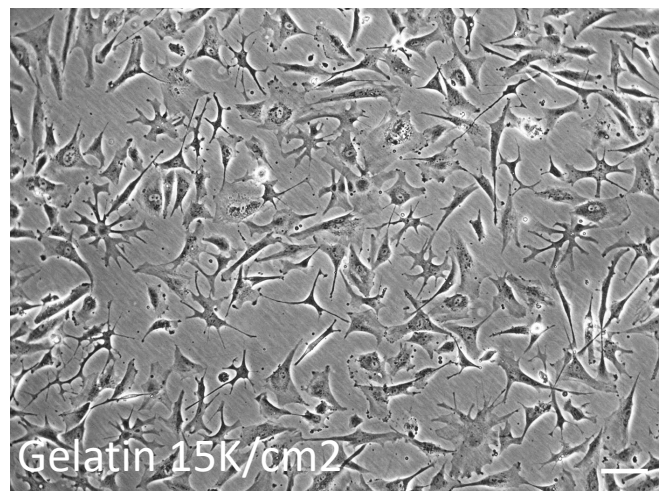


Supplementary Figure 2

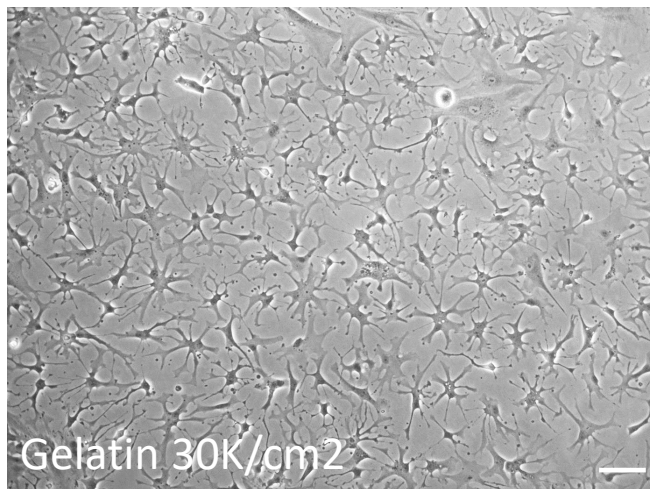
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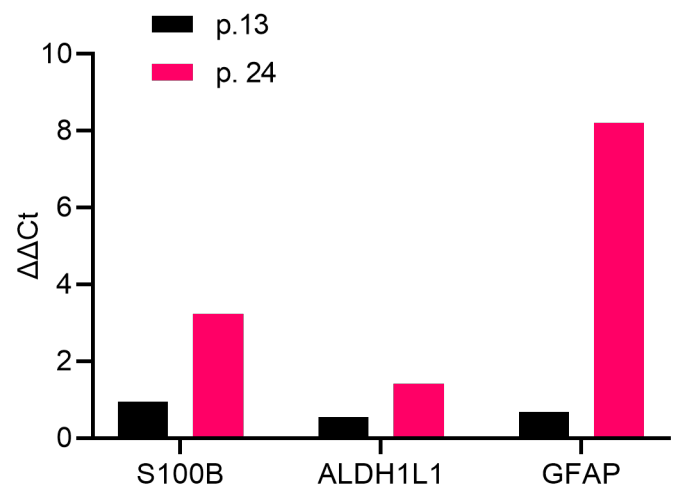
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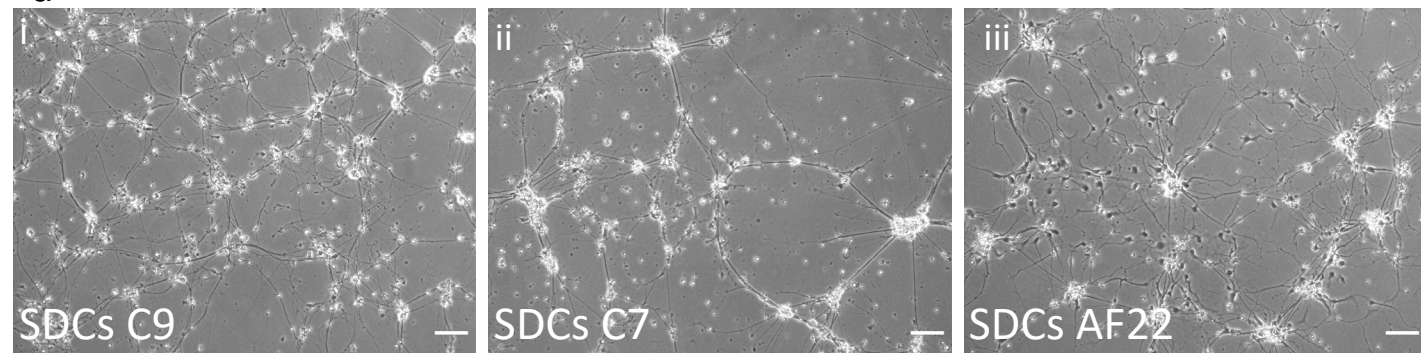
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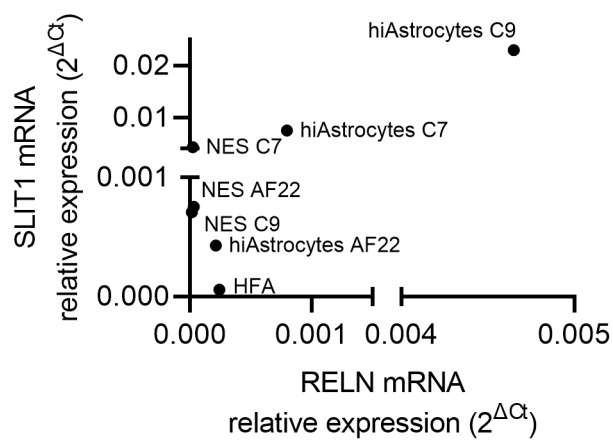
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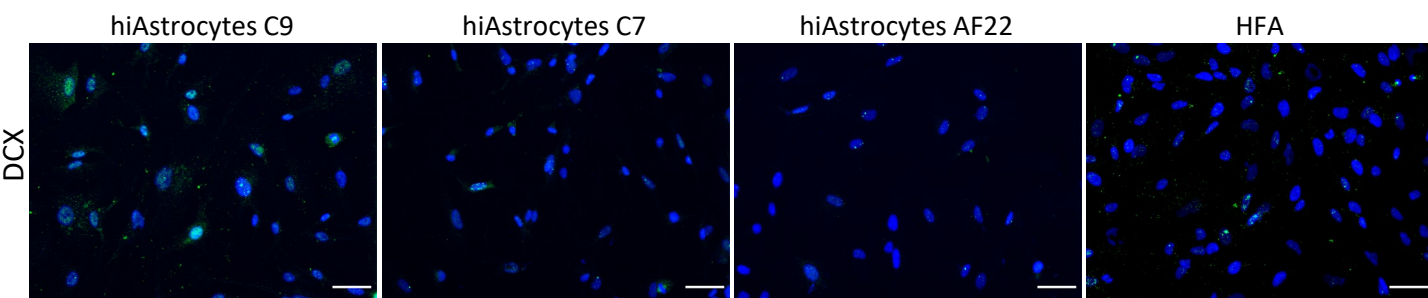
a



b



c



Supplementary Figure 4 NES C9

NES C7

NES AF22

S100B

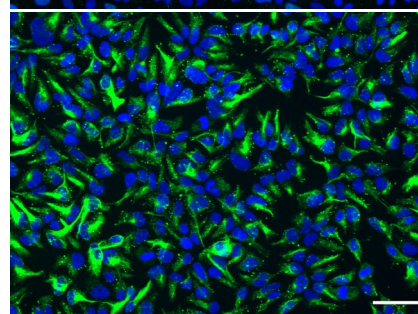
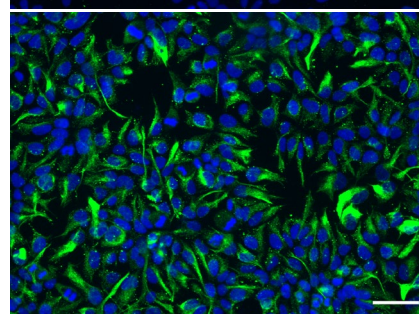
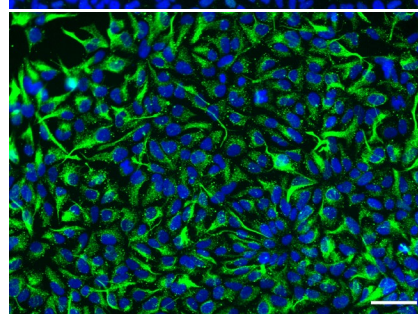
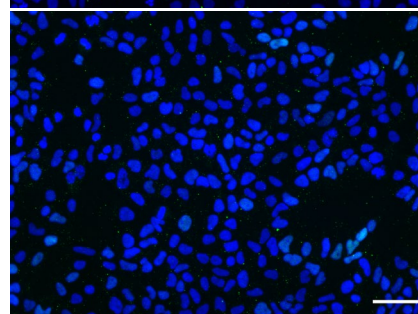
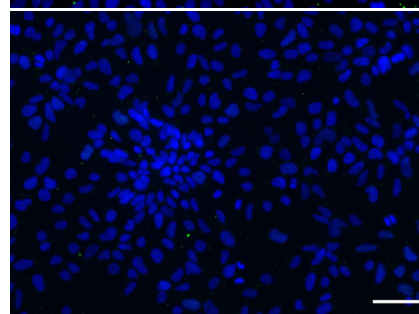
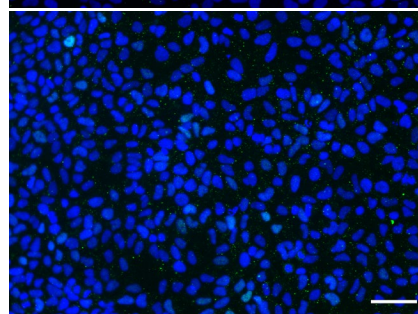
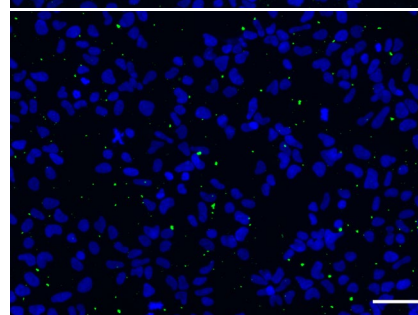
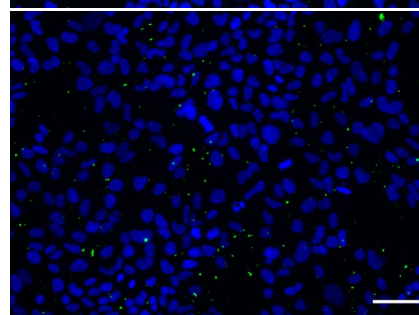
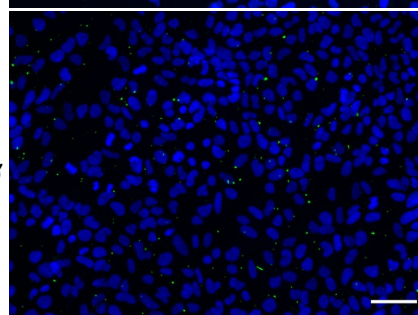
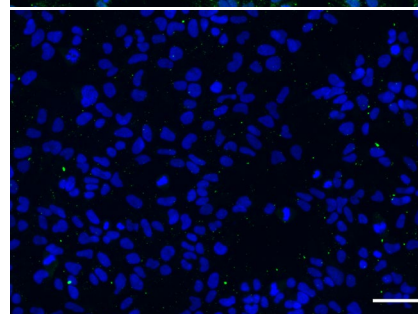
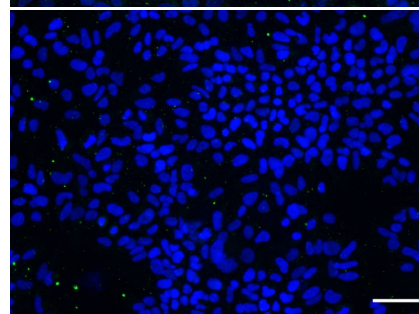
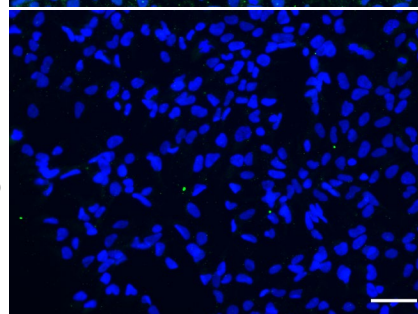
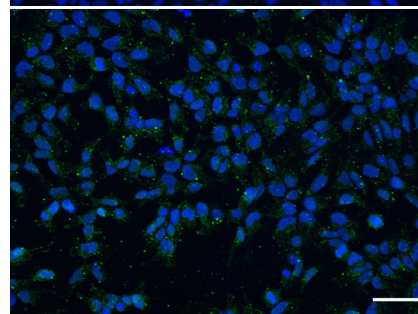
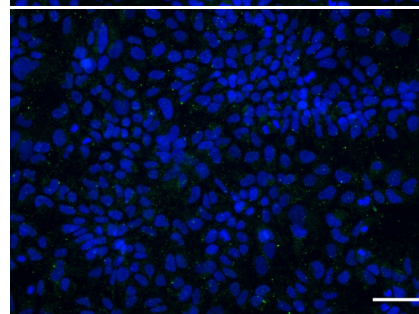
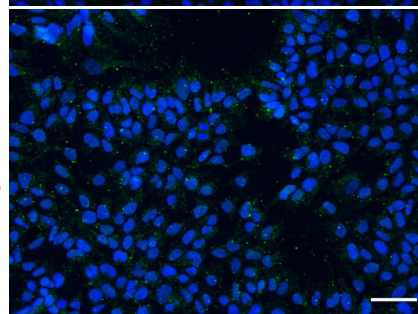
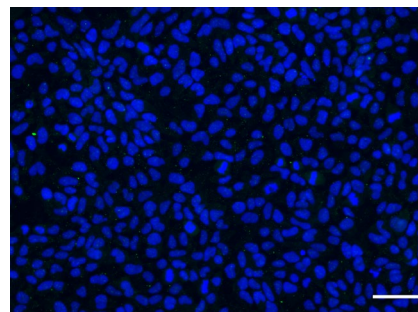
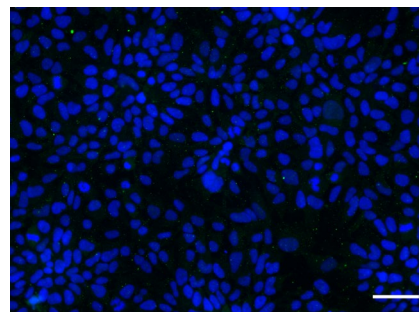
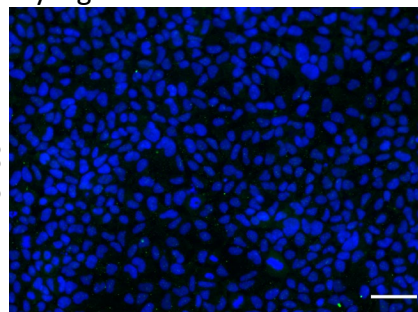
CD44

GFAP

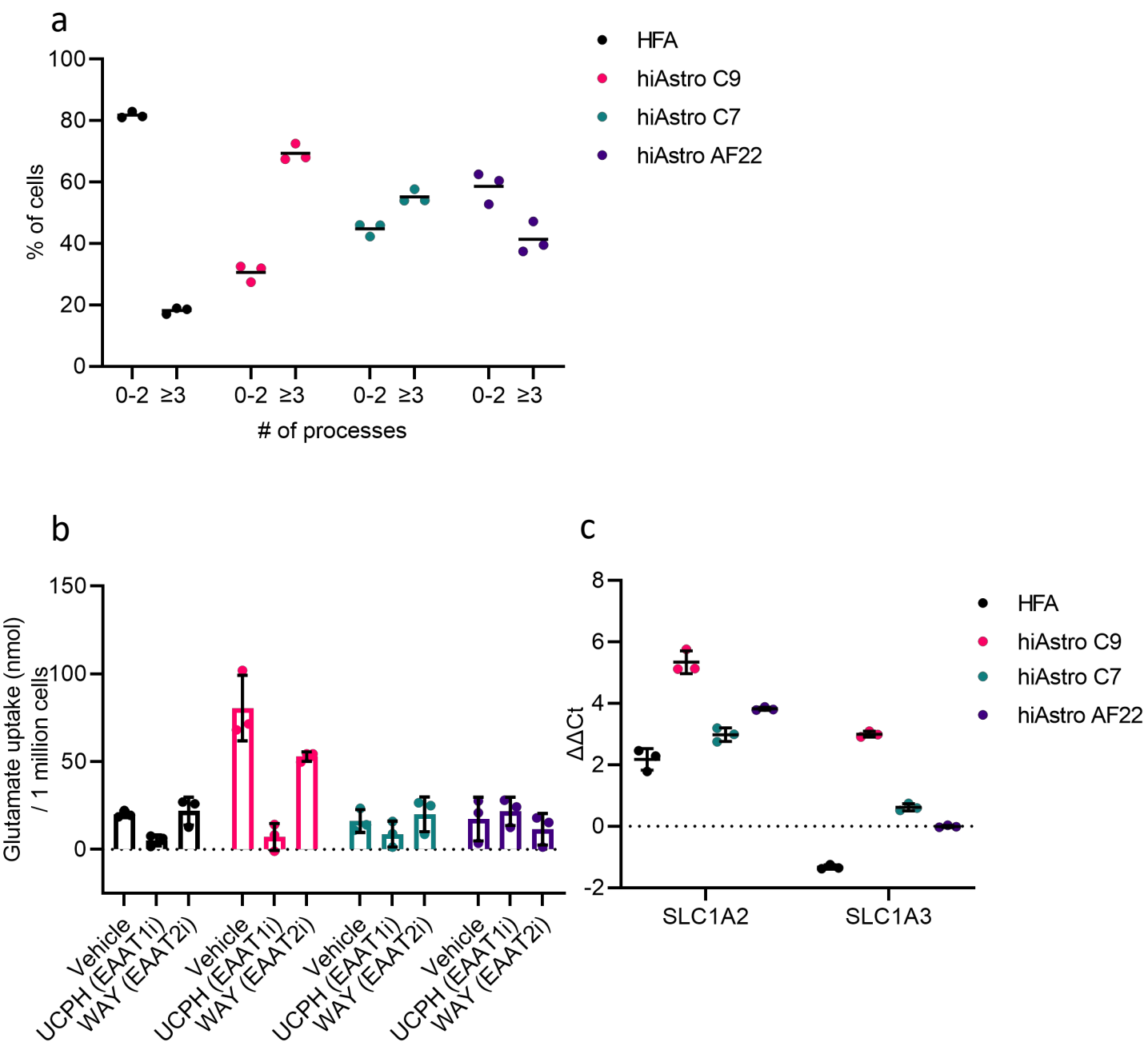
AQP4

ALDH1L1

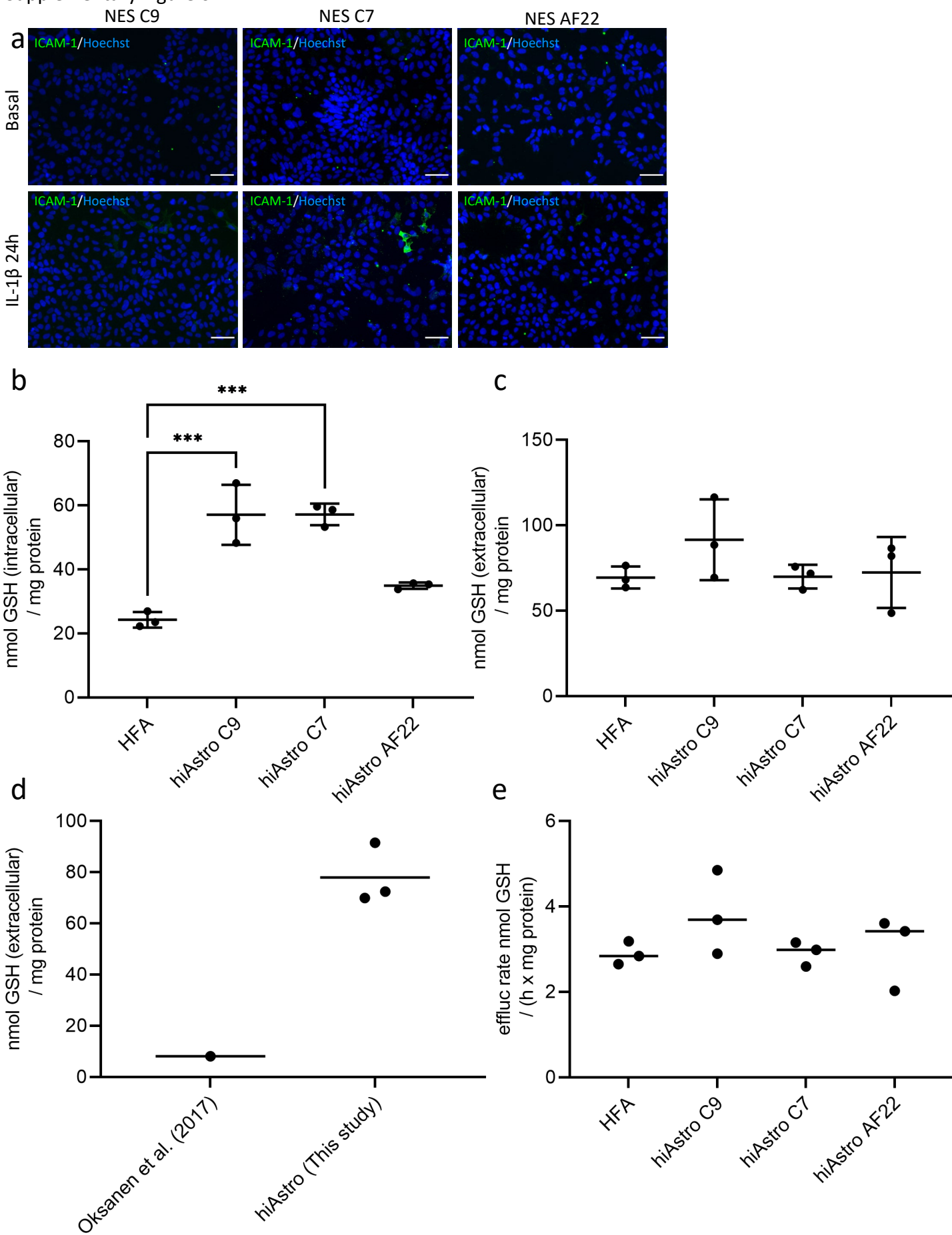
VIMENTIN



Supplementary Figure 5



Supplementary Figure 6



Supplementary Table 1 List of reagents and kits

Reagent	Supplier	Catalogue Number
DMEM:F12 Glutamax	Thermo Fisher	31331-028
N2	Thermo Fisher	17502-048
B27	Thermo Fisher	17504-044
B27, minus antioxidants	Thermo Fisher	10889-038
bFGF	R&D Systems	233-FB
EGF	Sigma-Aldrich	E9644
PLO	Sigma-Aldrich	P3655
L2020	Sigma-Aldrich	L2020
DPBS (w/o Ca ⁺⁺ and Mg ⁺⁺)	Thermo Fisher	14190-094
DTI	Thermo Fisher	R-007-100
AM kit	ScienCell	1801
DPBS (w/ Ca ⁺⁺ and Mg ⁺⁺)	Thermo Fisher	14040-091
Hoechst 33342	Thermo Fisher	H3570
Triton X-100 (1%)	Thermo Fisher	HFH10
Glutamate detection kit	Abcam	ab138883
Glutathione detection kit	Sigma-Aldrich	CS0260
HBSS	Thermo Fisher	14025-050
DMSO	Sigma-Aldrich	D2650
Glutamic acid	Sigma-Aldrich	49449
UCPH 101	Abcam	ab120309
WAY 213613	R&D Systems	2652
IL-1 β	R&D Systems	201-LB
TrypLE Select	Thermo Fisher	12563-029
Gelatin	Thermo Fisher / ScienCell	S-006-100 / 0423
BDNF	R&D Systems	248-BDB
GDNF	R&D Systems	212-GD
Goat serum	Sigma-Aldrich	G9023
Poly-D-Lysine	Sigma-Aldrich	P6407
Goat anti-rabbit CF448	Sigma-Aldrich	SAB4600044
Goat anti-mouse CF555	Sigma-Aldrich	SAB4600302

Supplementary Table 2 List of cell lines used

Cell line	Gender	iPSC reprogra mming	Age	Neural induction method	Publication
Control 9	Male	mRNA	Child	Dual SMADi + CHIR99021	Navarro et al. 2020
Control 7	Male	Sendai virus	Middle age	Dual SMADi + CHIR99021	Lam et al. 2019
Control AF22	Female	Lenti virus	Middle age	Spontaneous UM, colony picking	Falk et al. 2012

Supplementary Table 3 List of antibodies used in this study

Antibody	Supplier	Catalog	RRID	Dilution
S100B	Abcam	ab52642	AB_882426	1:100
CD44	Abcam	ab157107	AB_2847859	1:500
GFAP	DAKO	Z0334	AB_10013382	1:500
AQP4	Sigma-Aldrich	HPA014784	AB_1844967	1:125
ALDH1L1	Abcam	ab190298	AB_2857848	1:500
VIMENTIN	Abcam	ab92547	AB_10562134	1:500
EAAT1	Thermo Fisher	PA5-19709	AB_10982702	1:200
EAAT2	Thermo Fisher	711020	AB_2633106	1:250
ICAM-1	R&D Systems	BBA3	AB_356950	1:50

Supplementary Table 4 List of TaqMan probes used in this study.

Gene	TaqMan Assay ID
ALDH1L1	Hs01003842_m1
CD44	Hs01075864_m1
DCX	Hs00167057_m1
GAPDH	Hs02758991_g1
GFAP	Hs00909233_m1
NES	Hs04187831_g1
NFIA	Hs00325656_m1
S100B	Hs00902901_m1
SLC1A2	Hs01102423_m1
SLC1A3	Hs00904823_g1
SOX1	Hs01057642_s1
SOX2	Hs01053049_s1
RELN	Hs01022646_m1
SOX9	Hs00165814_m1
MAOB	Hs01106246_m1
SLIT1	Hs00171488_m1
VIM	Hs05024057_m1
GLUL	Hs01013055_g1
AQP4	Hs00242342_m1