Figure 1C

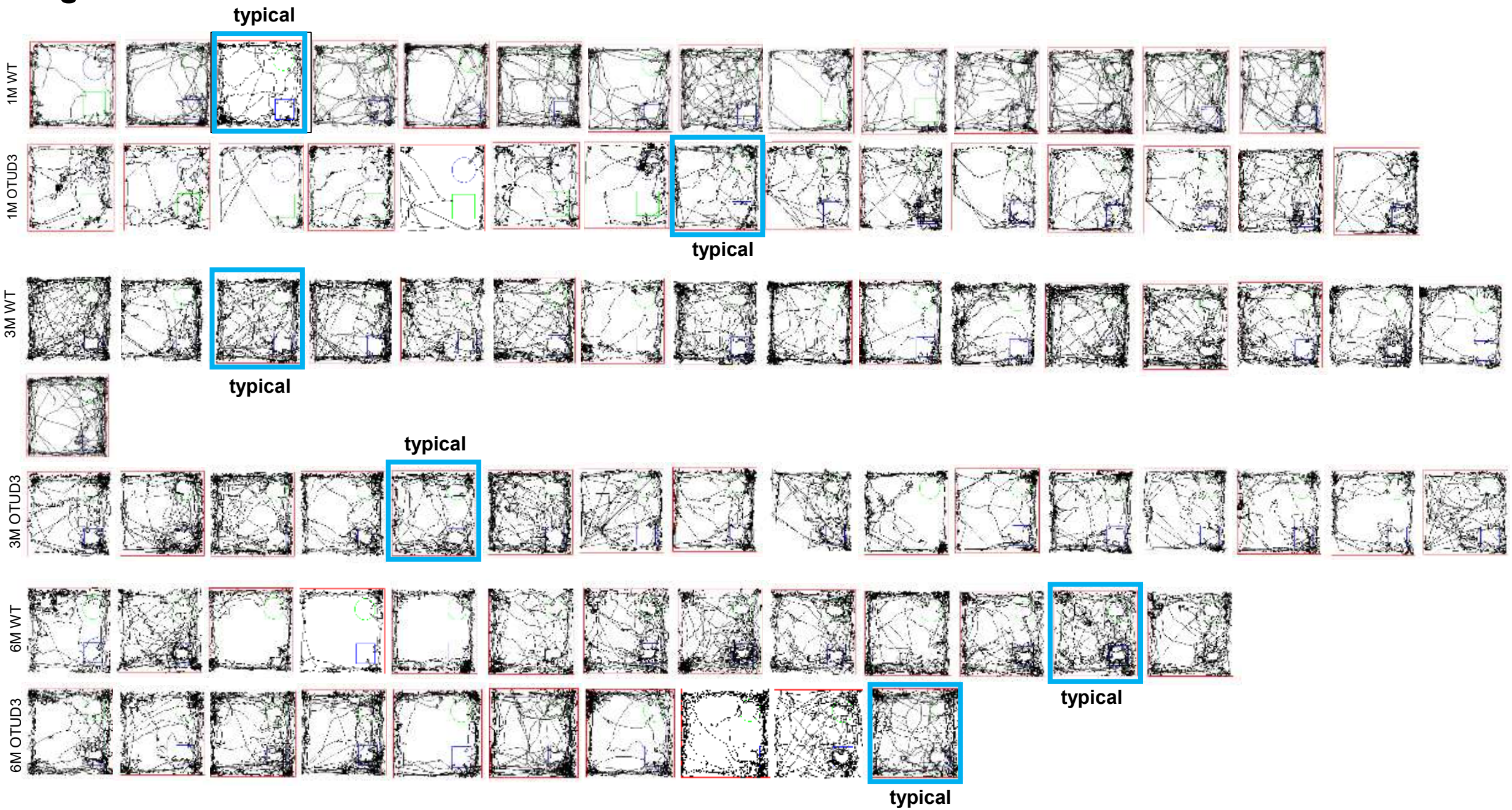

typical
1M WT
1M OTUD3
typical
3M WT
typical
typical
3M OTUD3
6M WT
typical
6M OTUD3
typical

Figure 1E

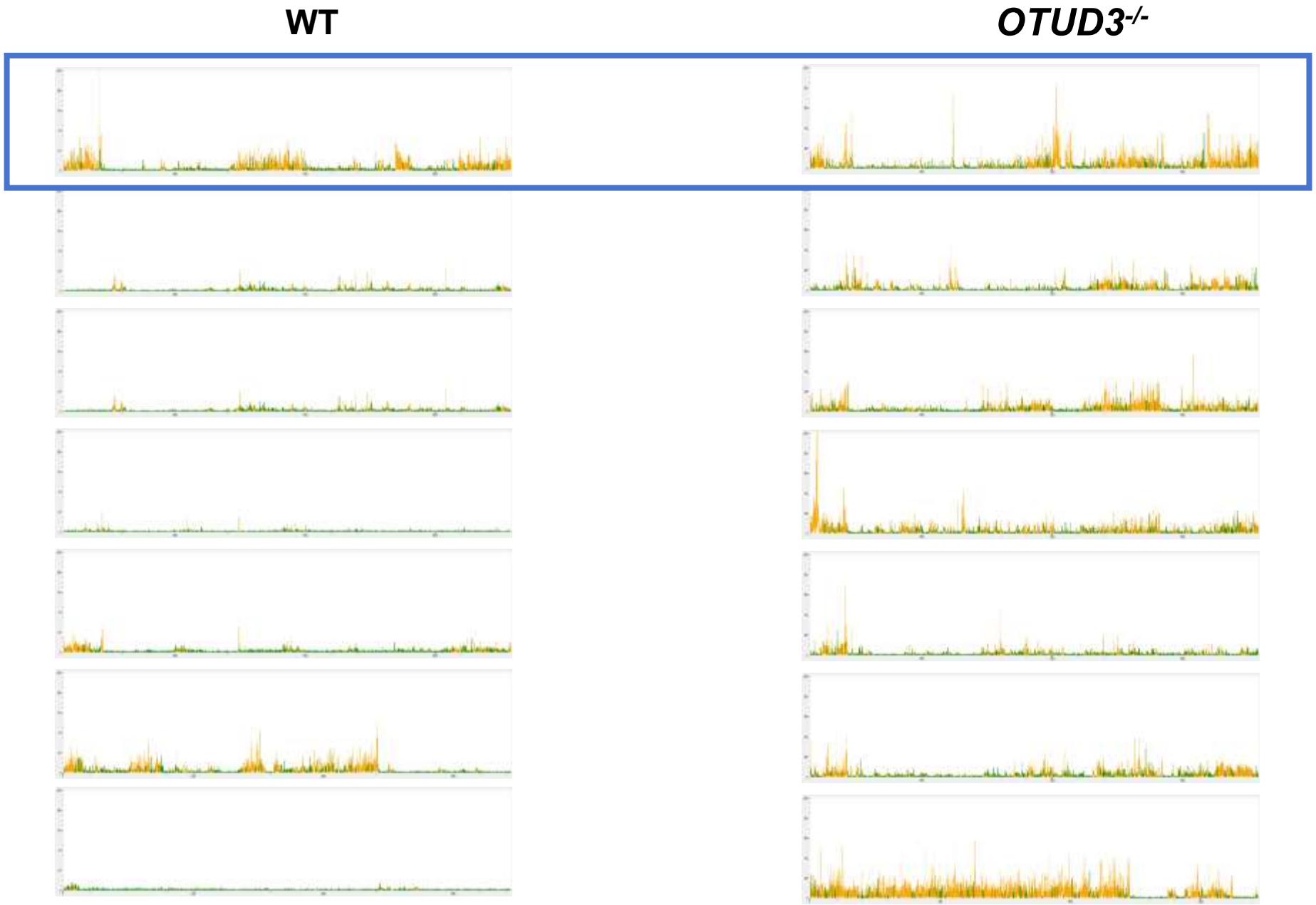


Figure 1J

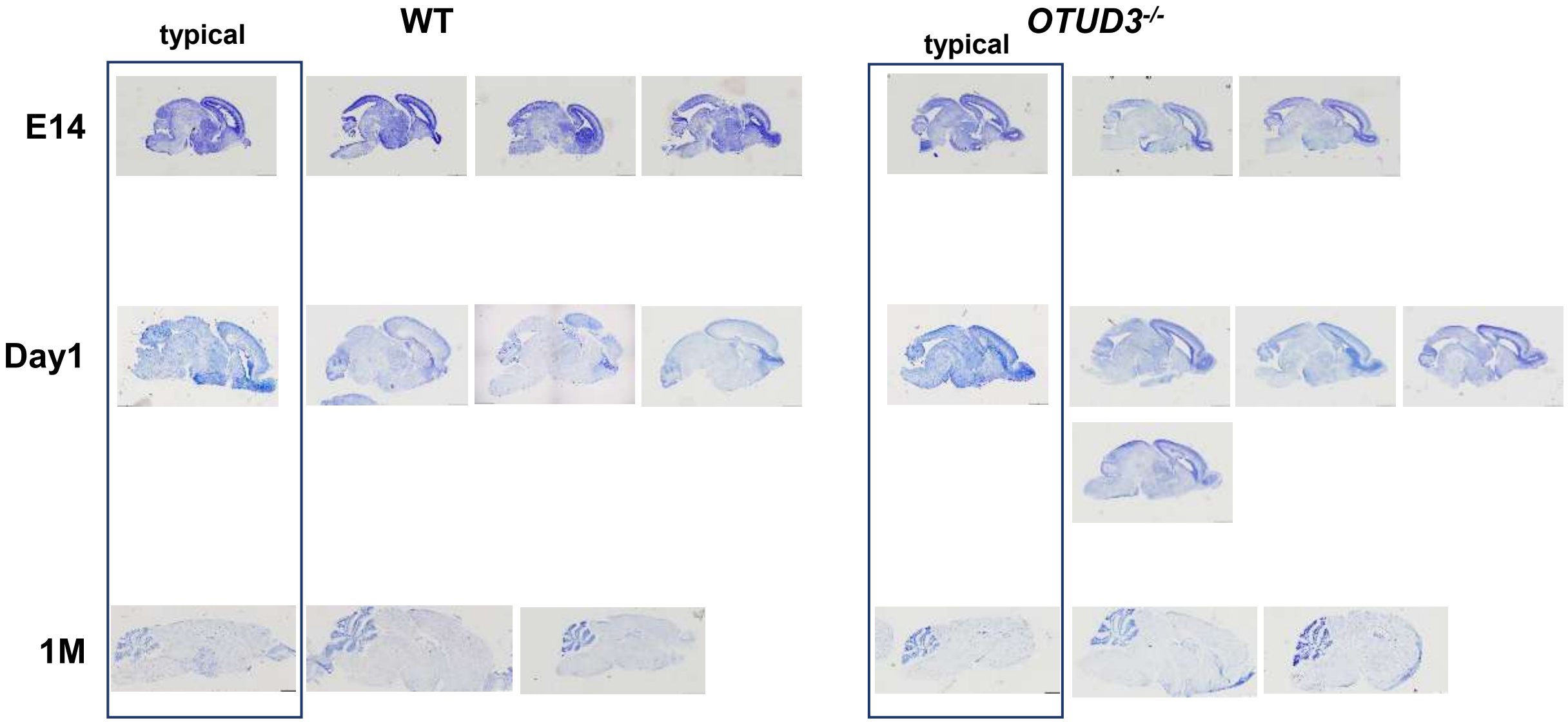


Figure 2D ki67

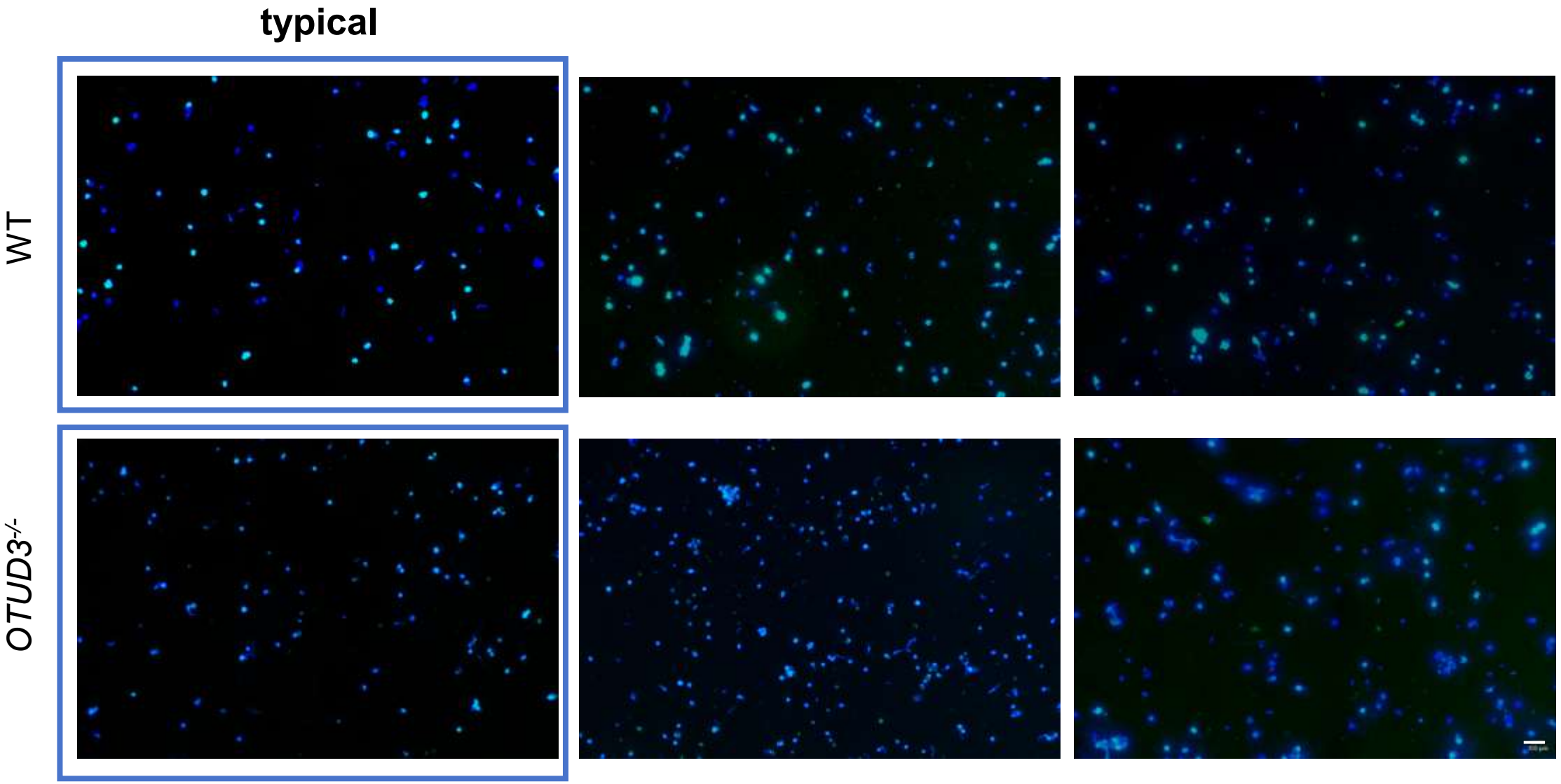


Figure 2L

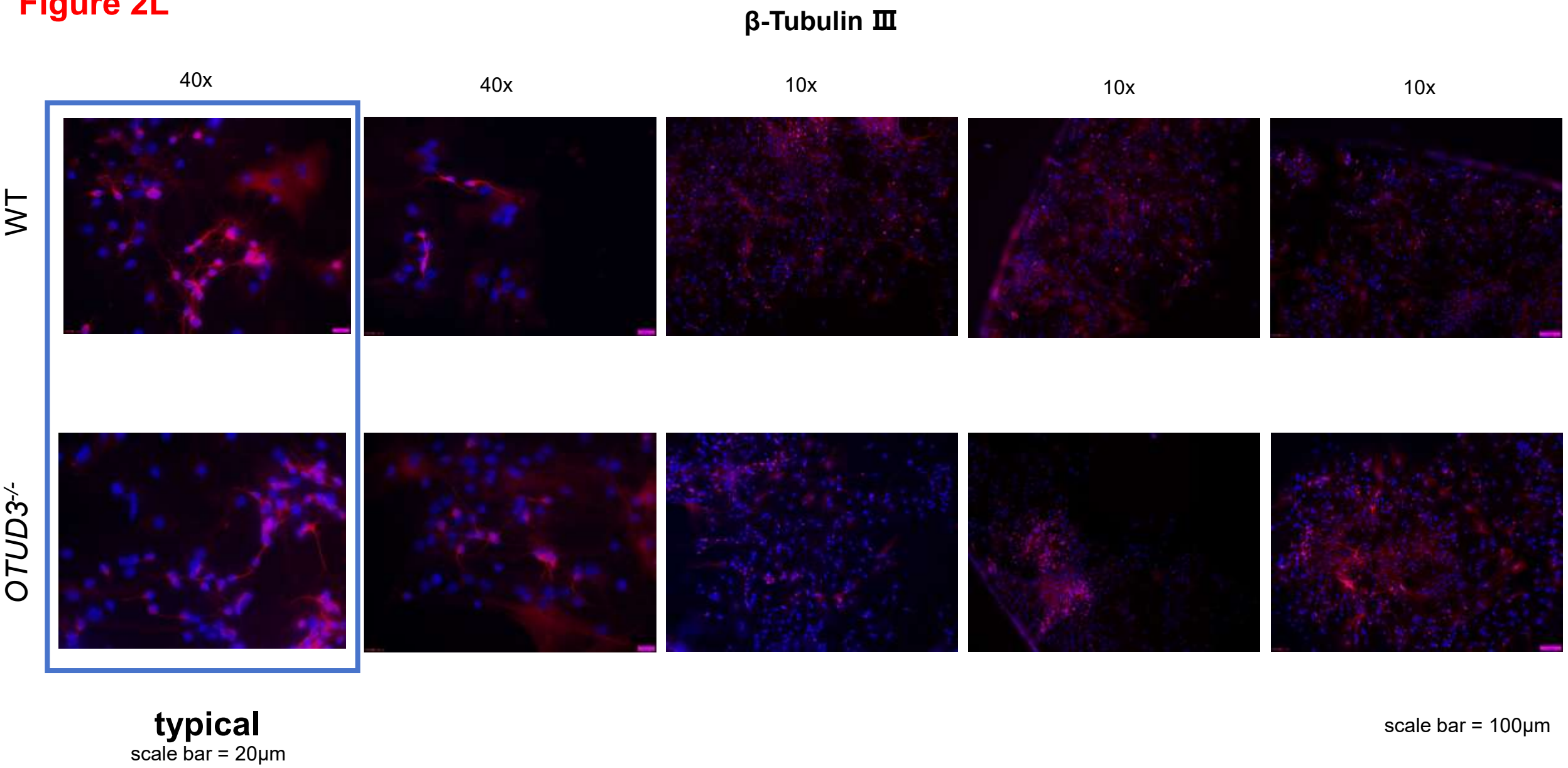

β-Tubulin Ⅲ
40x
40x
10x
10x
10x
WT
OTUD3-/-
typical
scale bar = 20μm
scale bar = 100μm

Figure 2N

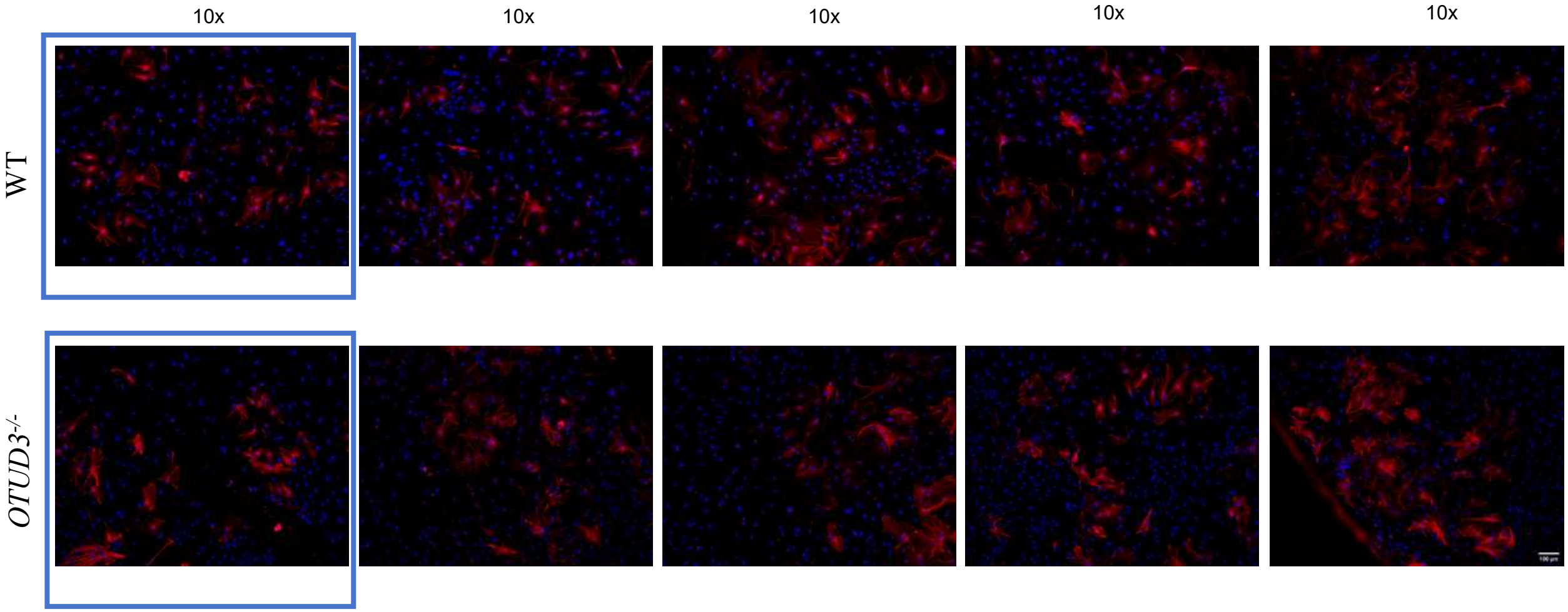


Figure 2P

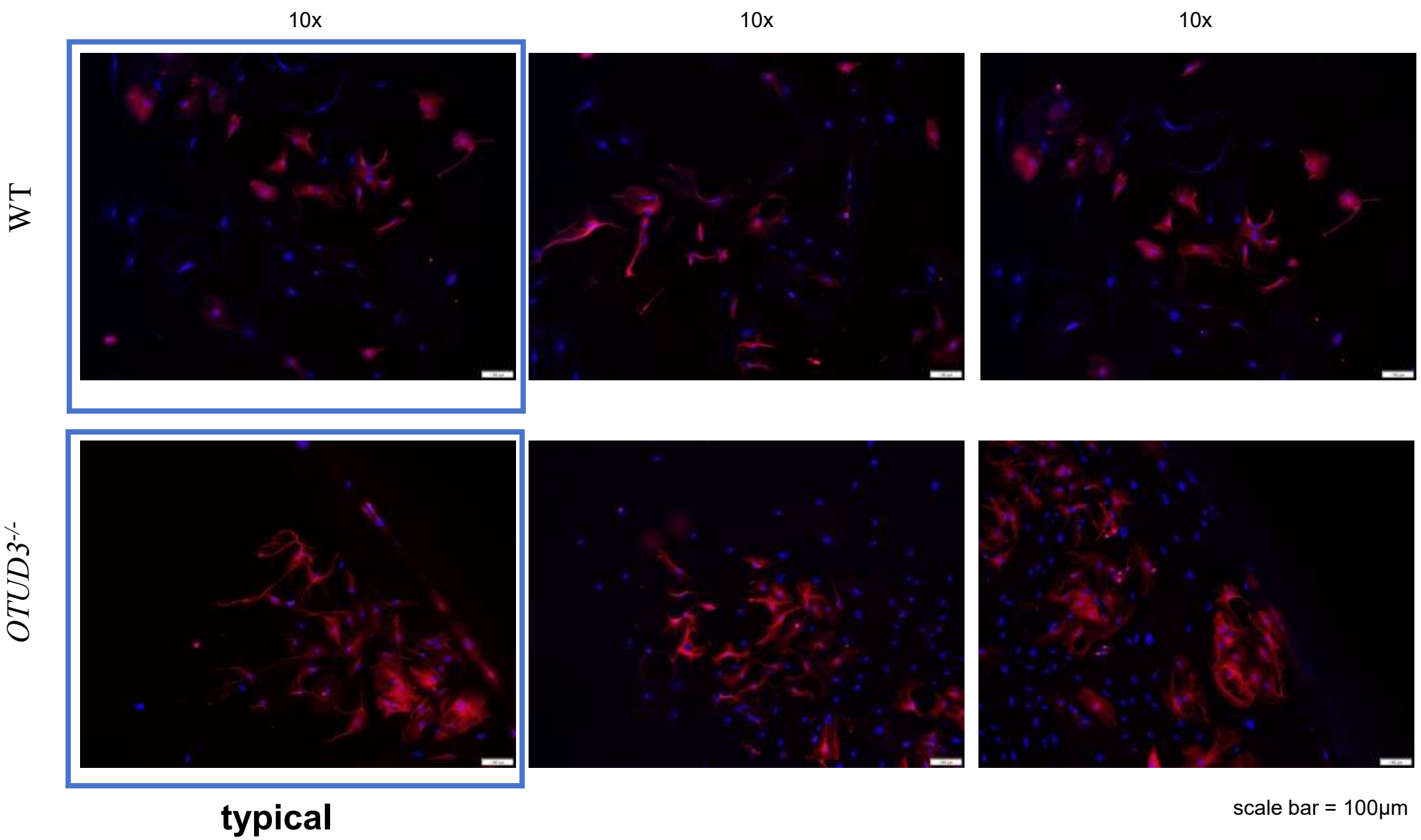


Figure 2A neurosphere diameter

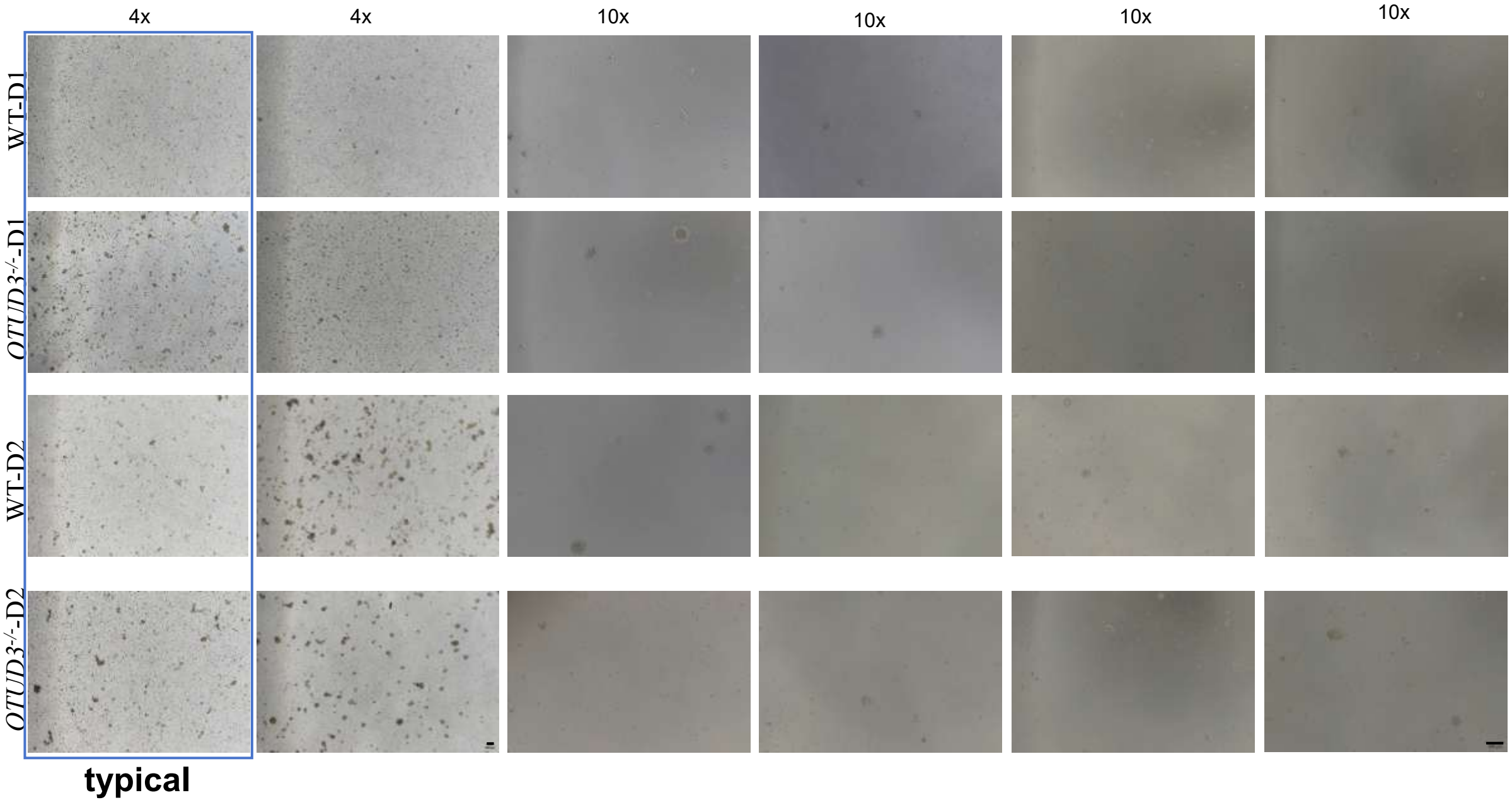


Figure 2A neurosphere diameter

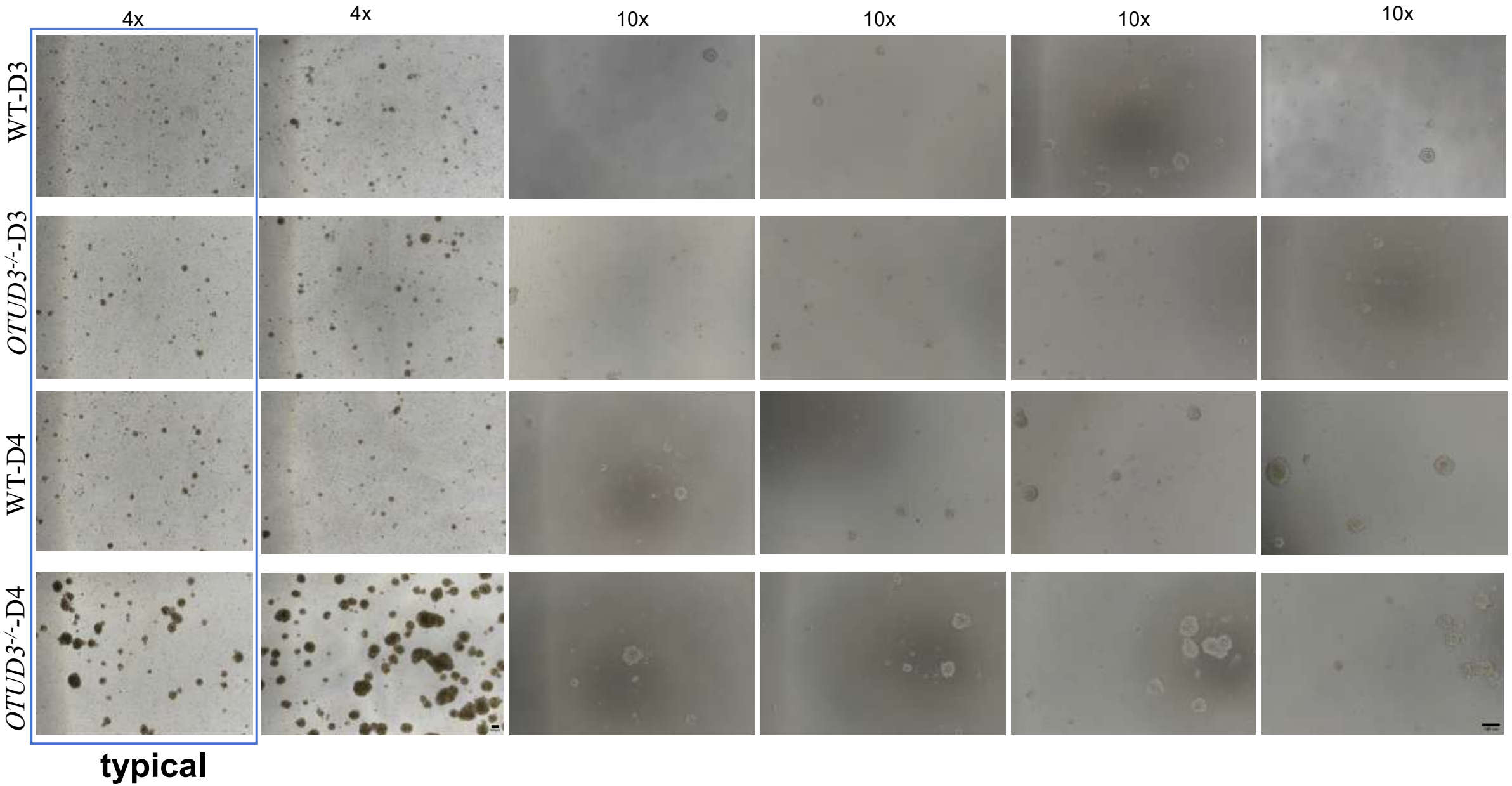
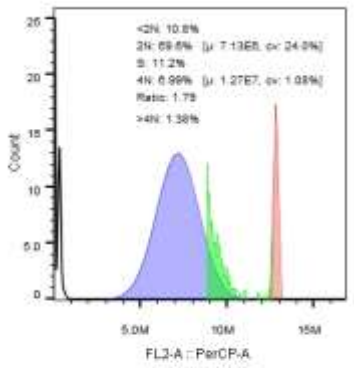
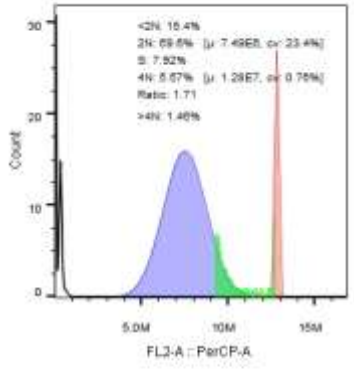


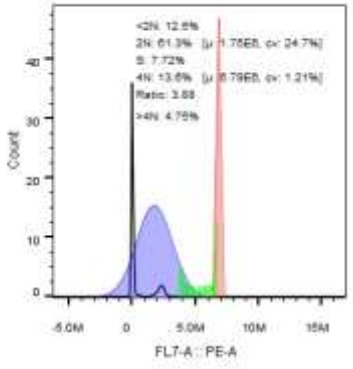
Figure 2F

typical

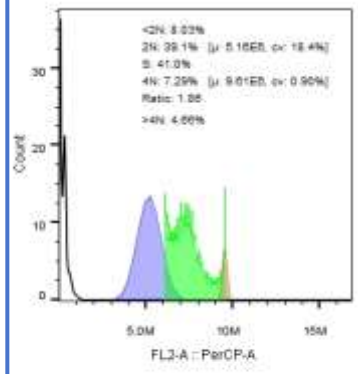
WT

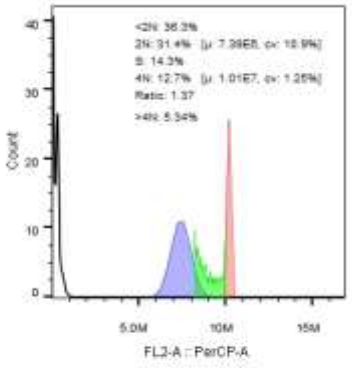






OTUD3$^{-/-}$





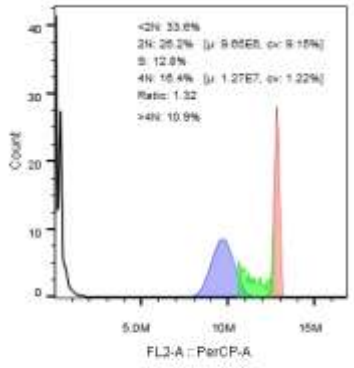
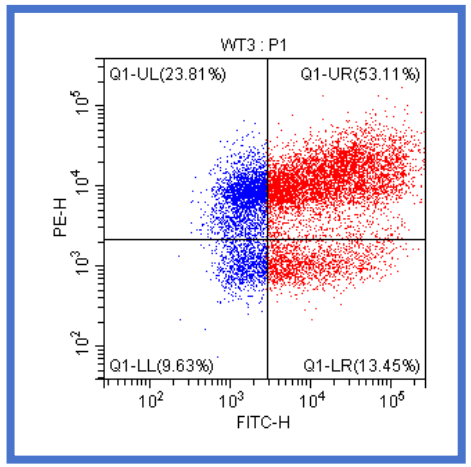
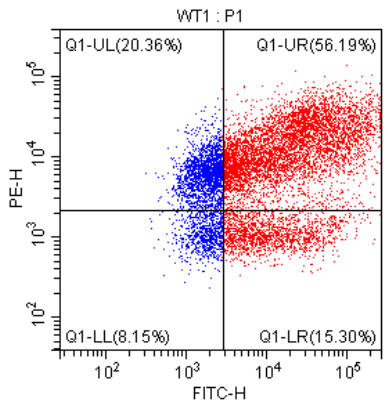
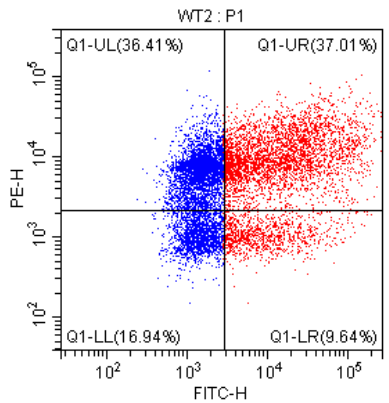
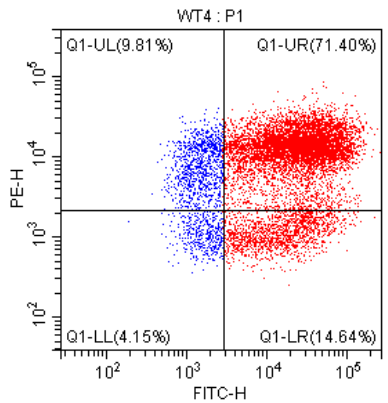


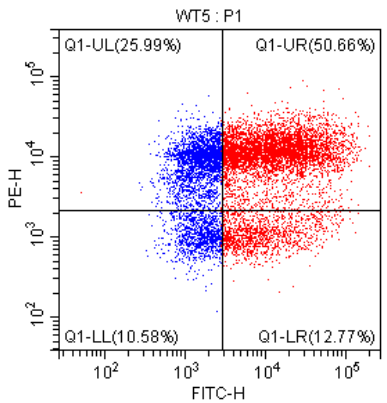
Figure 2J

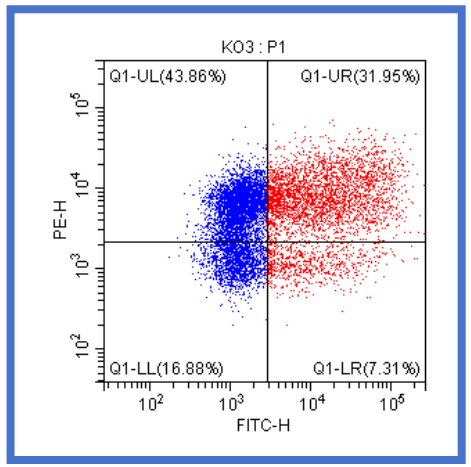




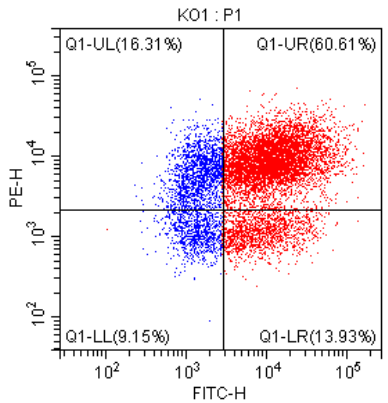


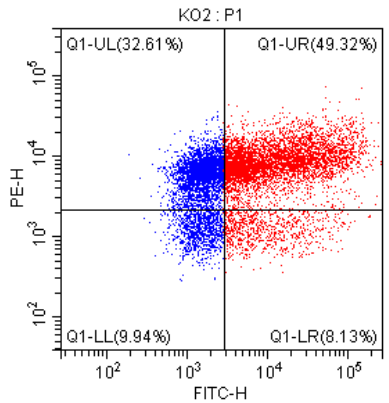


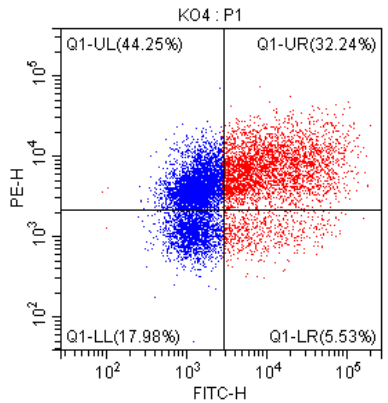




typical







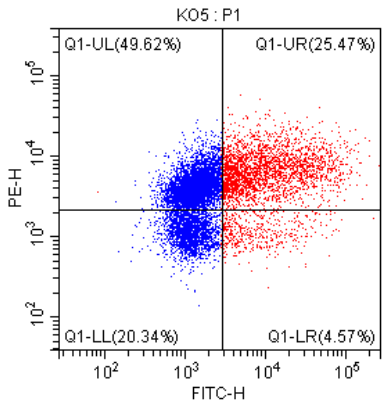
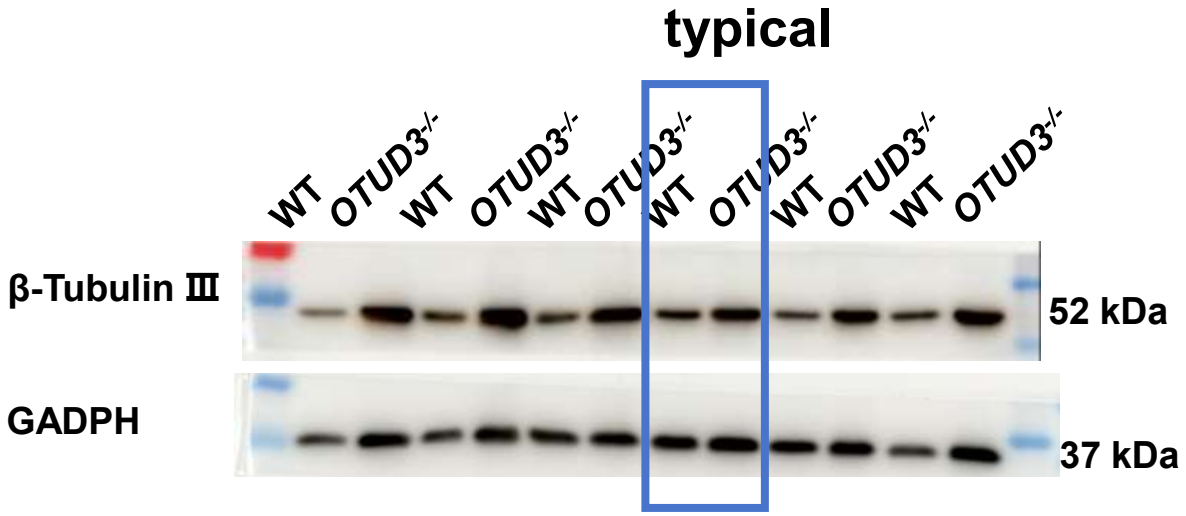
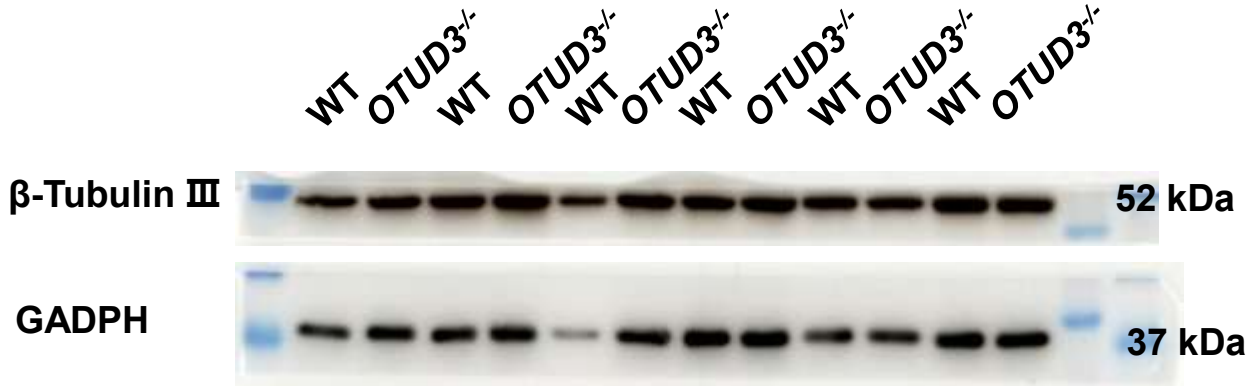


Figure 2R



Repetition-1

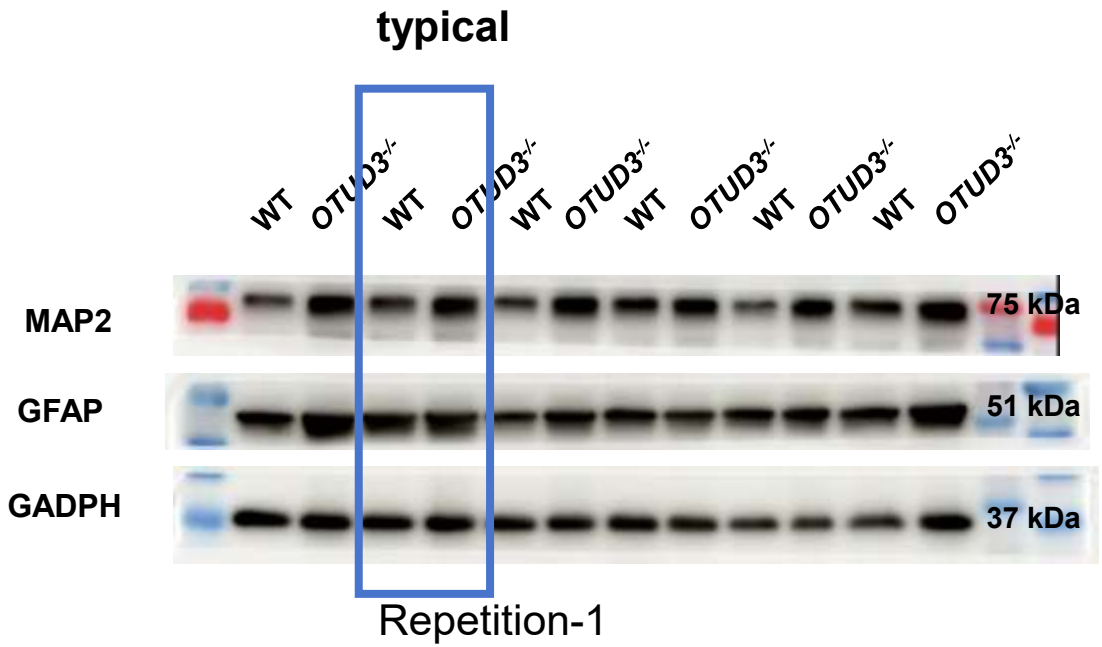


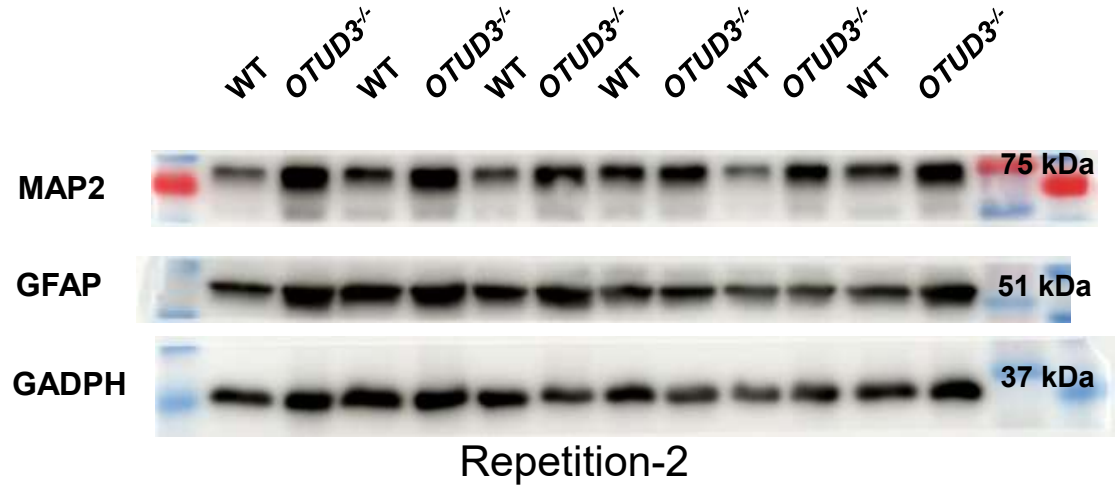
Repetition-2

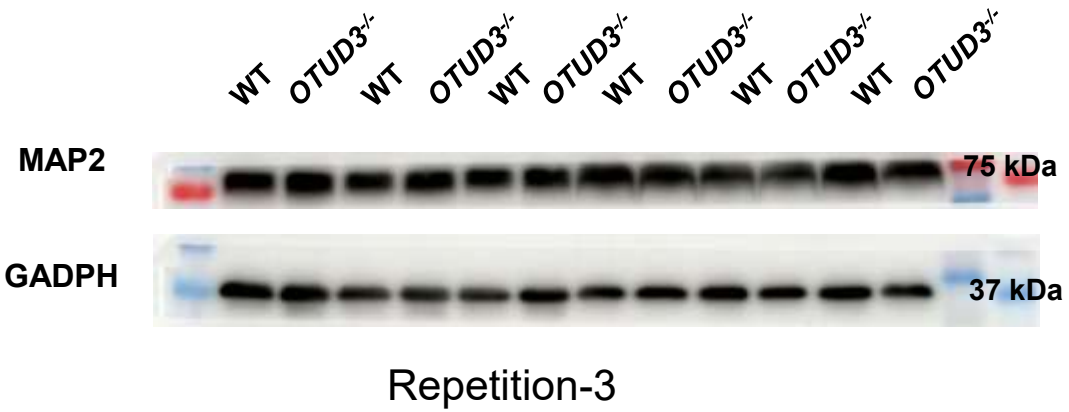


Repetition-3

Figure 2R


typical
WT
OTUD3-/-
MAP2
GFAP
GADPH
75 kDa
51 kDa
37 kDa
Repetition-1


WT
OTUD3-/-
MAP2
GFAP
GADPH
75 kDa
51 kDa
37 kDa
Repetition-2


WT
OTUD3-/-
MAP2
GADPH
75 kDa
37 kDa
Repetition-3

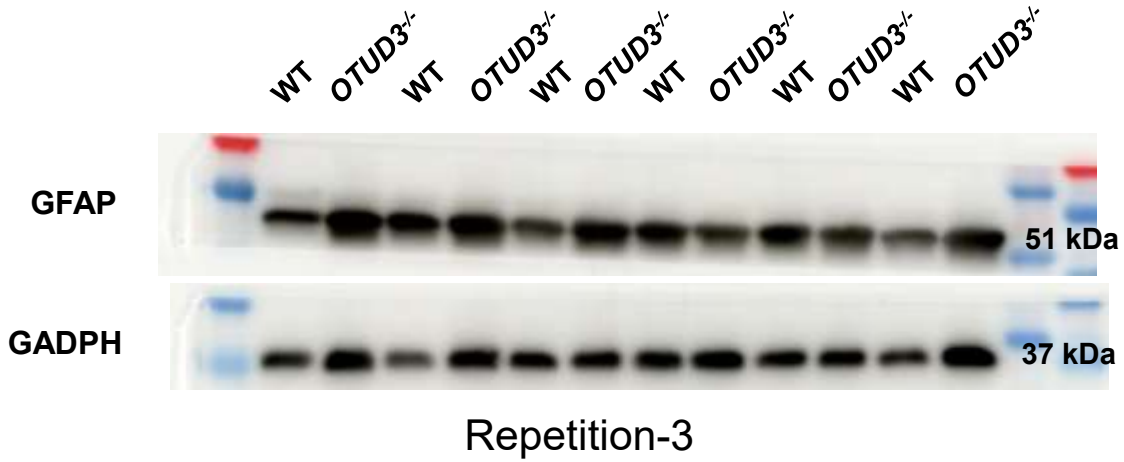
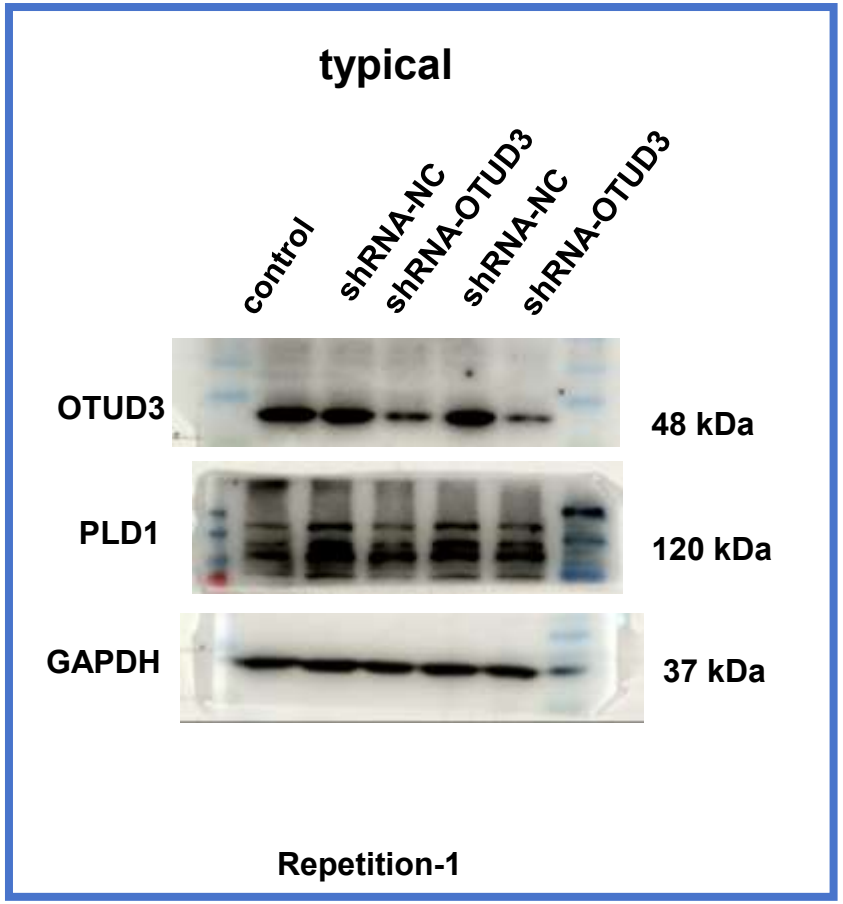

WT
OTUD3-/-
GFAP
GADPH
51 kDa
37 kDa
Repetition-3

Figure 5A


typical
control
shRNA-NC
shRNA-OTUD3
shRNA-NC
shRNA-OTUD3
OTUD3
48 kDa
PLD1
120 kDa
GAPDH
37 kDa
Repetition-1

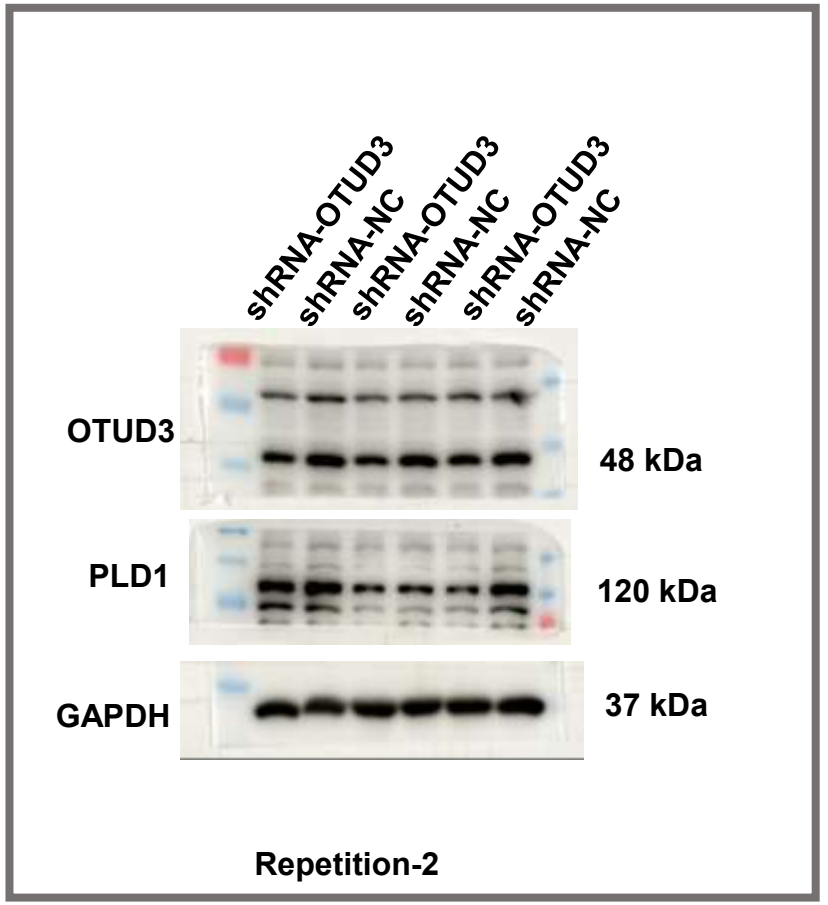

shRNA-OTUD3
shRNA-NC
shRNA-OTUD3
shRNA-NC
shRNA-OTUD3
shRNA-NC
OTUD3
48 kDa
PLD1
120 kDa
GAPDH
37 kDa
Repetition-2

Figure 5E

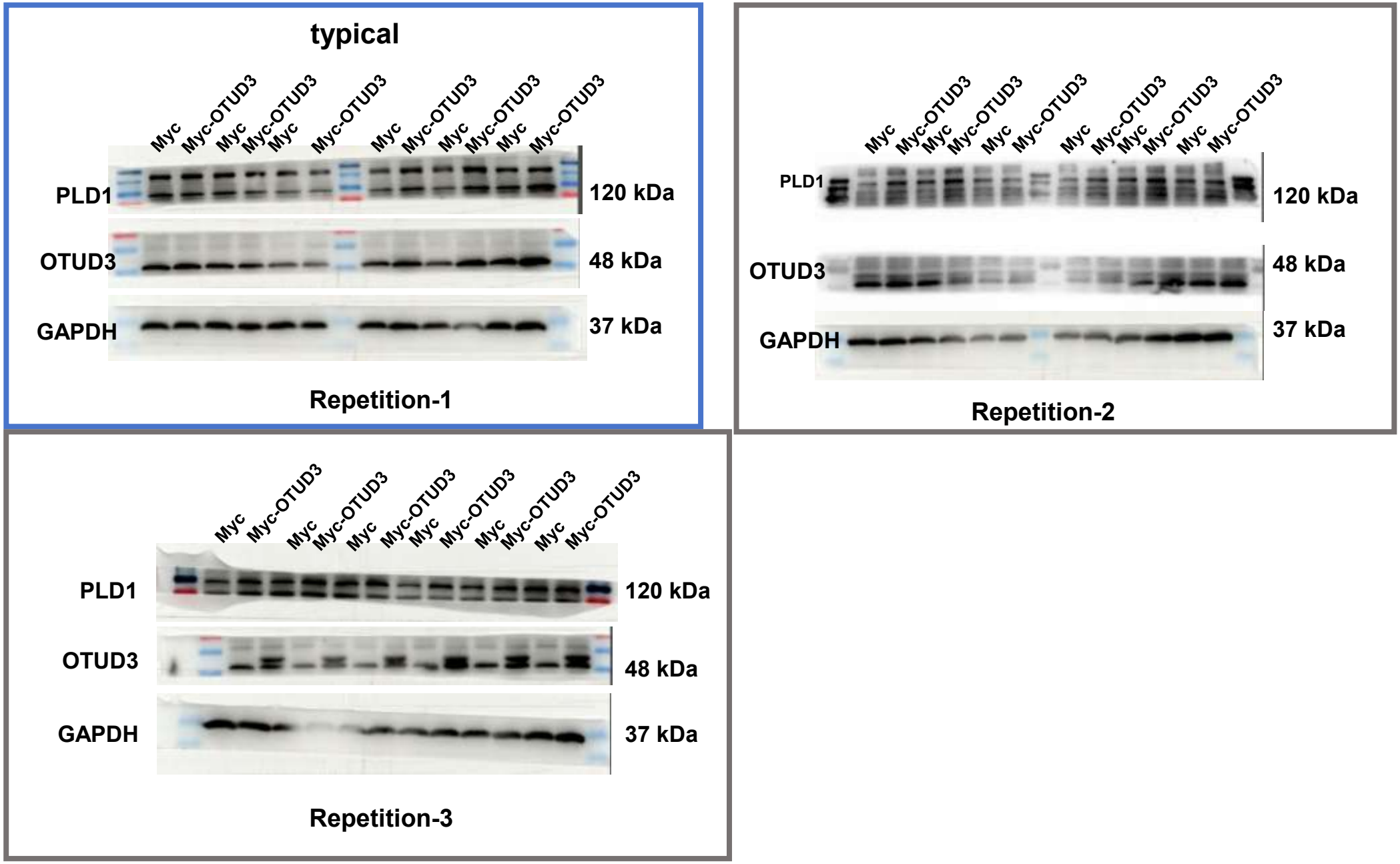
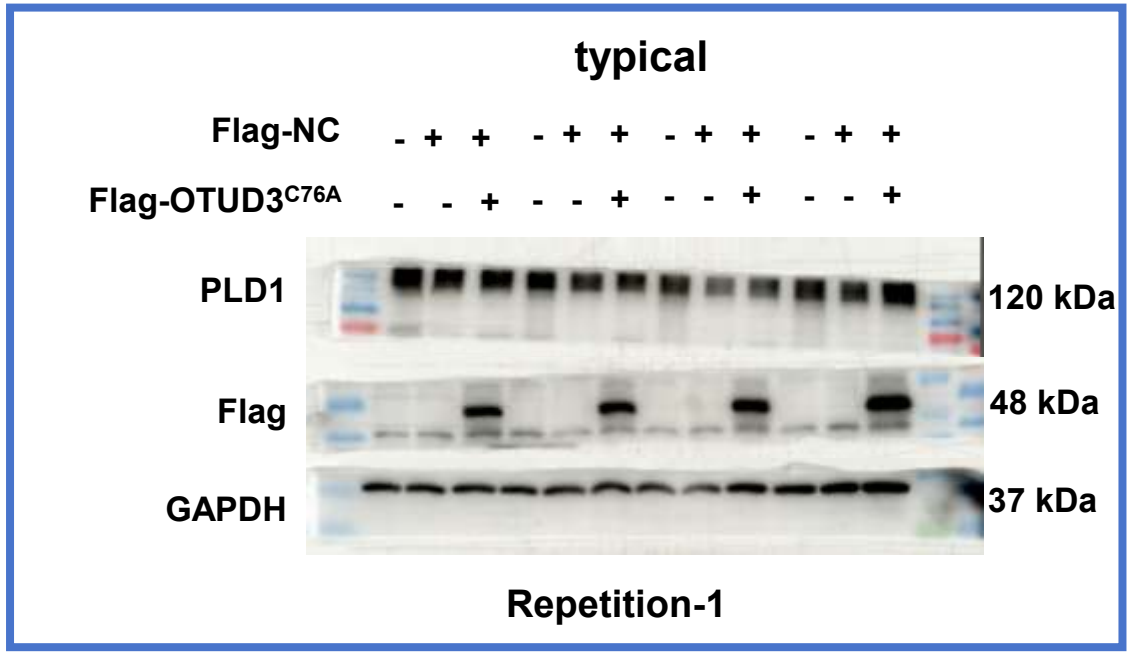
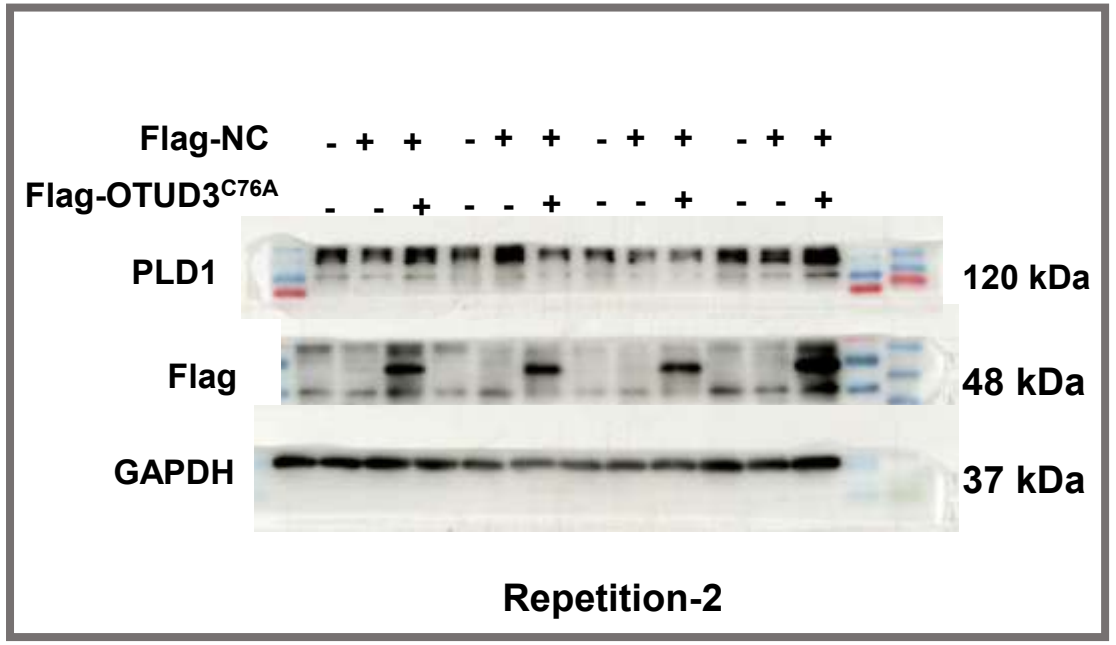

typical
Myc
Myc-OTUD3
PLD1
OTUD3
GAPDH
120 kDa
48 kDa
37 kDa
Repetition-1
Repetition-2
Repetition-3

Figure 5l


typical
Flag-NC - + + - + + - + + - + +
Flag-OTUD3C76A - - + - - + - - + - - +
PLD1
120 kDa
Flag
48 kDa
GAPDH
37 kDa
Repetition-1


Flag-NC - + + - + + - + + - + +
Flag-OTUD3C76A - - + - - + - - + - - +
PLD1
120 kDa
Flag
48 kDa
GAPDH
37 kDa
Repetition-2

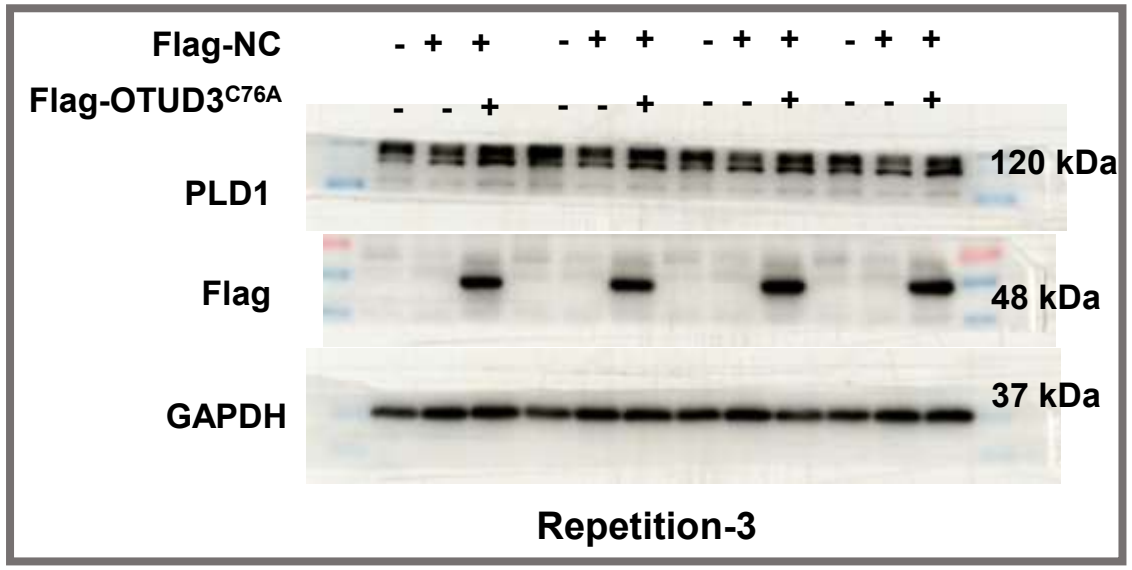

Flag-NC - + + - + + - + + - + +
Flag-OTUD3C76A - - + - - + - - + - - +
PLD1
120 kDa
Flag
48 kDa
GAPDH
37 kDa
Repetition-3

Figure 5K

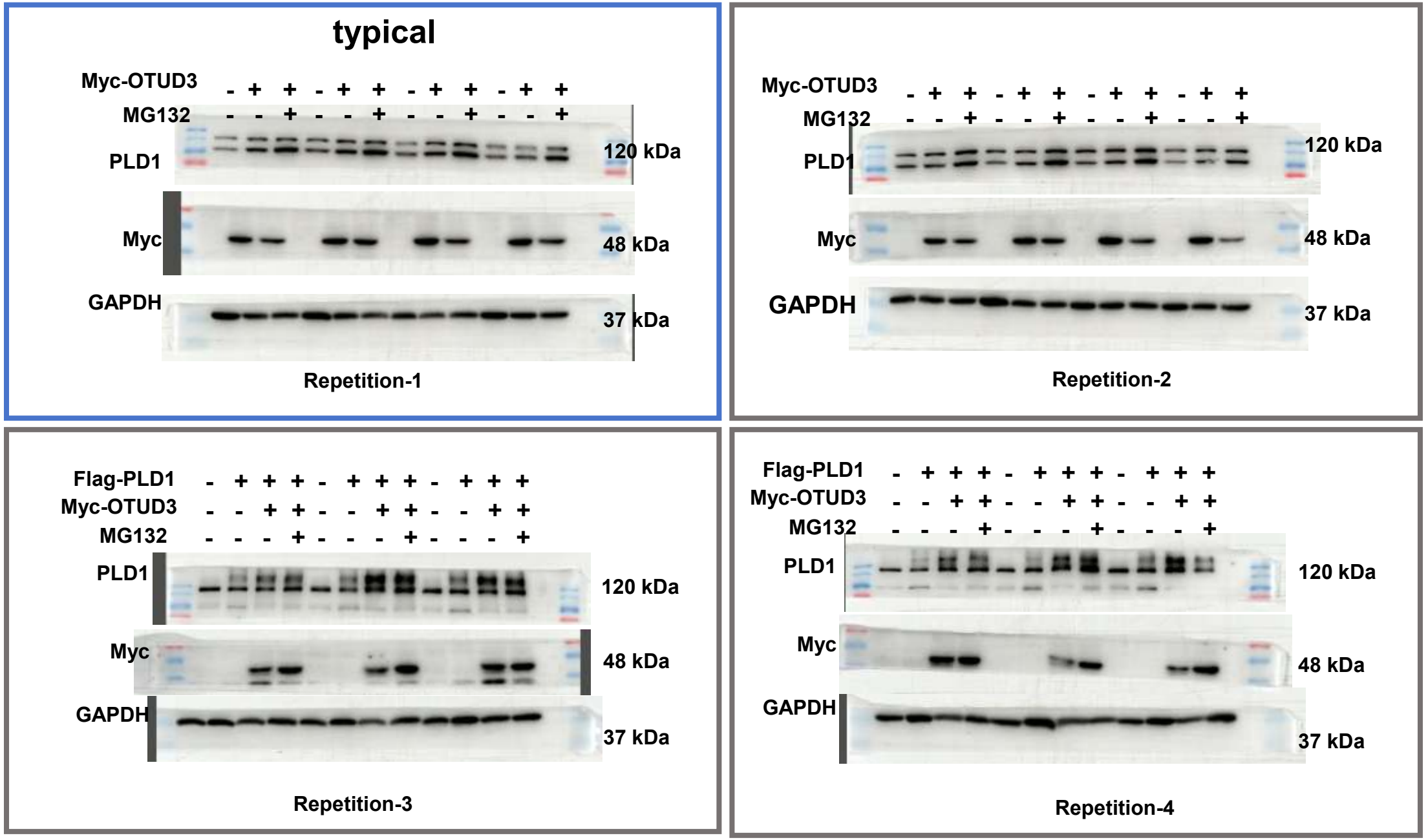
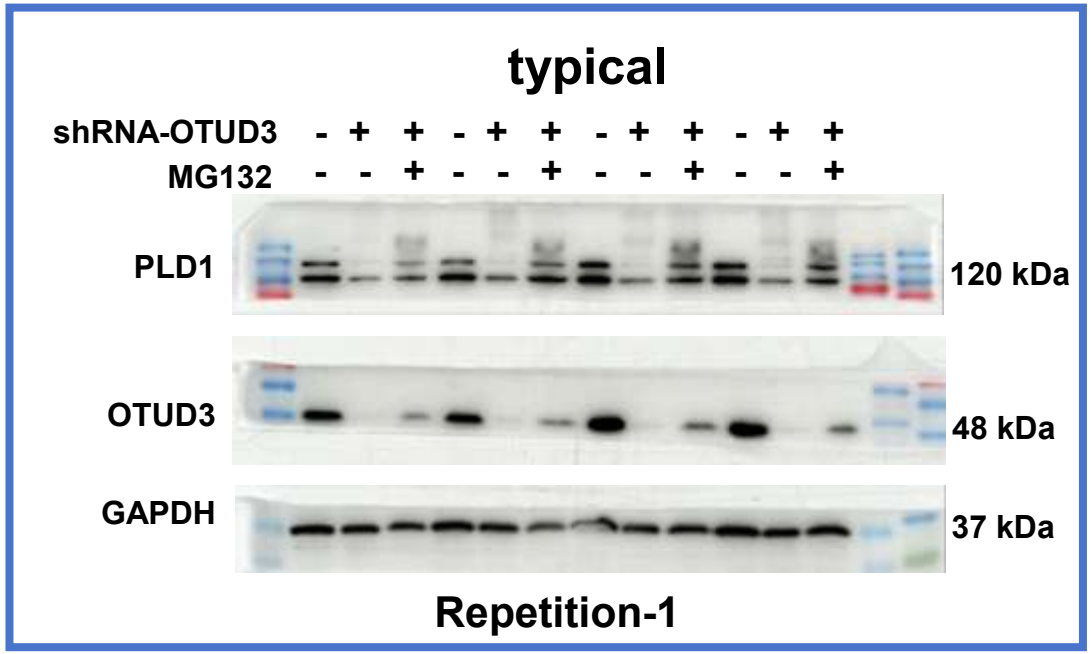
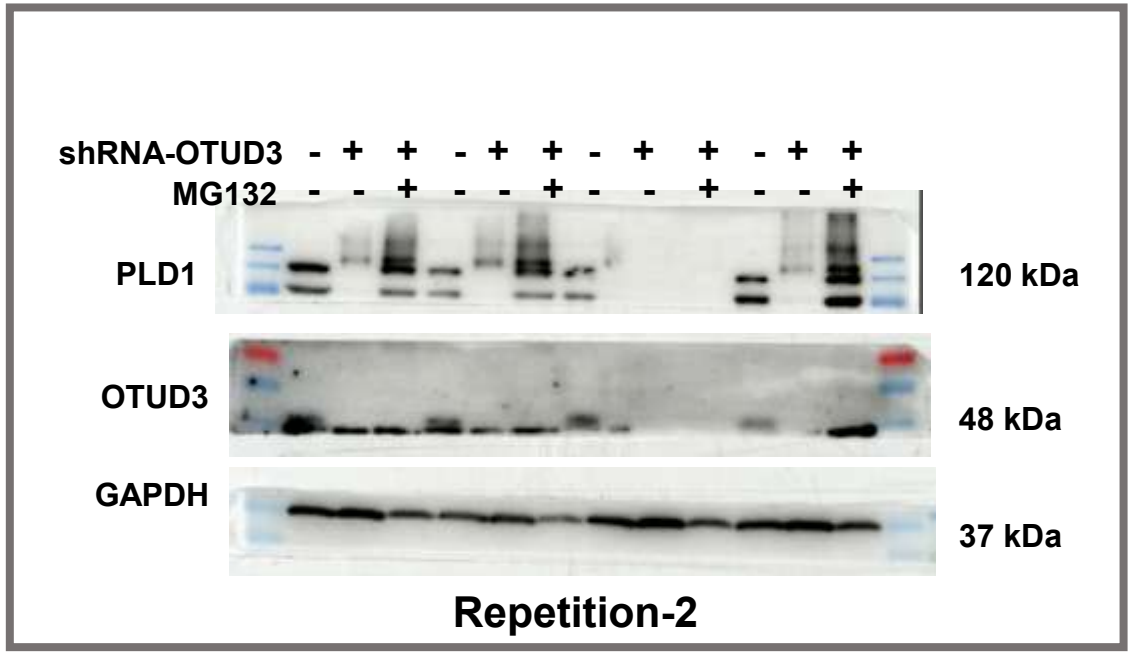

typical
Myc-OTUD3 - + + - + + - + + - + +
MG132 - - + - - + - - + - - +
PLD1
120 kDa
Myc
48 kDa
GAPDH
37 kDa
Repetition-1
Myc-OTUD3 - + + - + + - + + - + +
MG132 - - + - - + - - + - - +
PLD1
120 kDa
Myc
48 kDa
GAPDH
37 kDa
Repetition-2
Flag-PLD1 - + + + - + + + - + + +
Myc-OTUD3 - - + + - - + + - - + +
MG132 - - - + - - - + - - - +
PLD1
120 kDa
Myc
48 kDa
GAPDH
37 kDa
Repetition-3
Flag-PLD1 - + + + - + + + - + + +
Myc-OTUD3 - - + + - - + + - - + +
MG132 - - - + - - - + - - - +
PLD1
120 kDa
Myc
48 kDa
GAPDH
37 kDa
Repetition-4

Figure 5M


typical
shRNA-OTUD3 - + + - + + - + + - + +
MG132 - - + - - + - - + - - +
PLD1
120 kDa
OTUD3
48 kDa
GAPDH
37 kDa
Repetition-1


shRNA-OTUD3 - + + - + + - + + - + +
MG132 - - + - - + - - + - - +
PLD1
120 kDa
OTUD3
48 kDa
GAPDH
37 kDa
Repetition-2

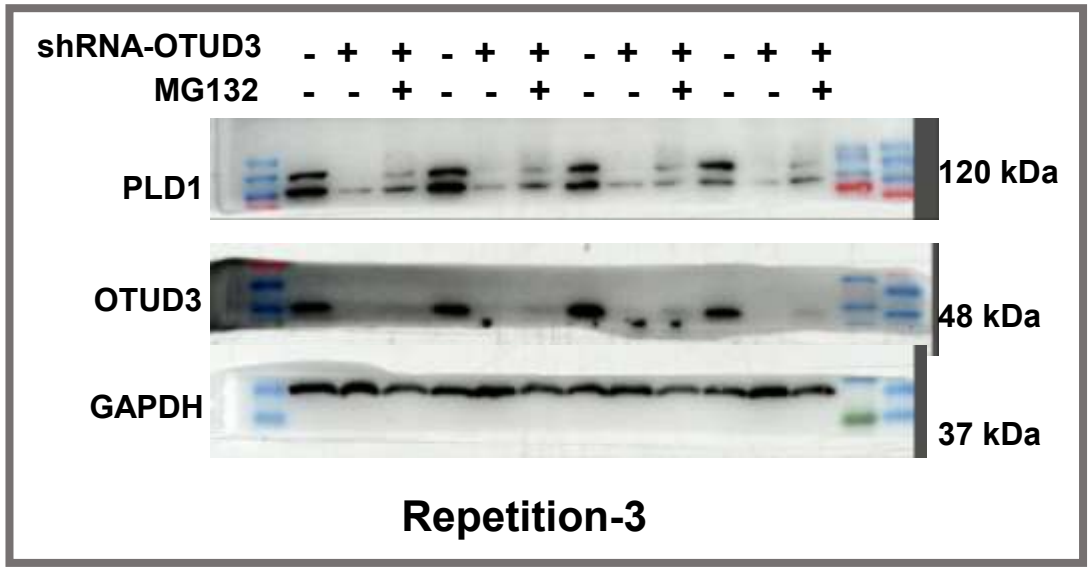
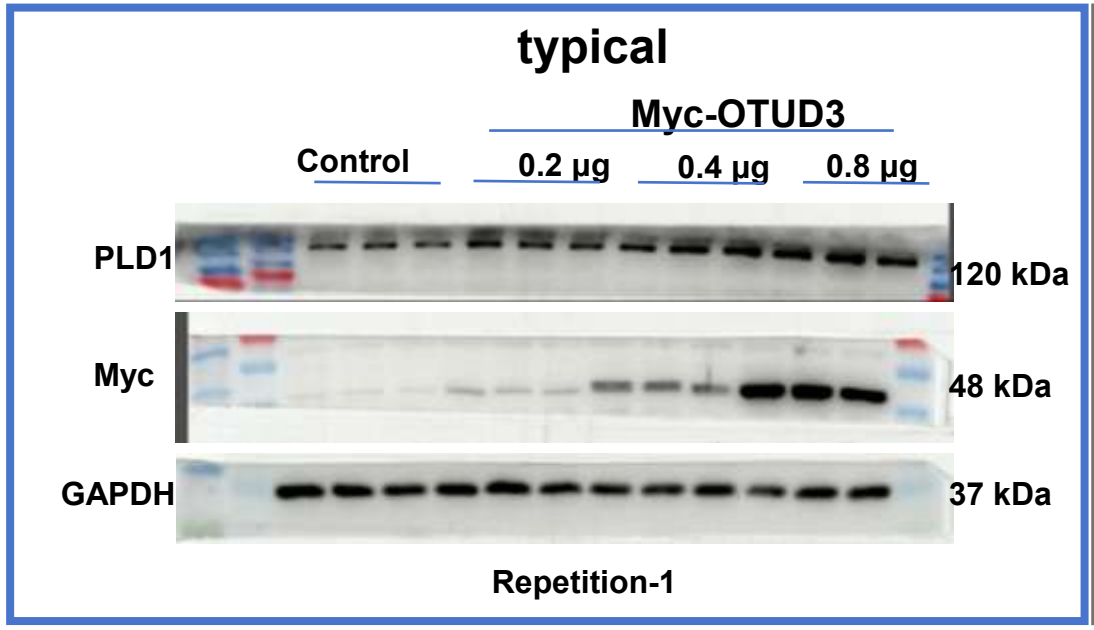
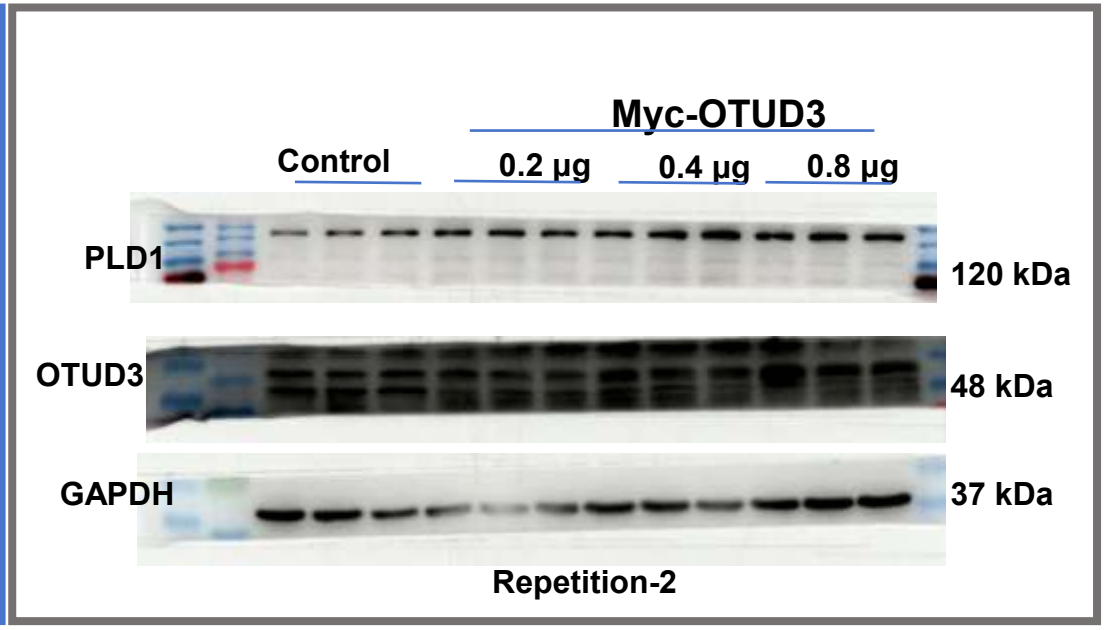

shRNA-OTUD3 - + + - + + - + + - + +
MG132 - - + - - + - - + - - +
PLD1
120 kDa
OTUD3
48 kDa
GAPDH
37 kDa
Repetition-3

Figure 5O


typical
Myc-OTUD3
Control
0.2 μg
0.4 μg
0.8 μg
PLD1
120 kDa
Myc
48 kDa
GAPDH
37 kDa
Repetition-1


Myc-OTUD3
Control
0.2 μg
0.4 μg
0.8 μg
PLD1
120 kDa
OTUD3
48 kDa
GAPDH
37 kDa
Repetition-2

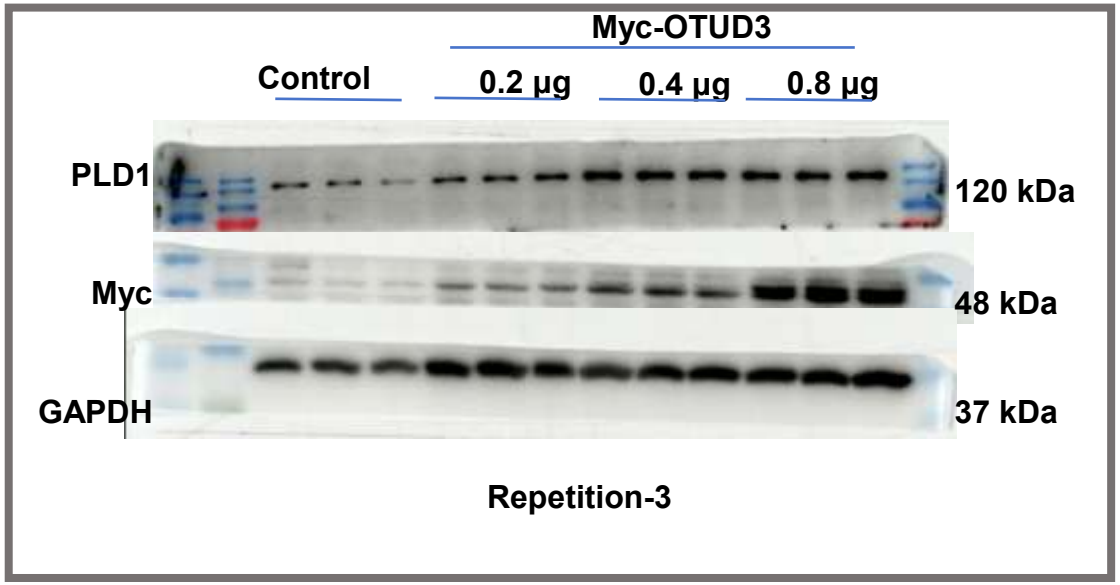

Myc-OTUD3
Control
0.2 μg
0.4 μg
0.8 μg
PLD1
120 kDa
Myc
48 kDa
GAPDH
37 kDa
Repetition-3

Figure 5Q

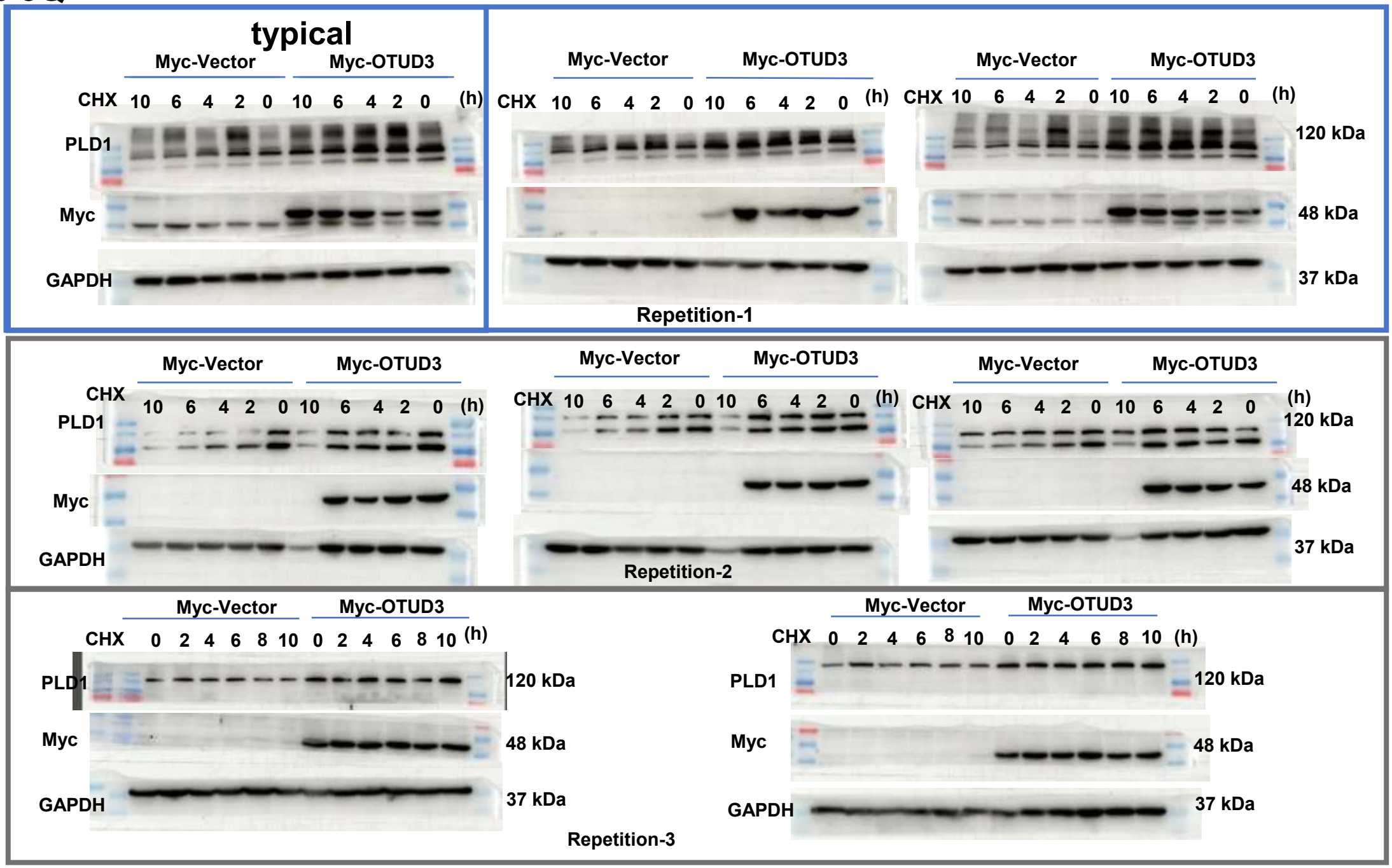

typical
Myc-Vector
Myc-OTUD3
CHX 10 6 4 2 0 10 6 4 2 0 (h)
PLD1
Myc
GAPDH
120 kDa
48 kDa
37 kDa
Repetition-1
Repetition-2
CHX 0 2 4 6 8 10 0 2 4 6 8 10 (h)
Repetition-3

Figure 5Q

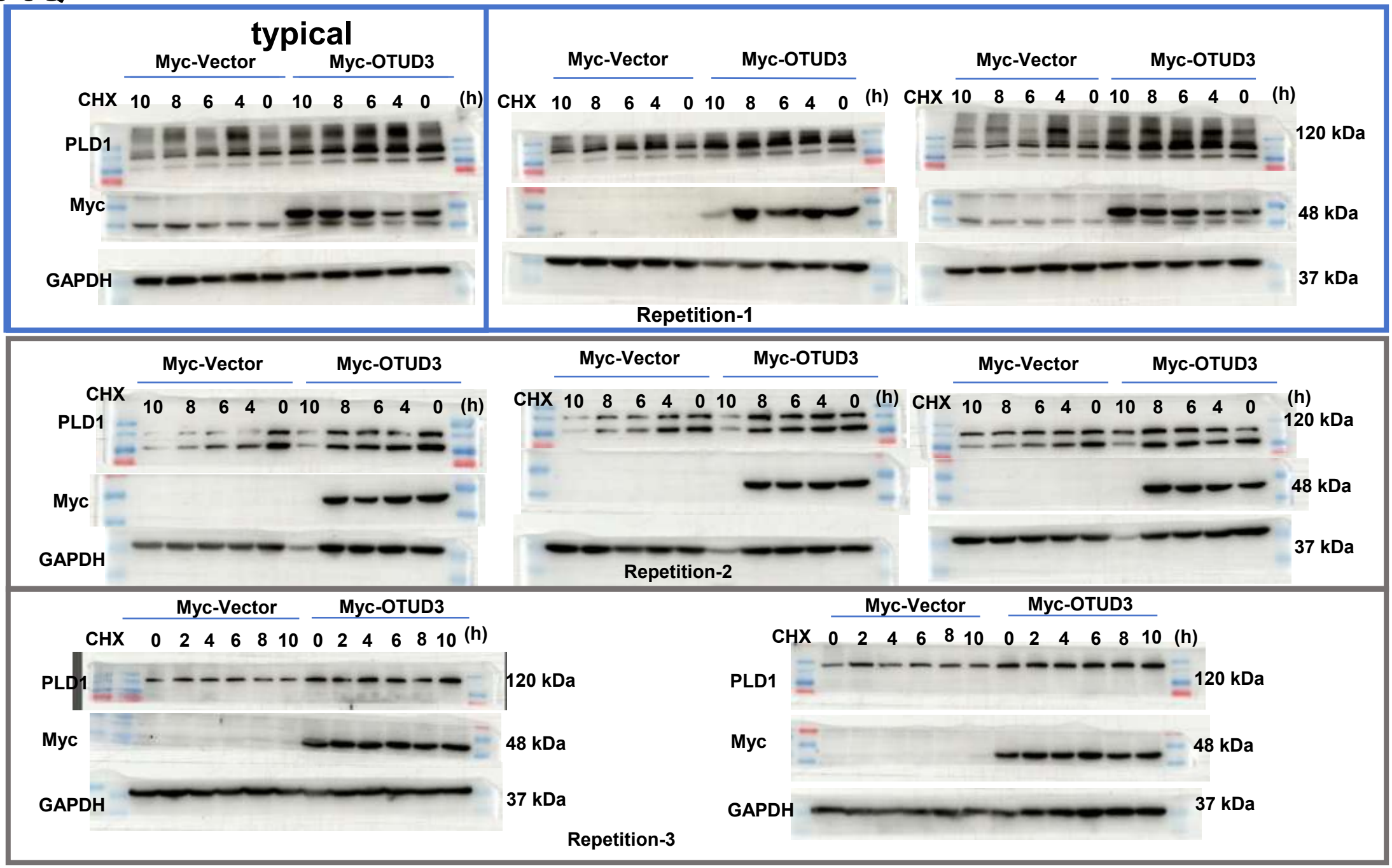

typical
Myc-Vector
Myc-OTUD3
CHX 10 8 6 4 0 10 8 6 4 0 (h)
PLD1
Myc
GAPDH
120 kDa
48 kDa
37 kDa
Repetition-1
Repetition-2
CHX 0 2 4 6 8 10 0 2 4 6 8 10 (h)
Repetition-3

Figure 5T

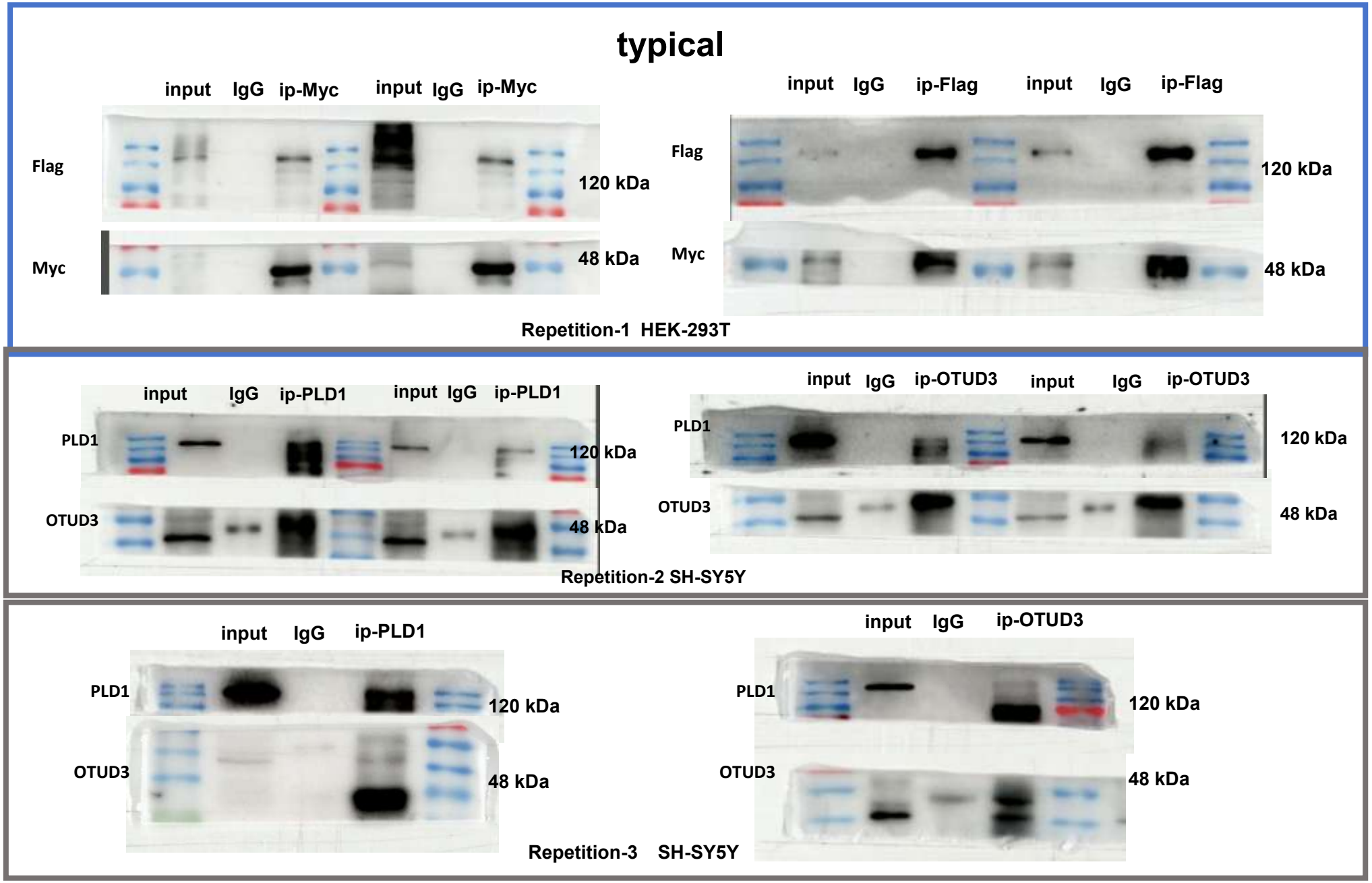
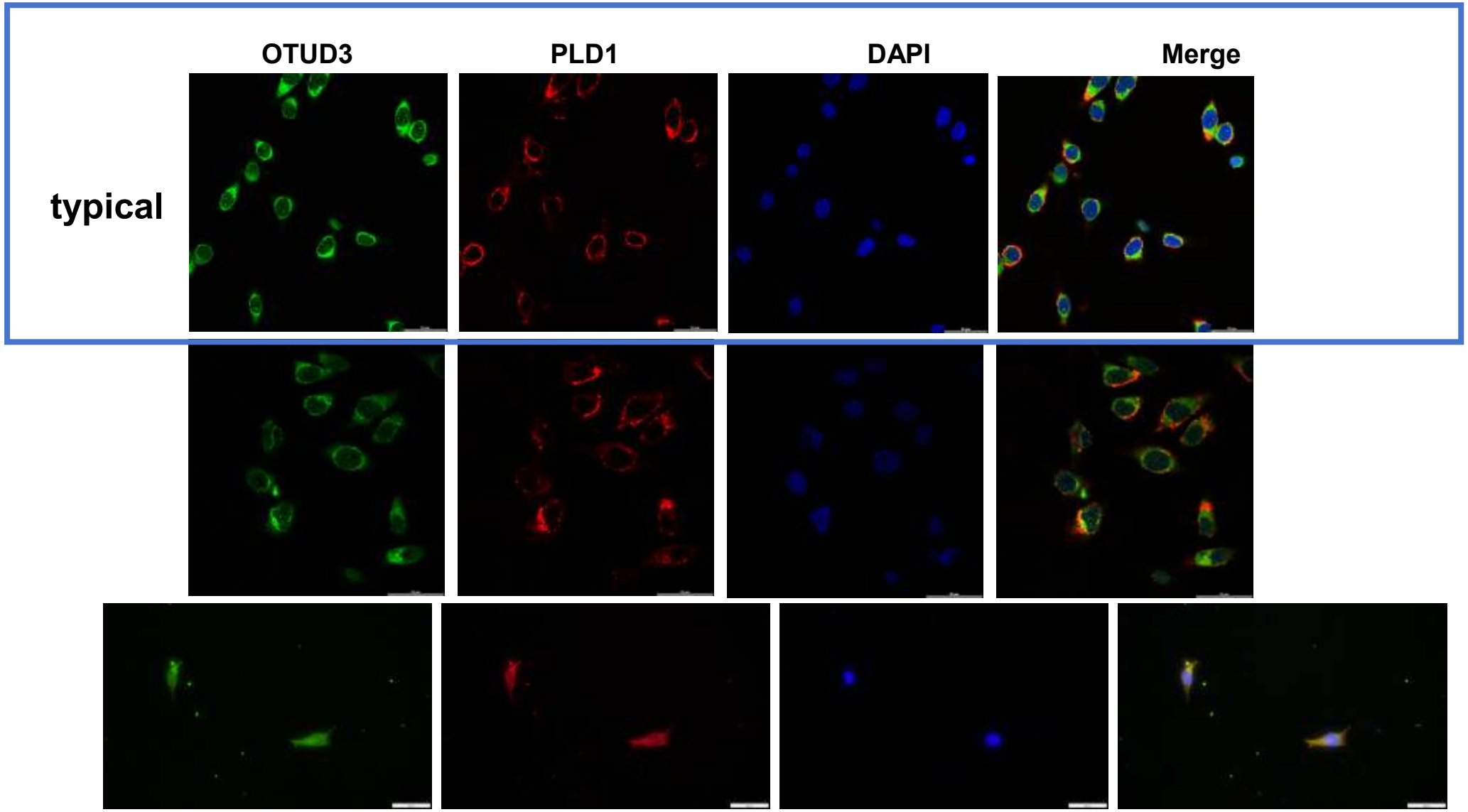

typical
input
IgG
ip-Myc
input
IgG
ip-Myc
Flag
120 kDa
Myc
48 kDa
input
IgG
ip-Flag
input
IgG
ip-Flag
Flag
120 kDa
Myc
48 kDa
Repetition-1 HEK-293T
input
IgG
ip-PLD1
input
IgG
ip-PLD1
PLD1
120 kDa
OTUD3
48 kDa
input
IgG
ip-OTUD3
input
IgG
ip-OTUD3
PLD1
120 kDa
OTUD3
48 kDa
Repetition-2 SH-SY5Y
input
IgG
ip-PLD1
PLD1
120 kDa
OTUD3
48 kDa
input
IgG
ip-OTUD3
PLD1
120 kDa
OTUD3
48 kDa
Repetition-3 SH-SY5Y

Figure 5S



scale bar = 40μm

Figure 5U

typical

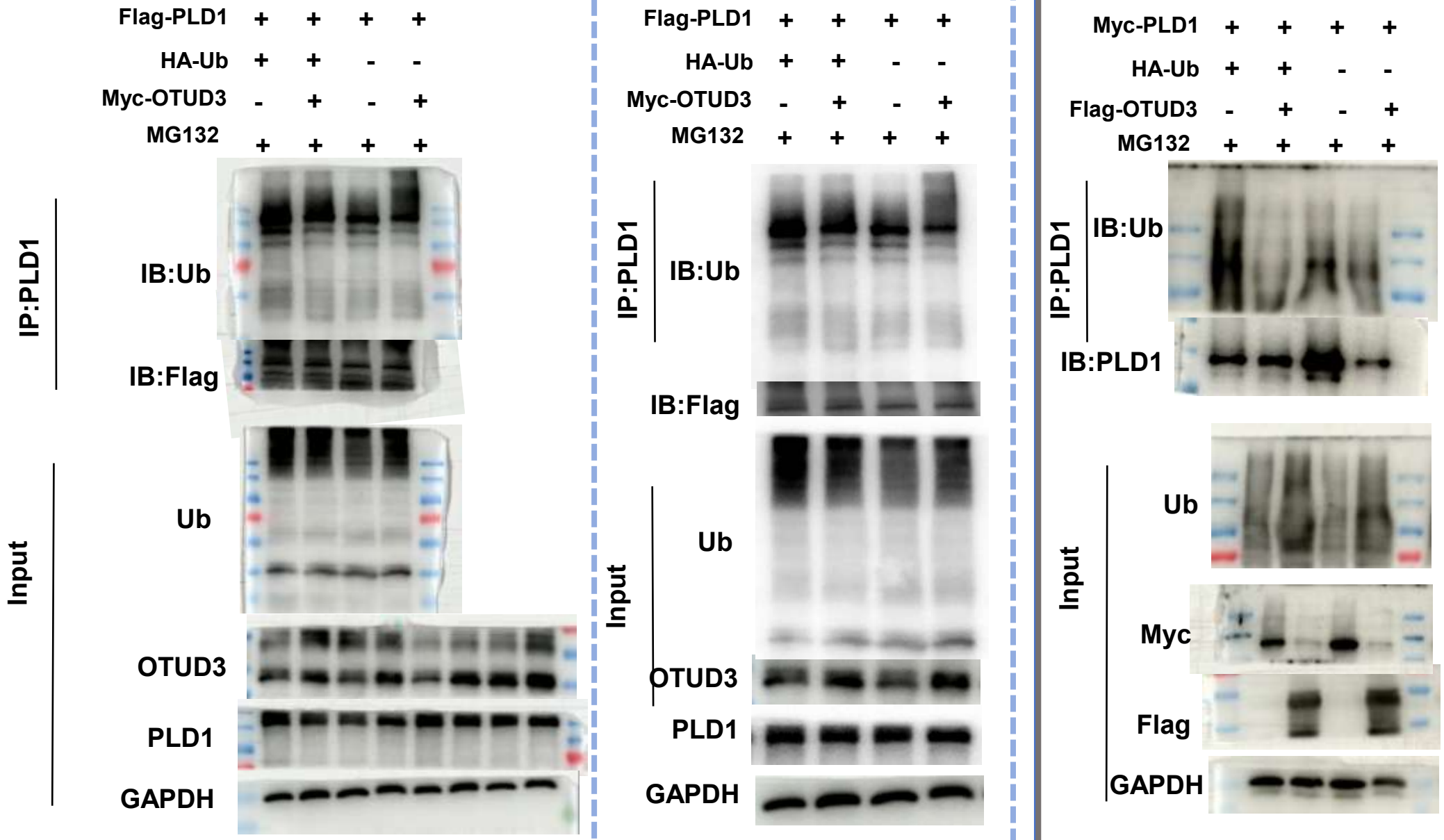


Figure 5V

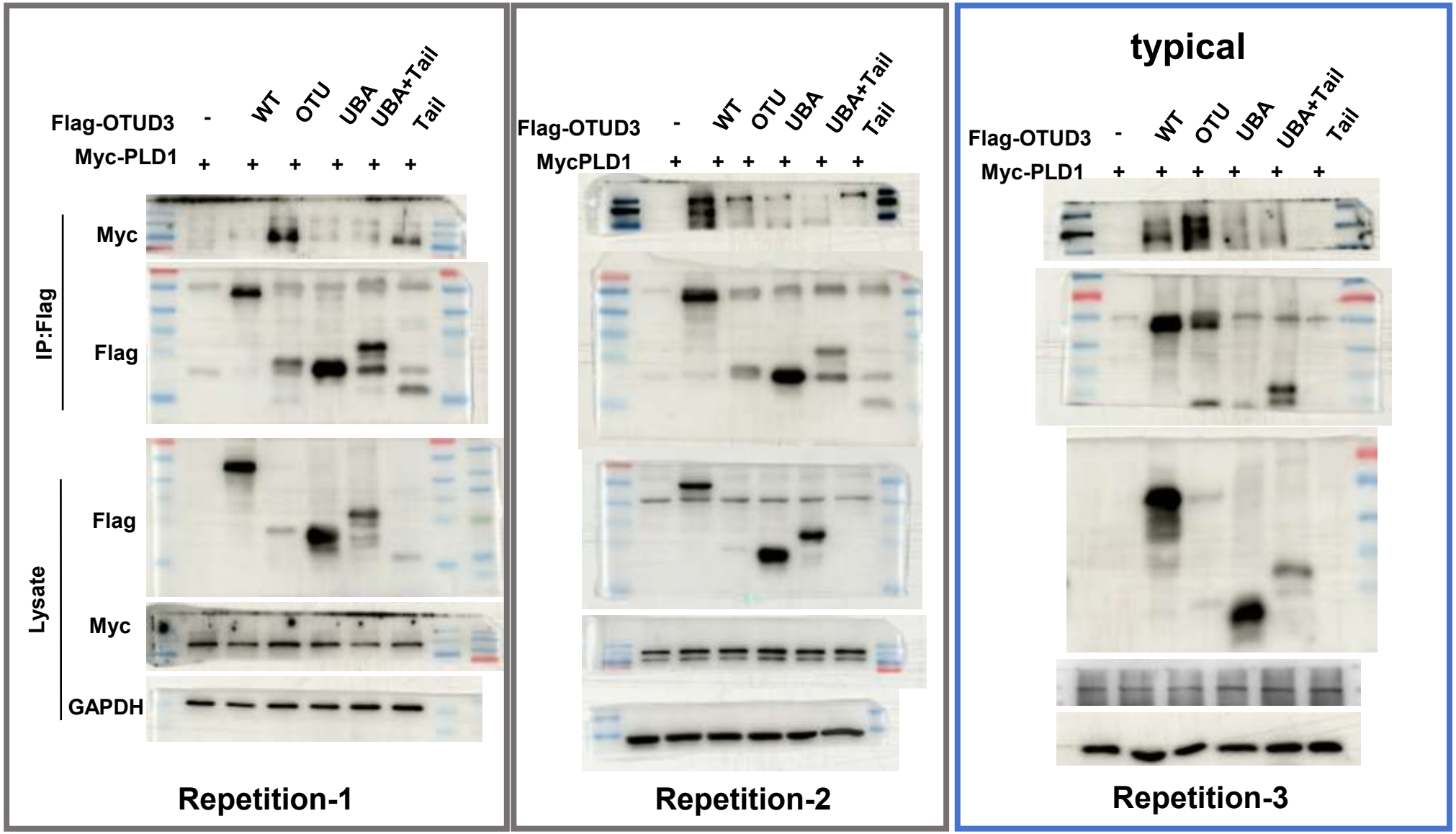

Flag-OTUD3
-
WT
OTU
UBA
UBA+Tail
Tail
Myc-PLD1
+ + + + + +
IP:Flag
Myc
Flag
Lysate
Flag
Myc
GAPDH
Repetition-1
MycPLD1
Repetition-2
typical
Repetition-3
KEK293T

Figure 6A

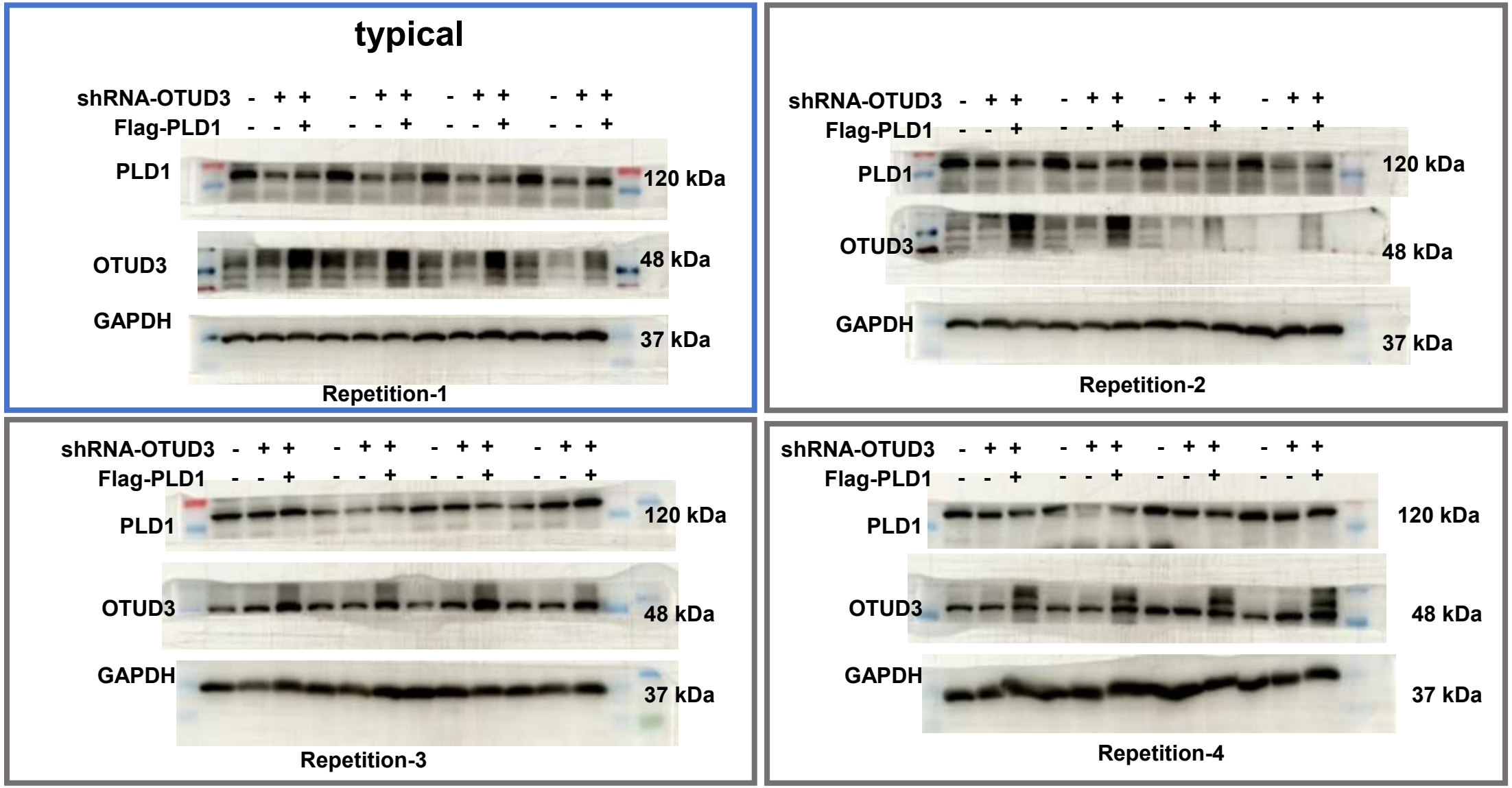

typical
shRNA-OTUD3 - + + - + + - + + - + +
Flag-PLD1 - - + - - + - - + - - +
PLD1
120 kDa
OTUD3
48 kDa
GAPDH
37 kDa
Repetition-1
shRNA-OTUD3 - + + - + + - + + - + +
Flag-PLD1 - - + - - + - - + - - +
PLD1
120 kDa
OTUD3
48 kDa
GAPDH
37 kDa
Repetition-2
shRNA-OTUD3 - + + - + + - + + - + +
Flag-PLD1 - - + - - + - - + - - +
PLD1
120 kDa
OTUD3
48 kDa
GAPDH
37 kDa
Repetition-3
shRNA-OTUD3 - + + - + + - + + - + +
Flag-PLD1 - - + - - + - - + - - +
PLD1
120 kDa
OTUD3
48 kDa
GAPDH
37 kDa
Repetition-4

Figure 6E

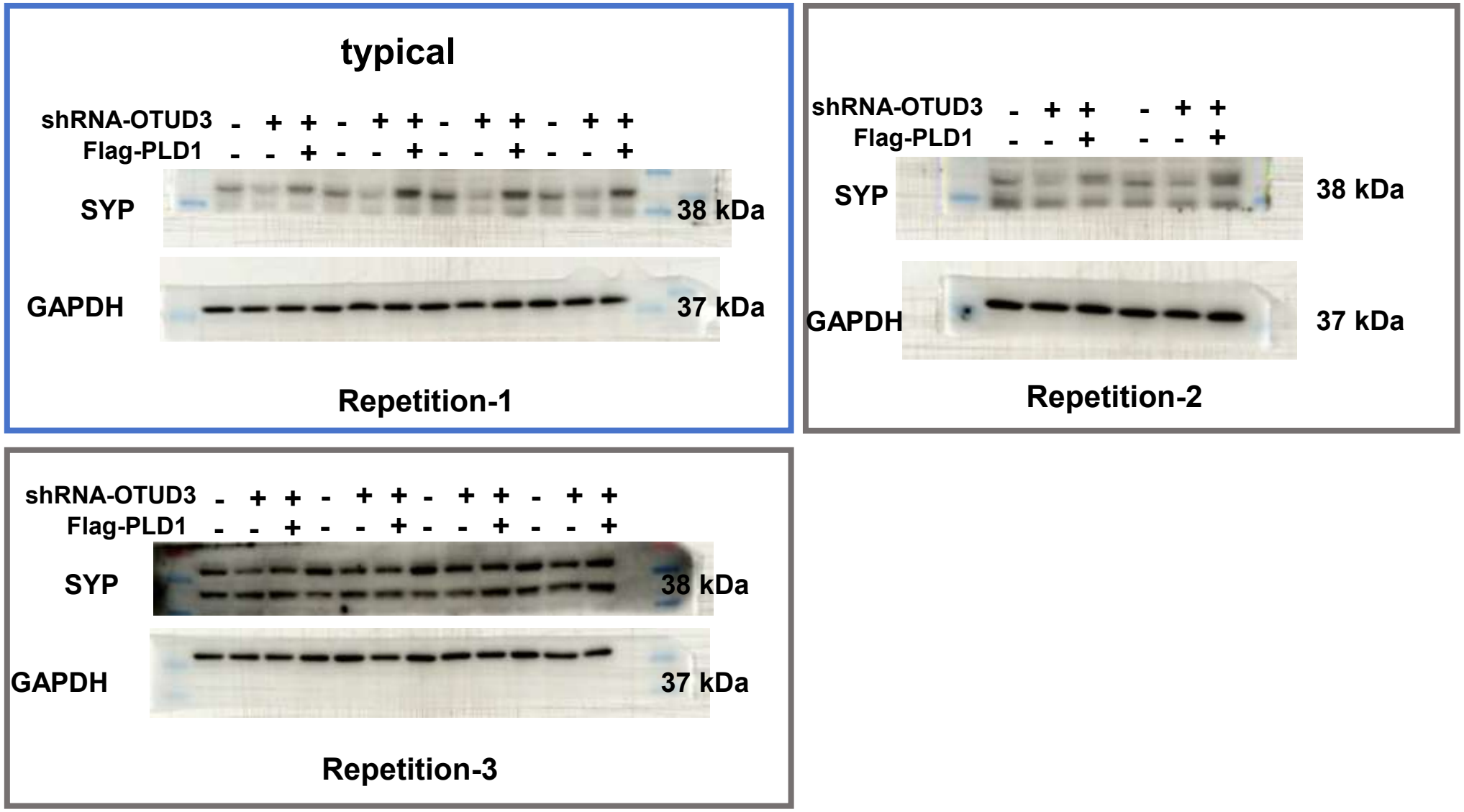

typical
shRNA-OTUD3 - + + - + + - + + - + +
Flag-PLD1 - - + - - + - - + - - +
SYP
38 kDa
GAPDH
37 kDa
Repetition-1
shRNA-OTUD3 - + + - + +
Flag-PLD1 - - + - - +
SYP
38 kDa
GAPDH
37 kDa
Repetition-2
shRNA-OTUD3 - + + - + + - + + - + +
Flag-PLD1 - - + - - + - - + - - +
SYP
38 kDa
GAPDH
37 kDa
Repetition-3

Figure S1-B

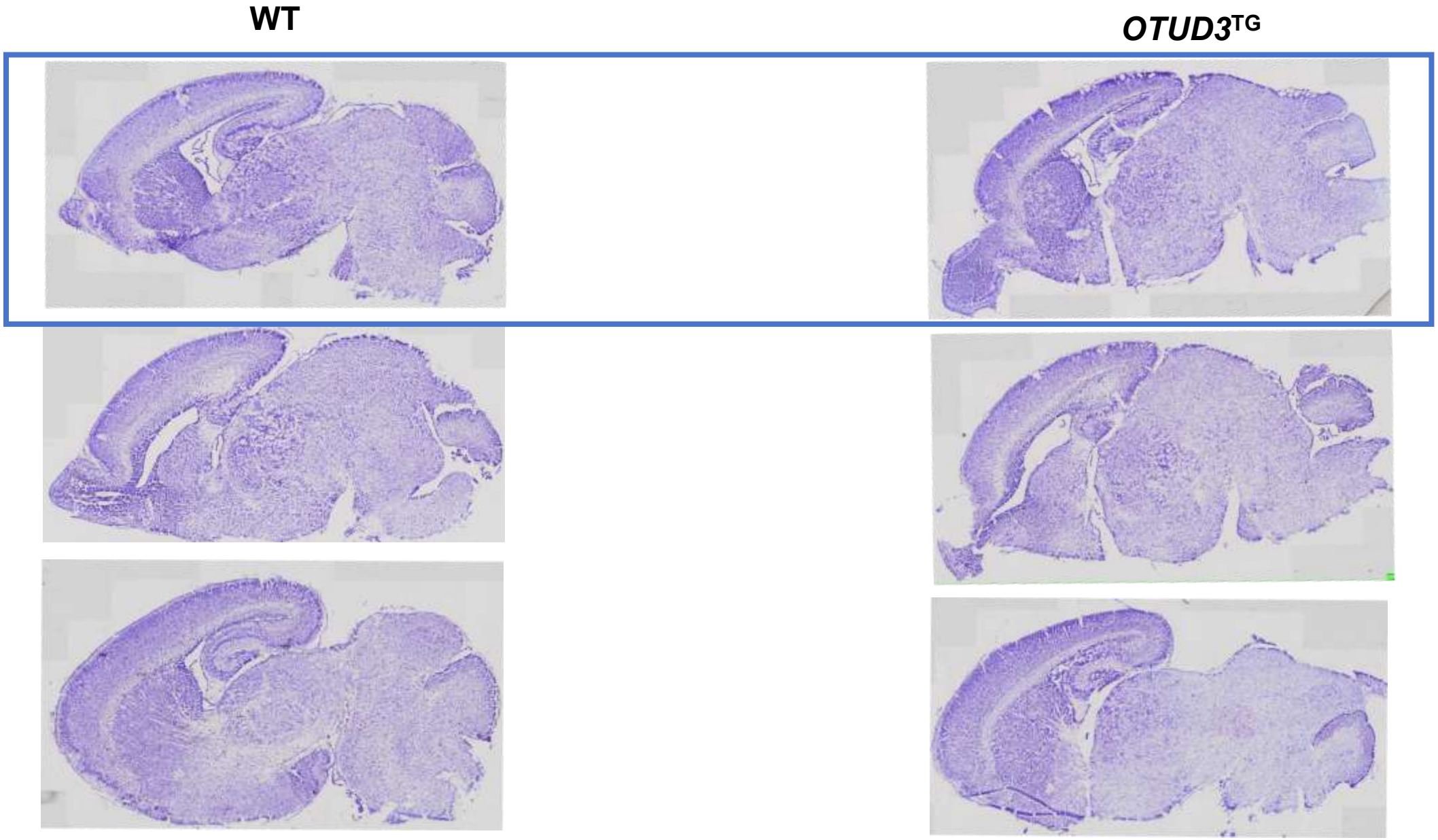
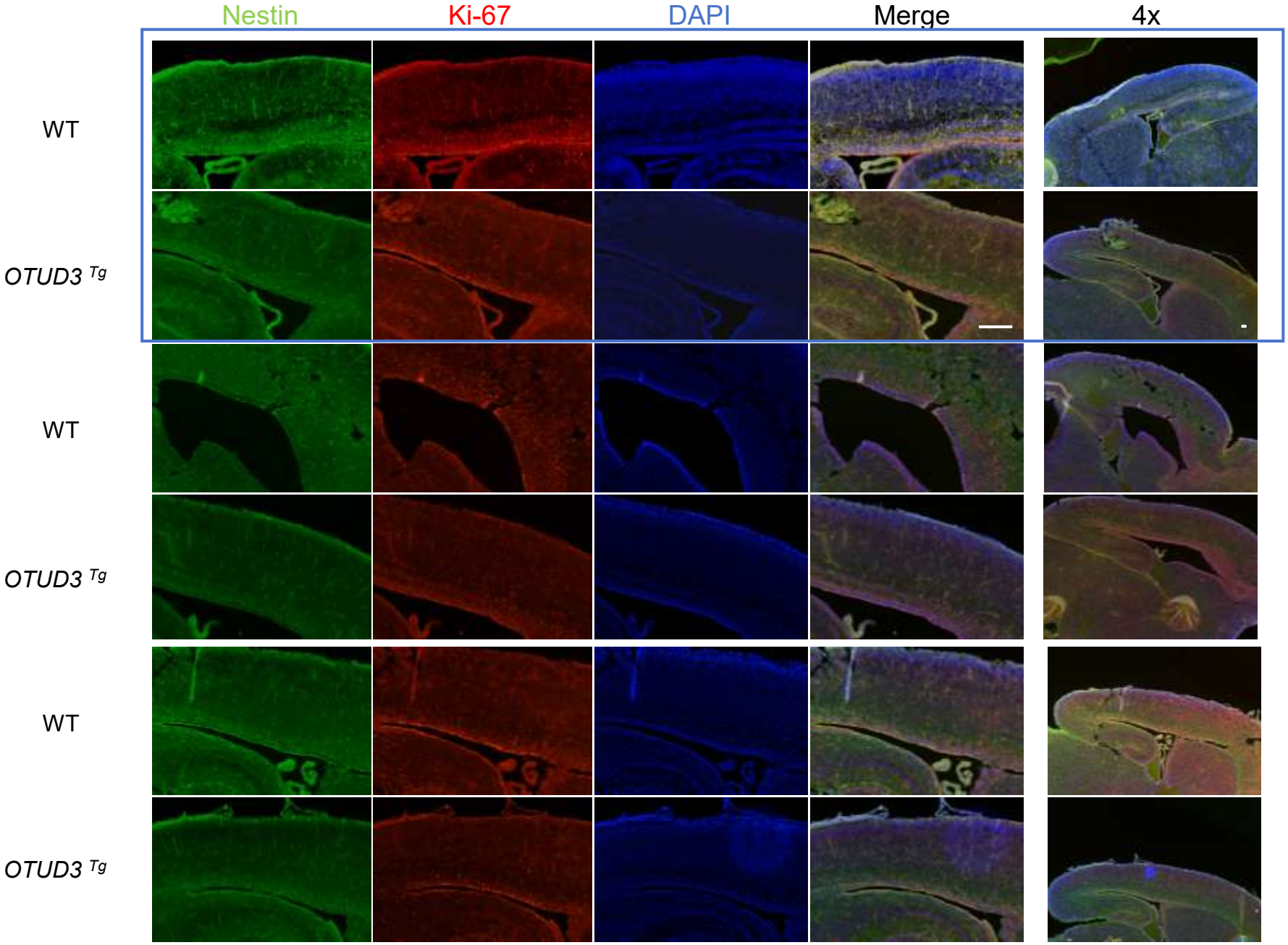


Figure 1S-C



typical

scale bar = 100μm

Figure 1S-F

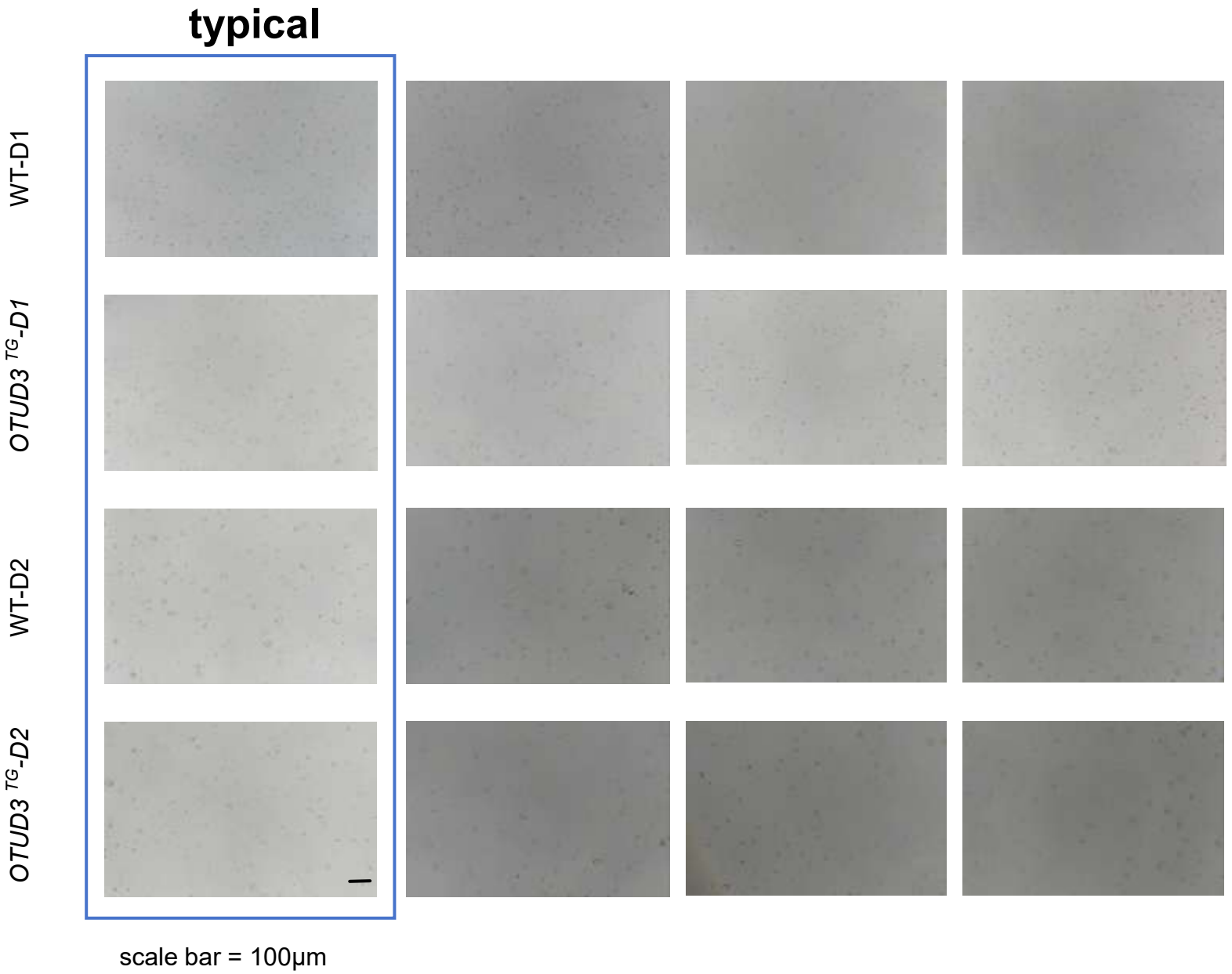
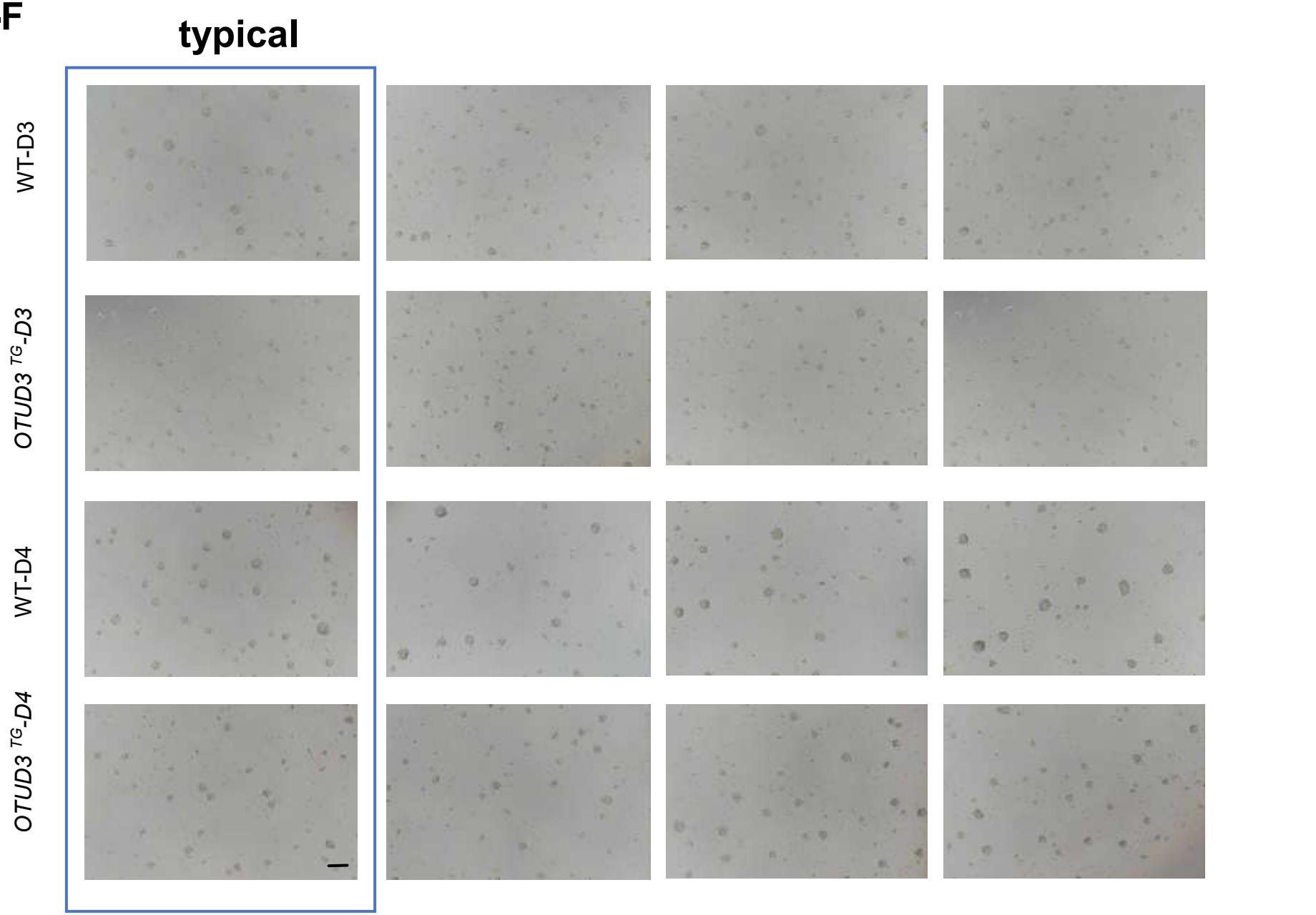
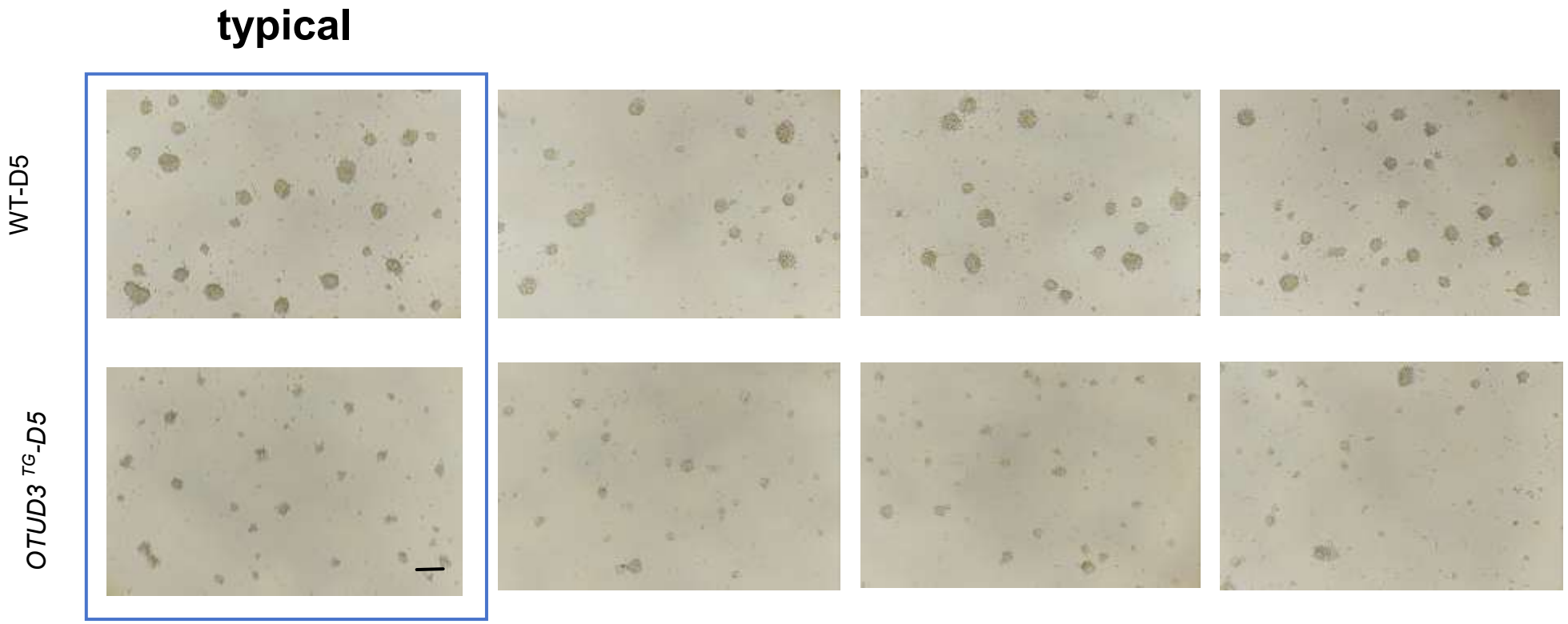


Figure S1-F



scale bar = 100μm

Figure S1-F



scale bar = 100μm

Figure S1-H **Ki67**

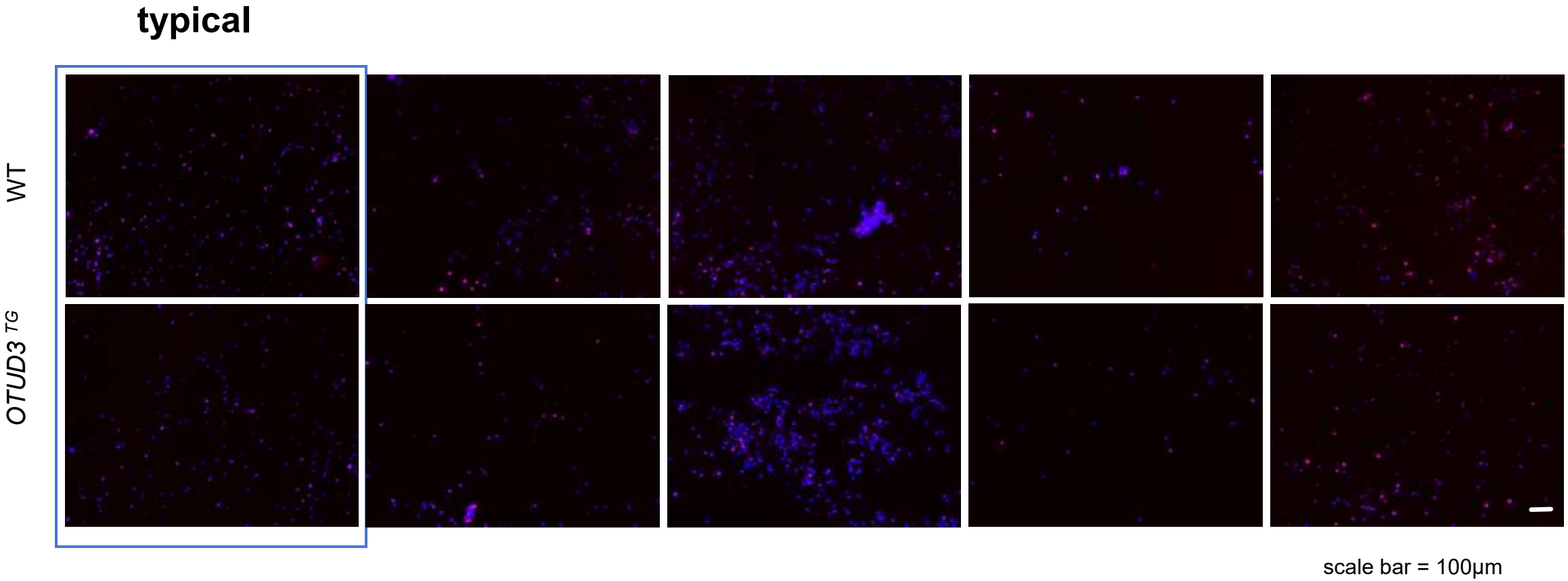
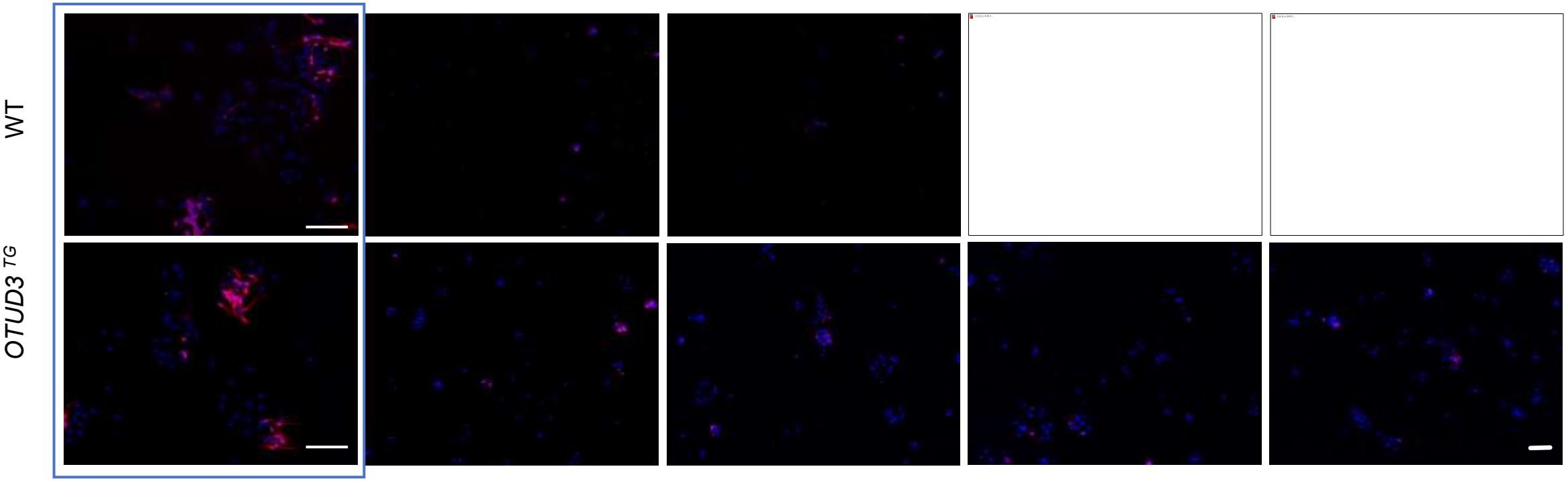


Figure S1-J β-TubulinⅢ

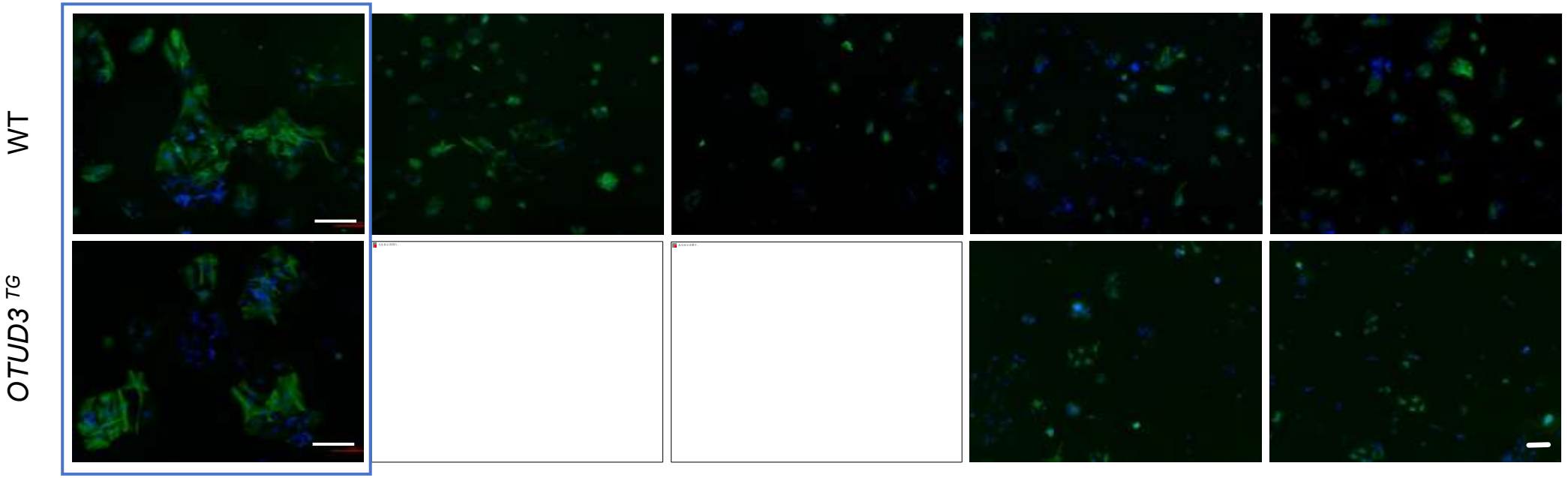
typical



scale bar = 100μm

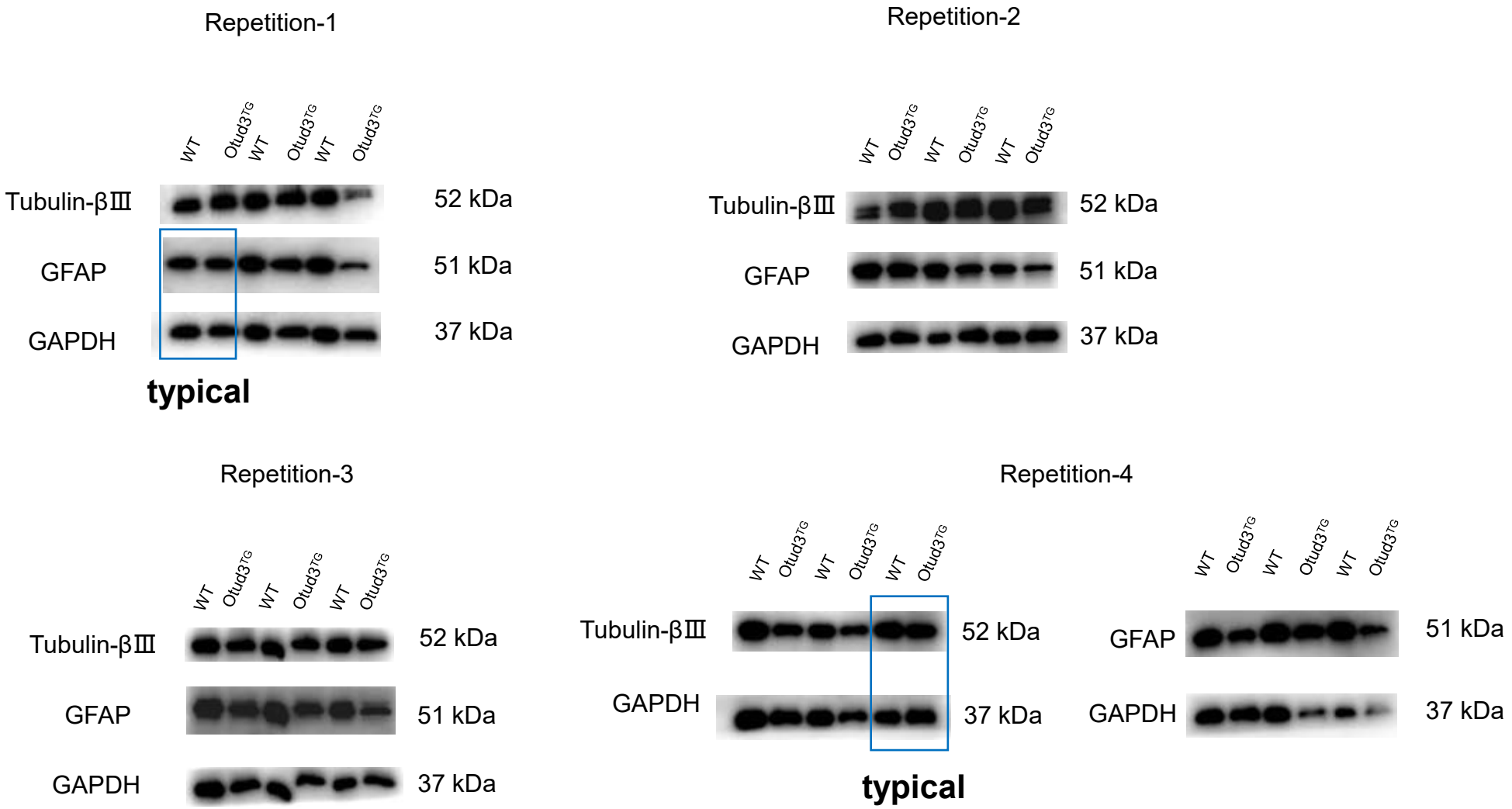
Figure S1-L GFAP

typical



scale bar = 100μm

Figure S1-N


Repetition-1
WT
Otud3TG
WT
Otud3TG
WT
Otud3TG
Tubulin-βⅢ
GFAP
GAPDH
52 kDa
51 kDa
37 kDa
typical
Repetition-2
WT
Otud3TG
WT
Otud3TG
WT
Otud3TG
Tubulin-βⅢ
GFAP
GAPDH
52 kDa
51 kDa
37 kDa
Repetition-3
WT
Otud3TG
WT
Otud3TG
WT
Otud3TG
Tubulin-βⅢ
GFAP
GAPDH
52 kDa
51 kDa
37 kDa
Repetition-4
WT
Otud3TG
WT
Otud3TG
WT
Otud3TG
Tubulin-βⅢ
GAPDH
52 kDa
37 kDa
typical
WT
Otud3TG
WT
Otud3TG
WT
Otud3TG
GFAP
GAPDH
51 kDa
37 kDa