Figure S1

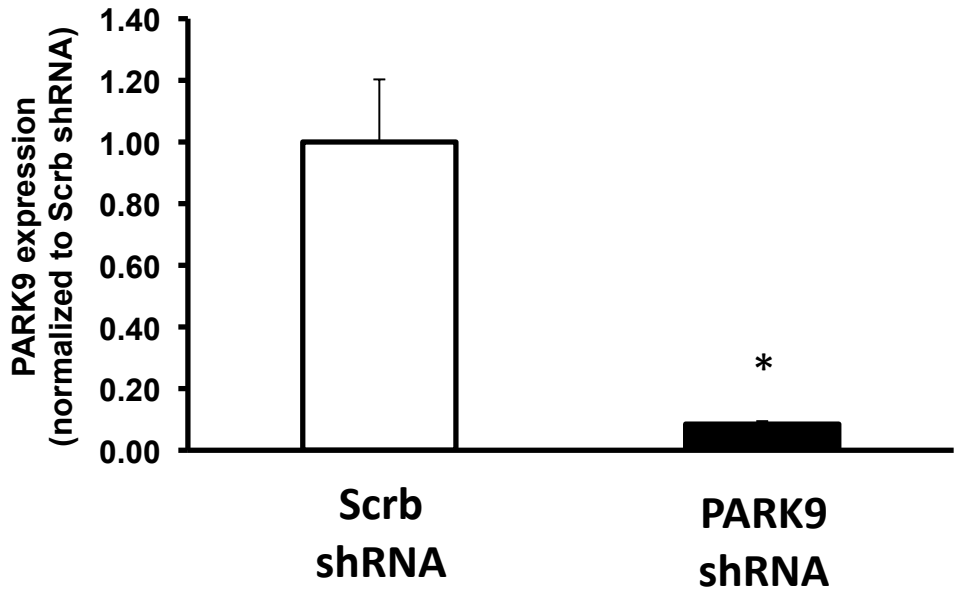
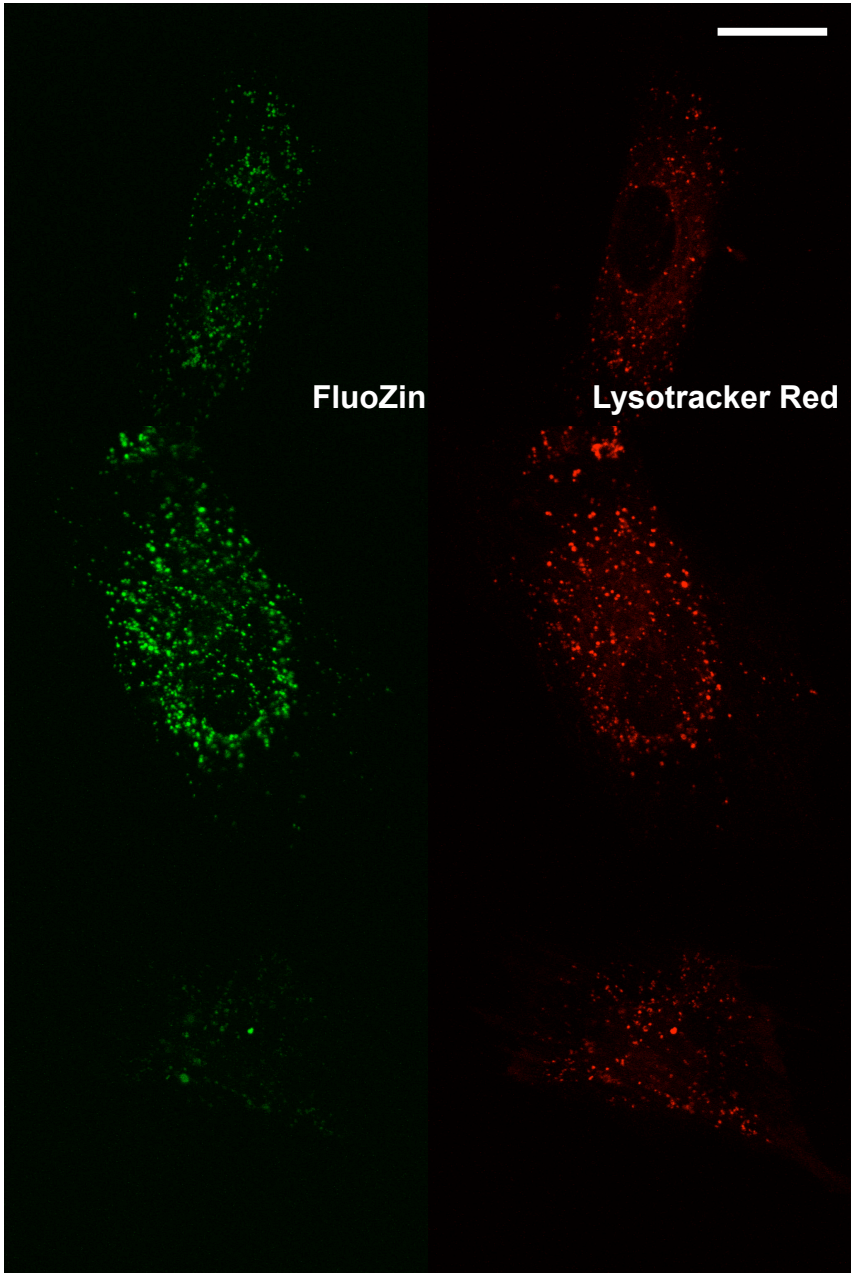

PARK9 expression
(normalized to Scrb shRNA)
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
*
Scrb
shRNA
PARK9
shRNA

Figure S2



Before treatment

Zn 100 μM

Zn 100 μM ; TPEN 1 μM

Figure S3

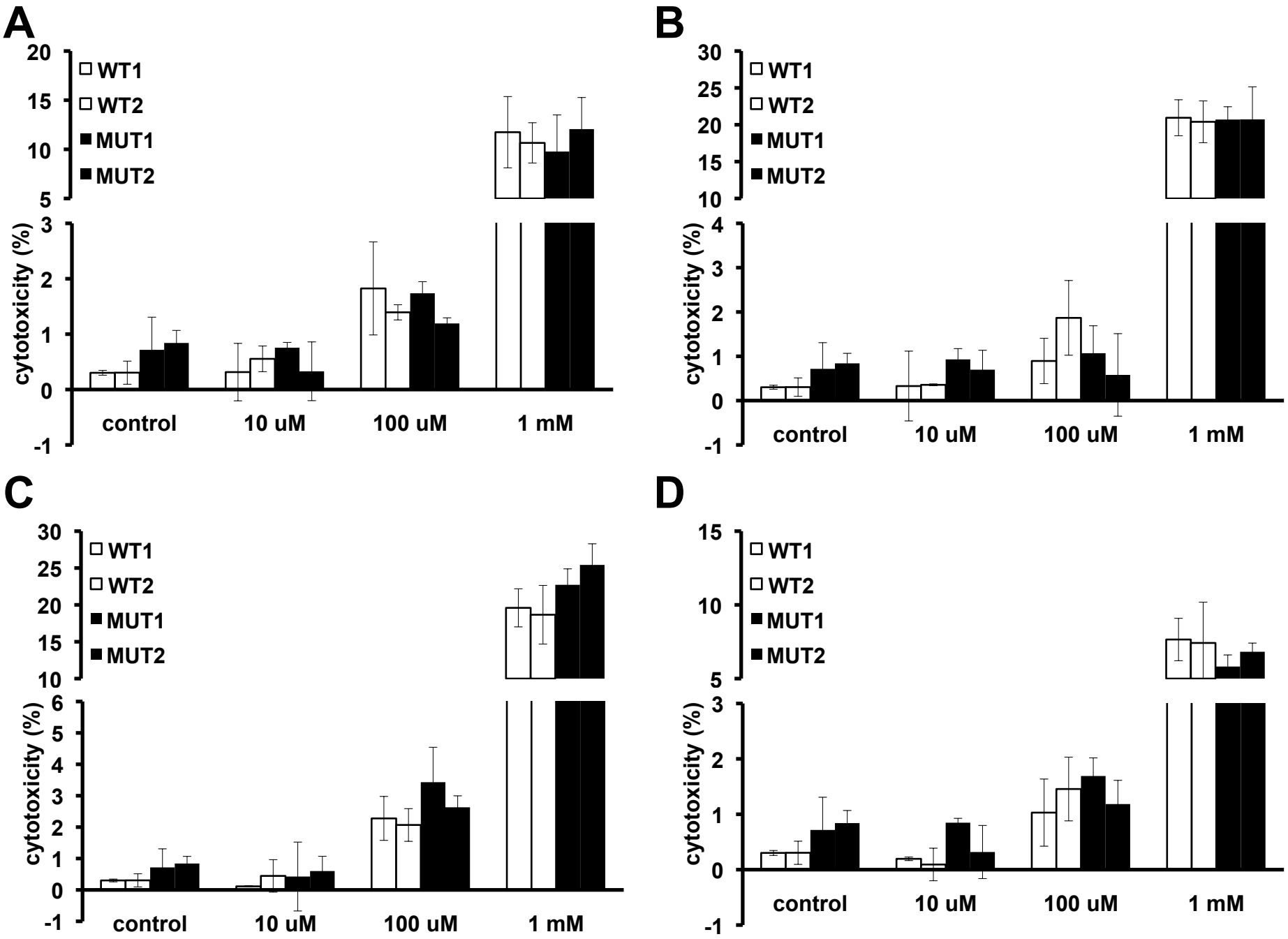
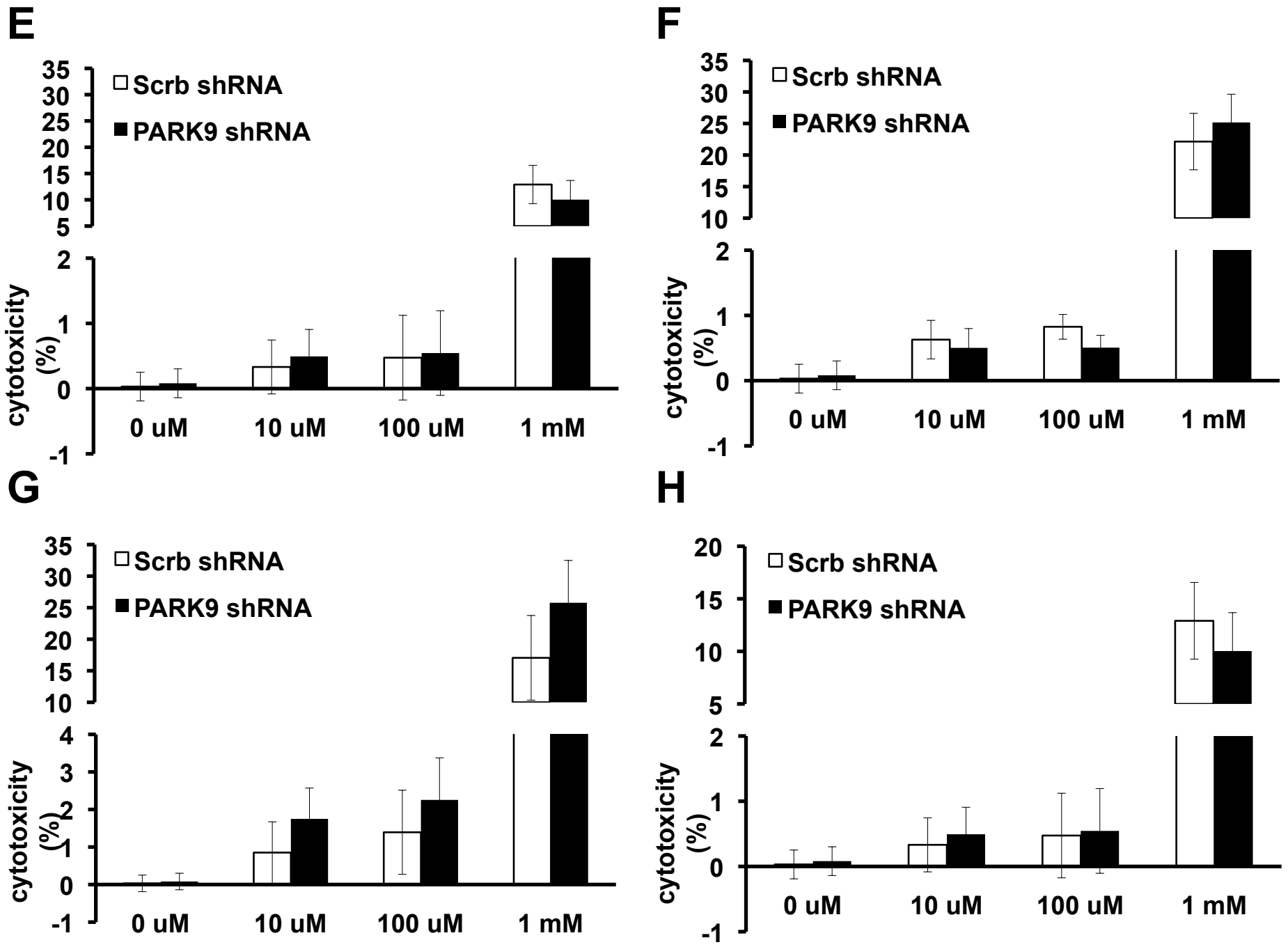


Figure S3


E
F
G
H
Scrb shRNA
PARK9 shRNA
cytotoxicity (%)
0 uM
10 uM
100 uM
1 mM

Supplementary Material Figure legends

Figure S1. Efficiency of mouse *PARK9* silencing by PARK9 shRNA in primary cortical neurons.

The mRNA expression of mouse *PARK9* was analyzed in the primary cortical neurons transfected with lenti-shRNA targeting mouse *ATP13A2/PARK9* (PARK9 shRNA) or scrambled control shRNA (Scrb shRNA) (n = 3, $*p < 0.03$). The values are the mean ± SEM.

Figure S2. The Zn^{2+} chelation of TPEN in fibroblasts

The representative confocal live-cell images of WT1 fibroblasts stained with FluoZin-3 (green) and LysoTracker Red (red). WT1 fibroblasts were stained before (upper), after treatment with 100 μM Zn^{2+} (middle), or after treatment with 100 μM Zn^{2+} and 1 μM TPEN (bottom). Scale bar indicates 20 μm.

Figure S3. PARK9 mutant fibroblasts and primary cortical neurons do not show significant difference in sensitivity to cations other than Zn^{2+}.

A-D. Lactate dehydrogenase (LDH) release from fibroblasts cultured in a medium containing one of the cations (**A**: Cu^{2+}, **B**: Fe^{2+}, **C**: Mn^{2+}, or **D**: Ni^{2+}, with the concentration of 0, 10, 100 or 1000 μM) for 24 hours (n = 3). **E-H.** LDH release from primary cortical neurons (PCNs) cultured in the presence of one of the cations (**E**: Cu^{2+}, **F**: Fe^{2+}, **G**: Mn^{2+}, or **H**: Ni^{2+}, with the concentration of 0, 10, 100 or 1000 μM) for 24 hours (n = 3). The values are the mean ± SEM.