FIGURE 1

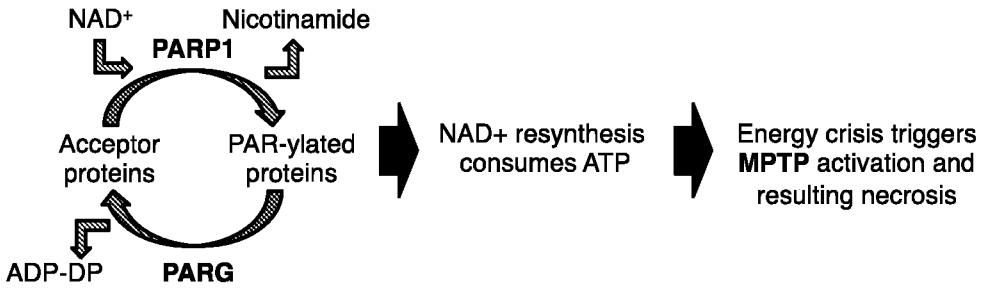

NAD+
Nicotinamide
PARP1
Acceptor proteins
PAR-ylated proteins
ADP-DP
PARG
NAD+ resynthesis consumes ATP
Energy crisis triggers MPTP activation and resulting necrosis

FIGURE 2

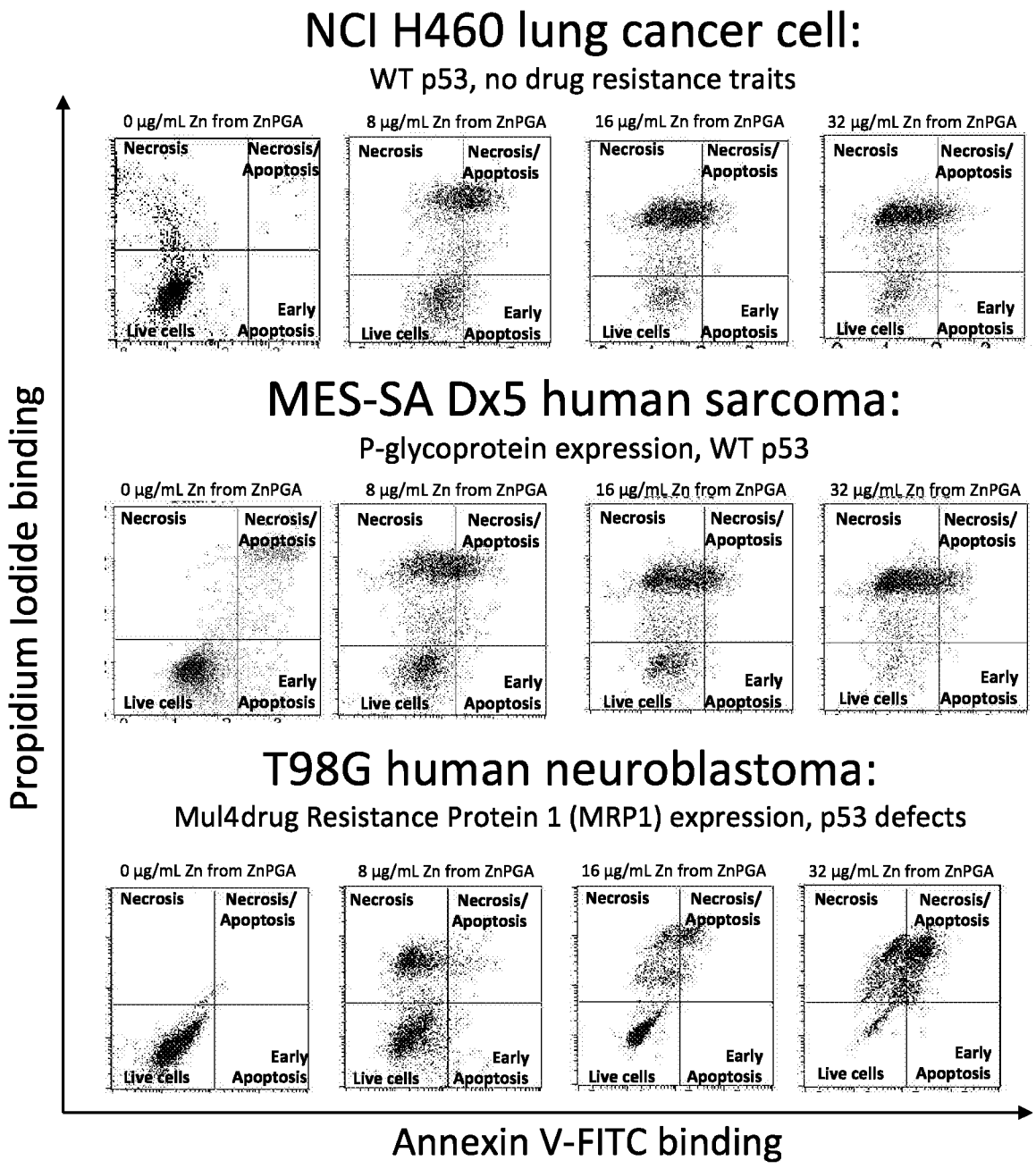

NCI H460 lung cancer cell:
WT p53, no drug resistance traits
0 µg/mL Zn from ZnPGA
8 µg/mL Zn from ZnPGA
16 µg/mL Zn from ZnPGA
32 µg/mL Zn from ZnPGA
Necrosis
Necrosis/ Apoptosis
Live cells
Early Apoptosis
MES-SA Dx5 human sarcoma:
P-glycoprotein expression, WT p53
T98G human neuroblastoma:
Mul4drug Resistance Protein 1 (MRP1) expression, p53 defects
Propidium Iodide binding
Annexin V-FITC binding

FIGURE 3

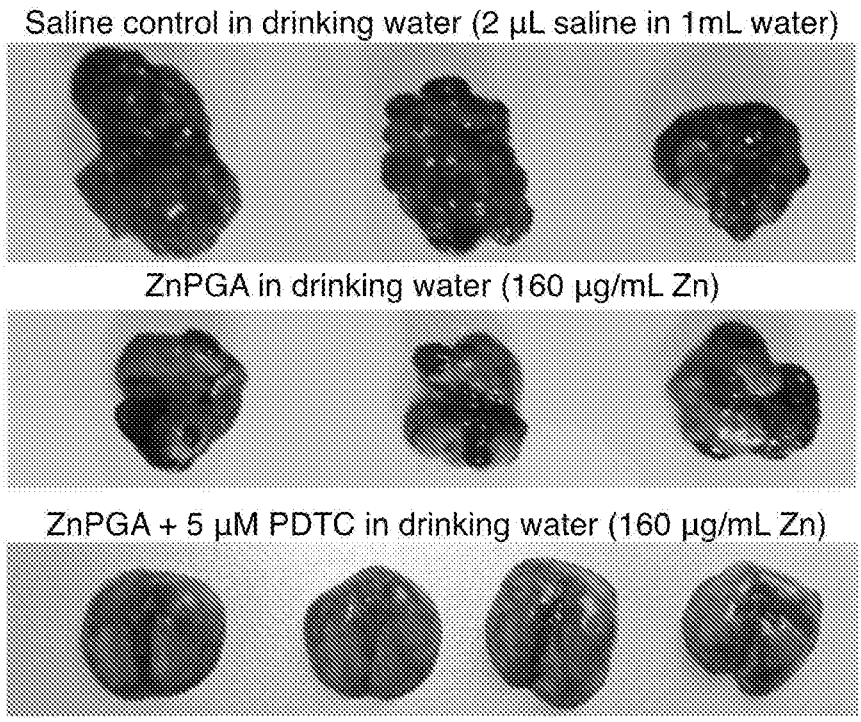


FIGURE 4

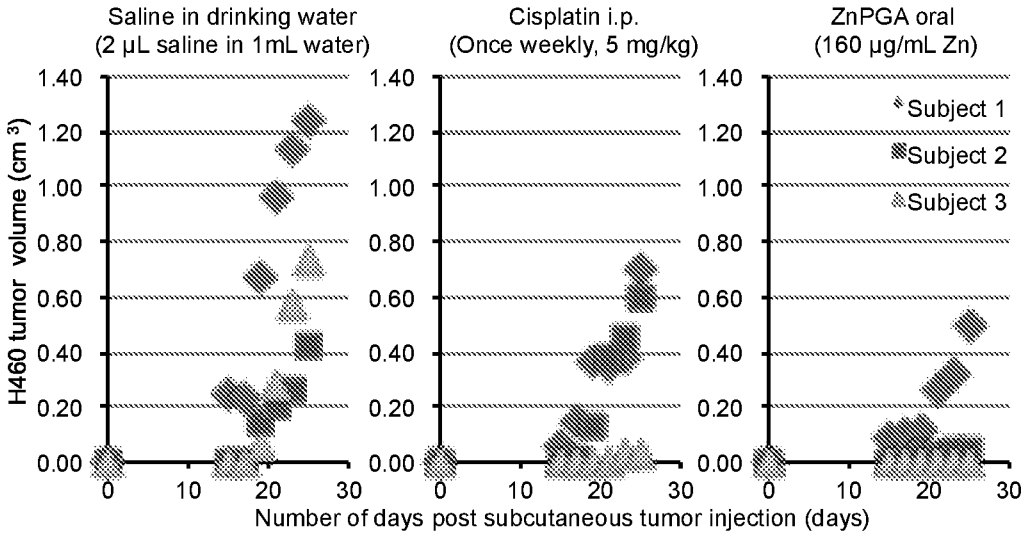


FIGURE 5A

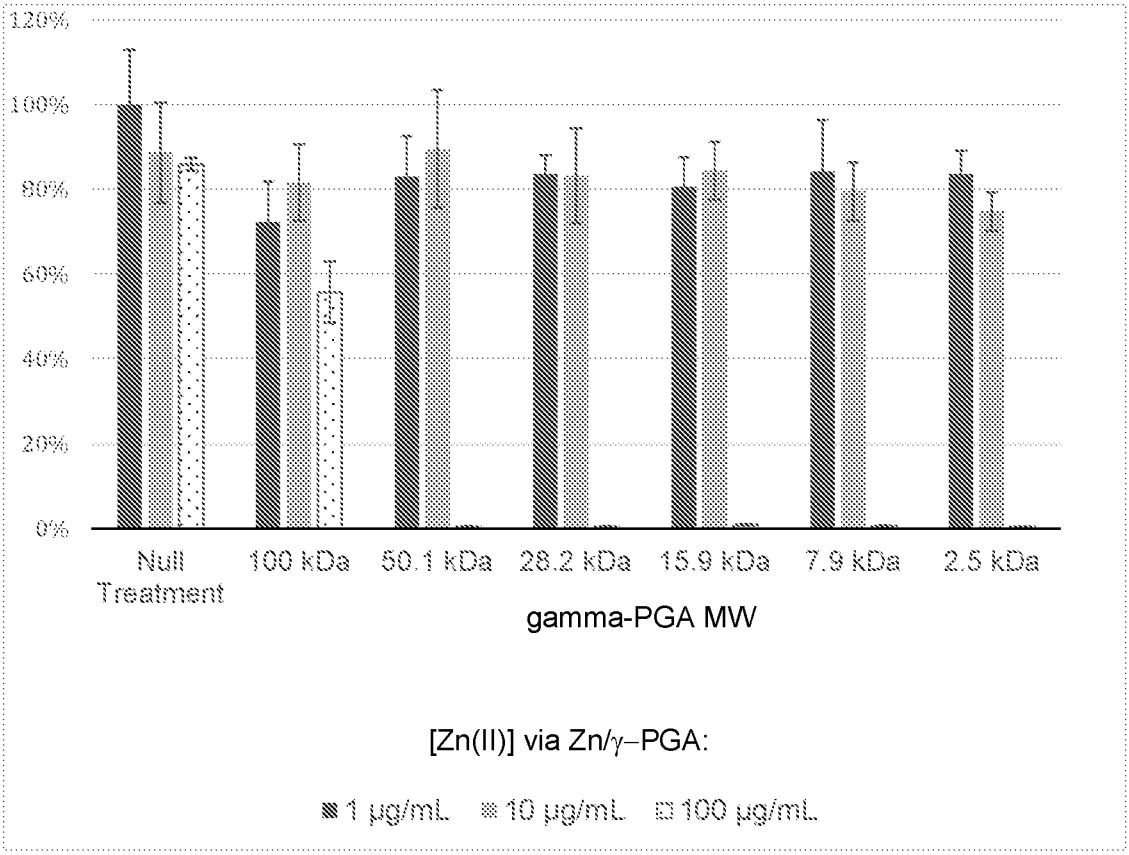


FIGURE 5B

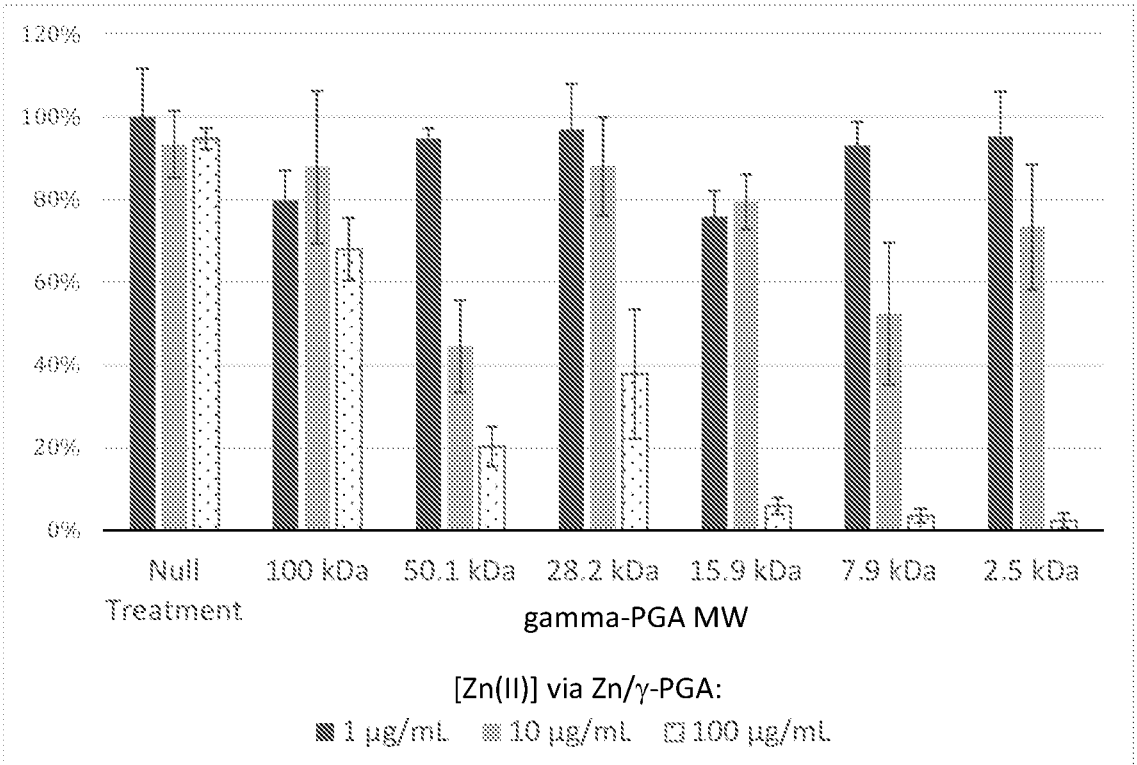
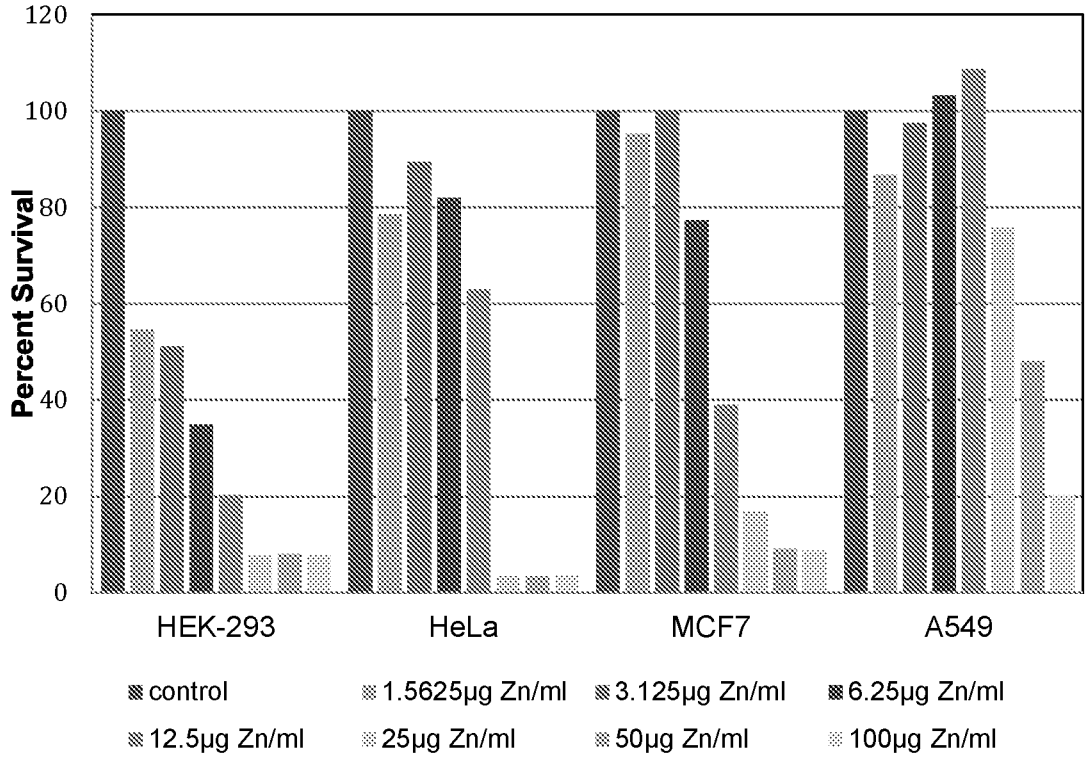


Figure 6


120
100
80
60
40
20
0
Percent Survival
HEK-293
HeLa
MCF7
A549
control
1.5625µg Zn/ml
3.125µg Zn/ml
6.25µg Zn/ml
12.5µg Zn/ml
25µg Zn/ml
50µg Zn/ml
100µg Zn/ml