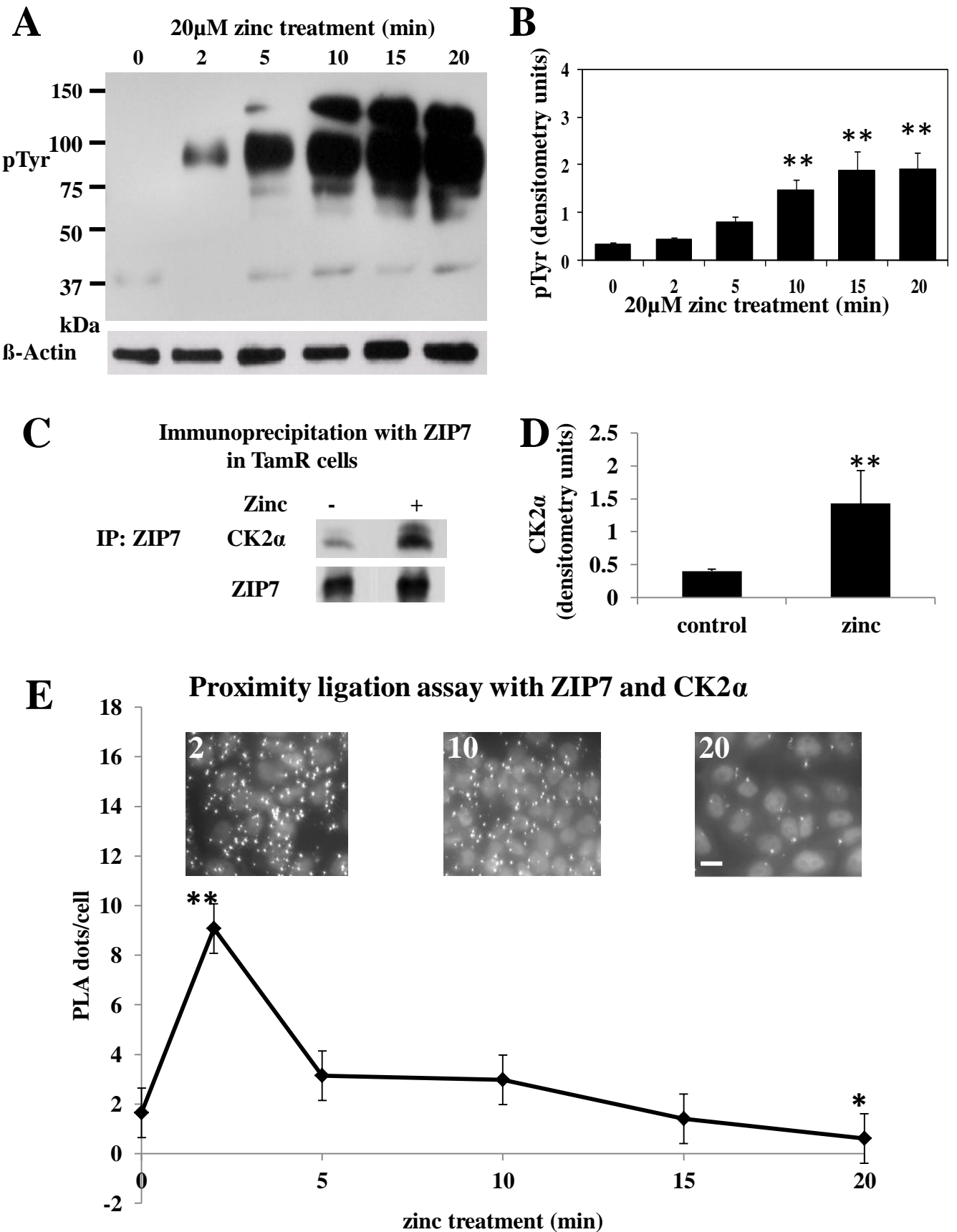
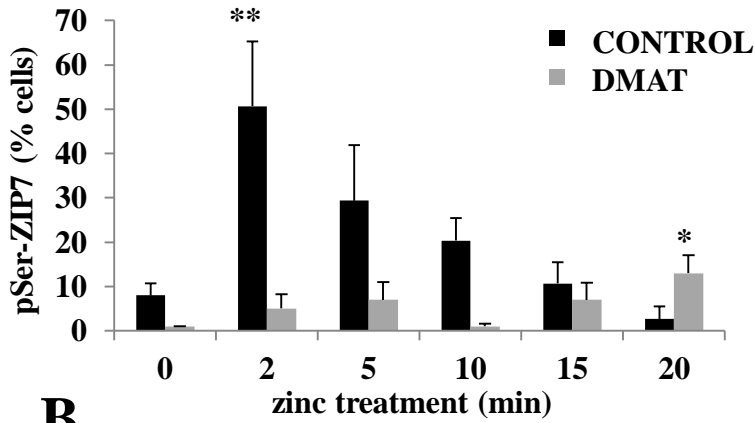


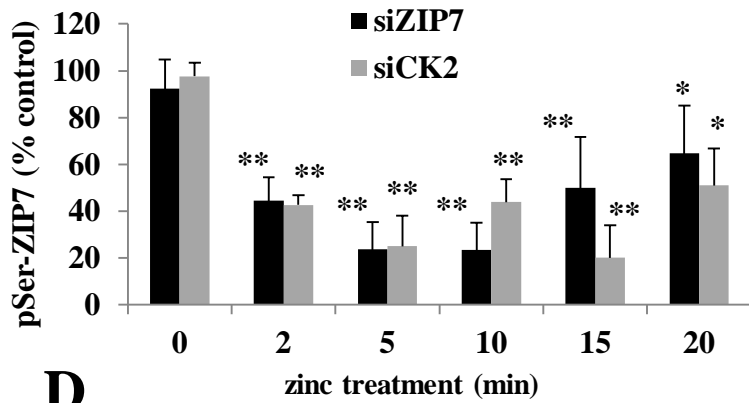
**Figure 1**

**Figure 2**

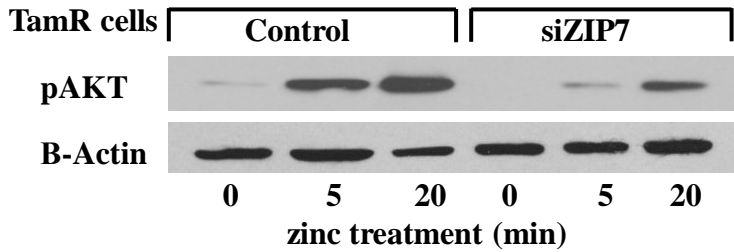
**A**



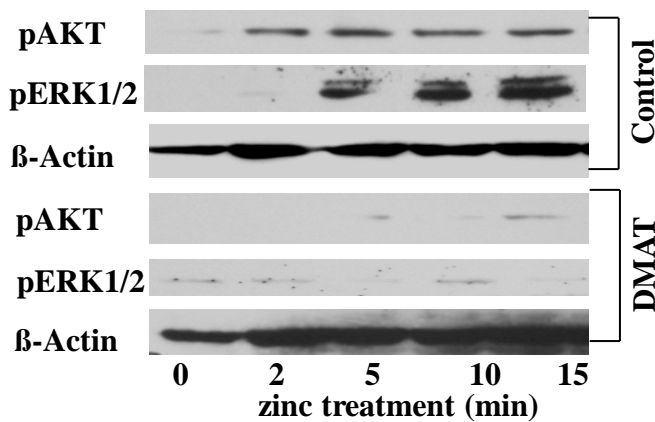
**B**



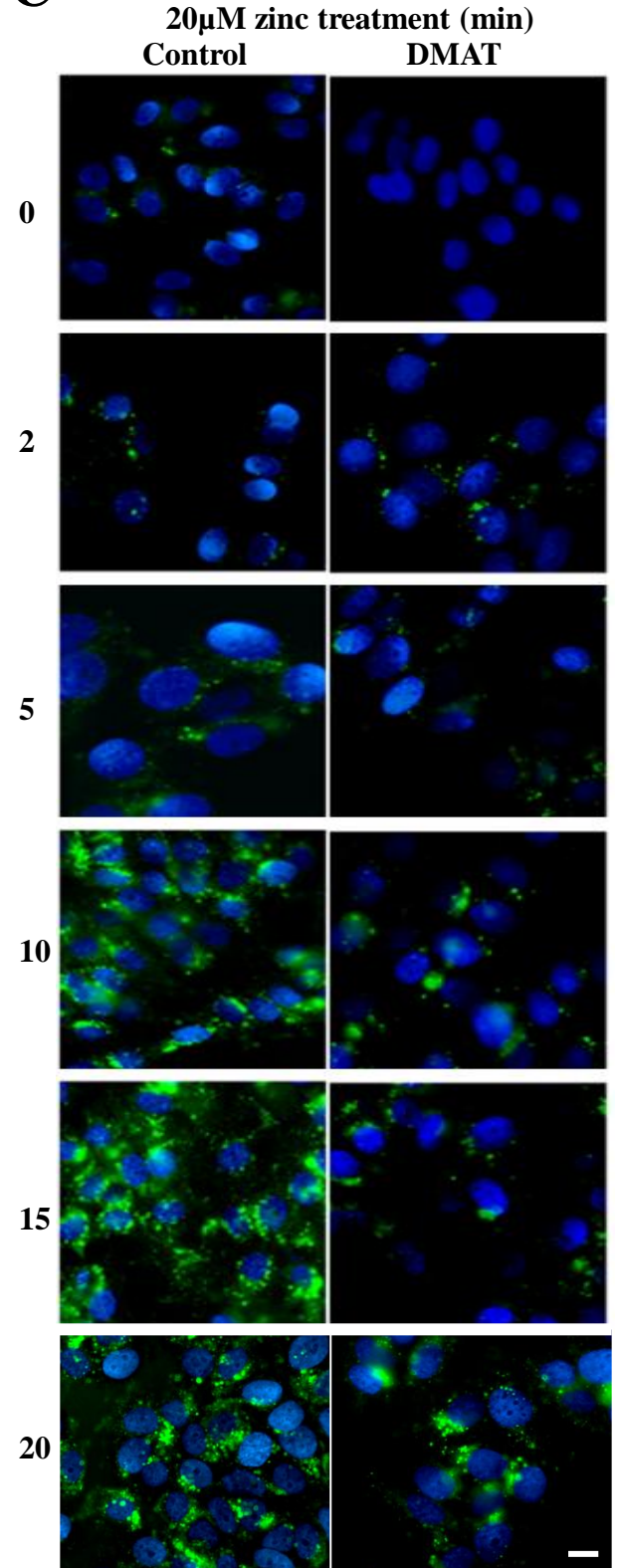
**D**

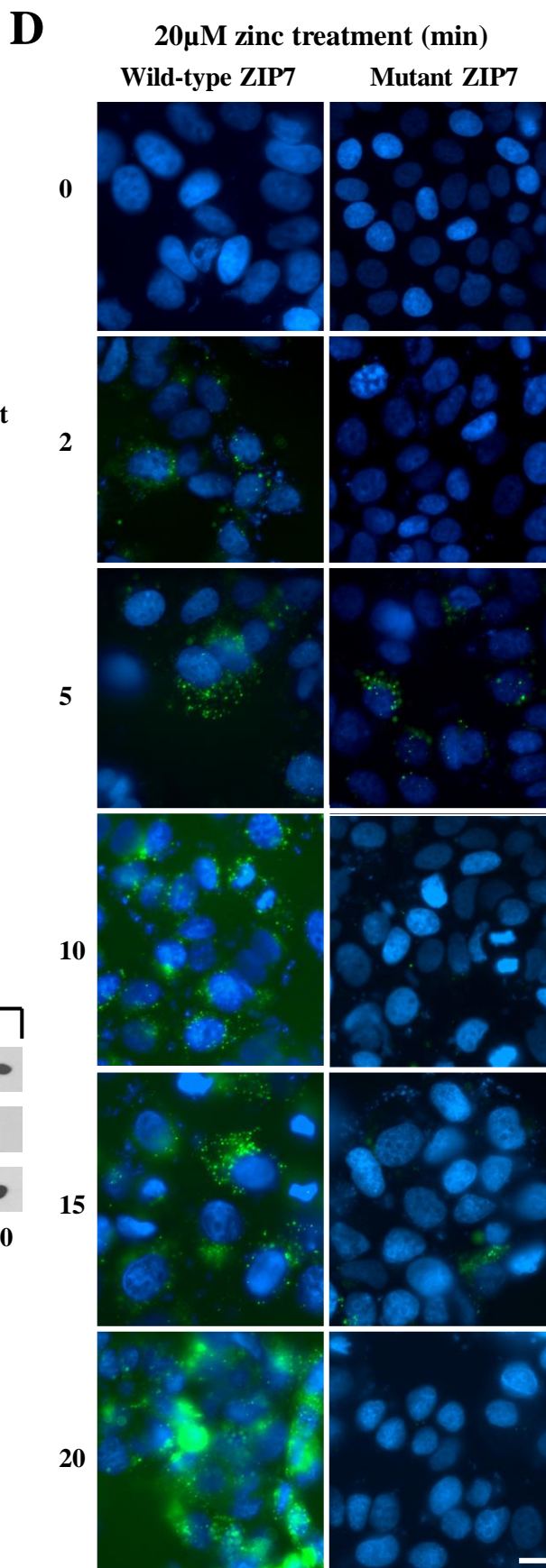
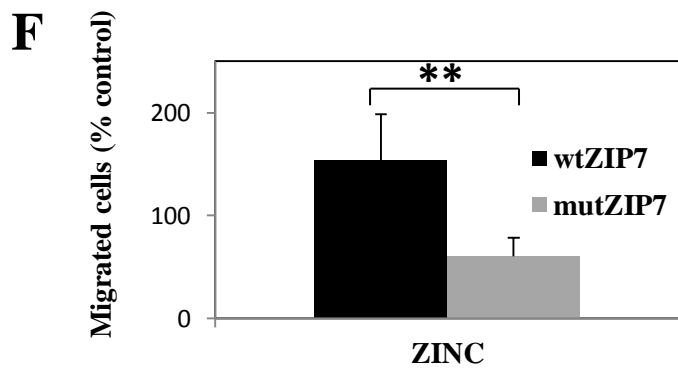
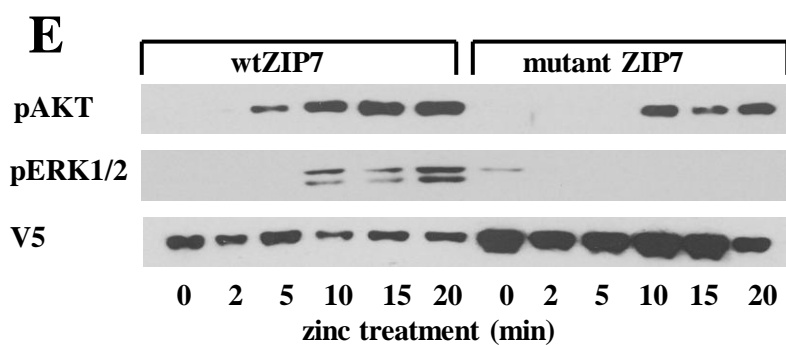
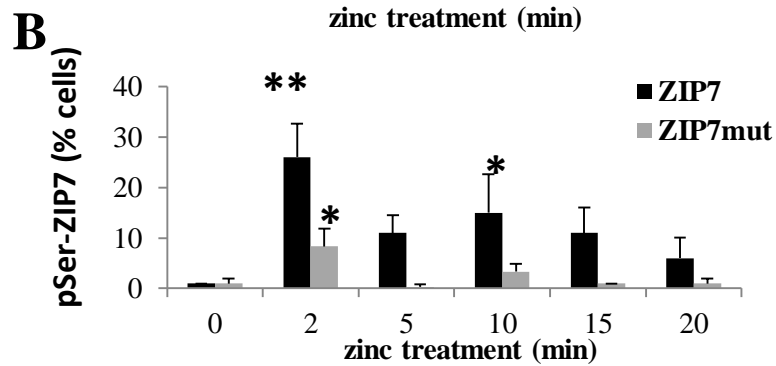
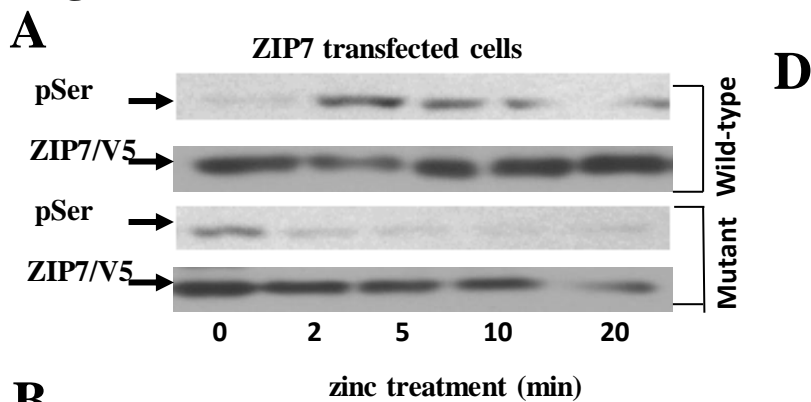


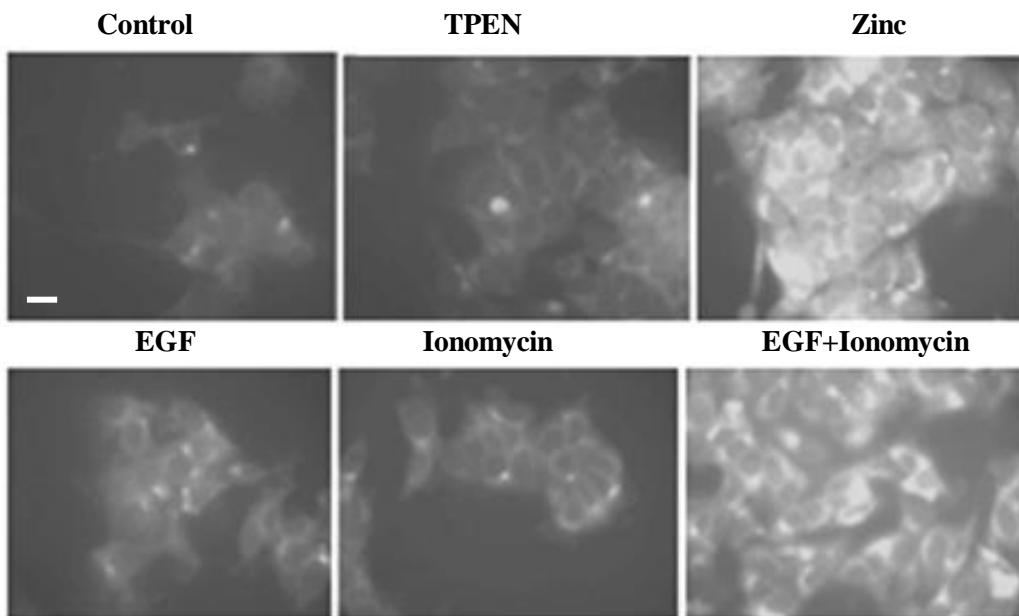
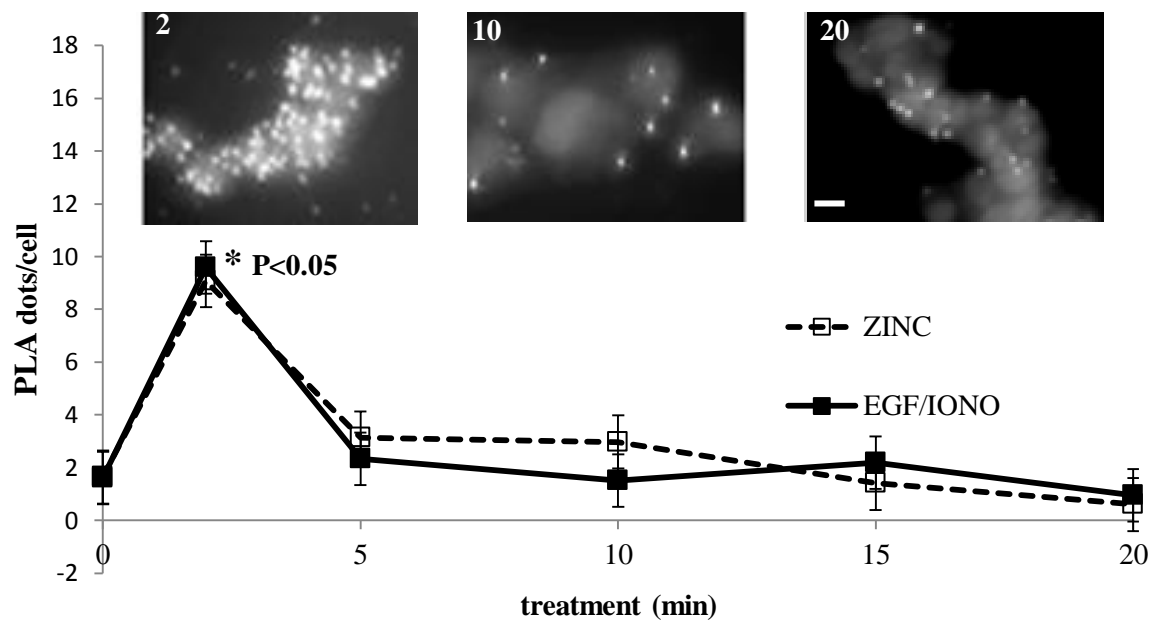
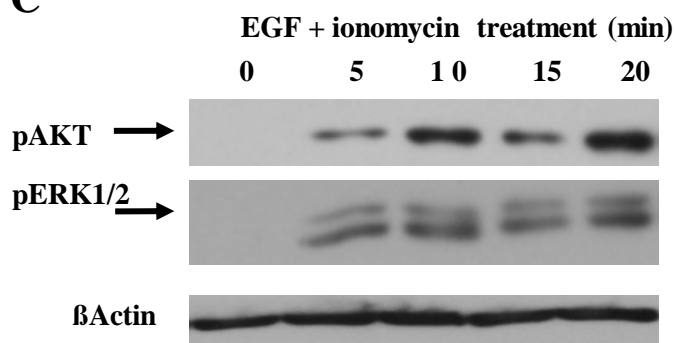
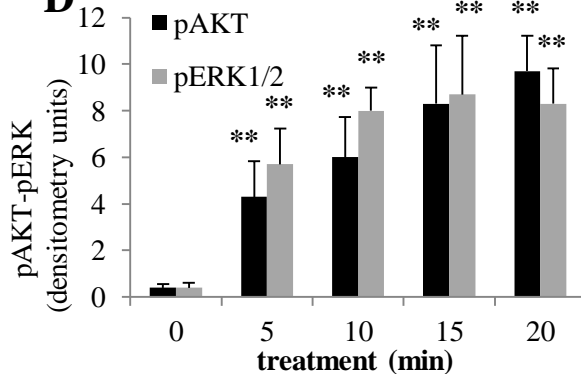
**E**



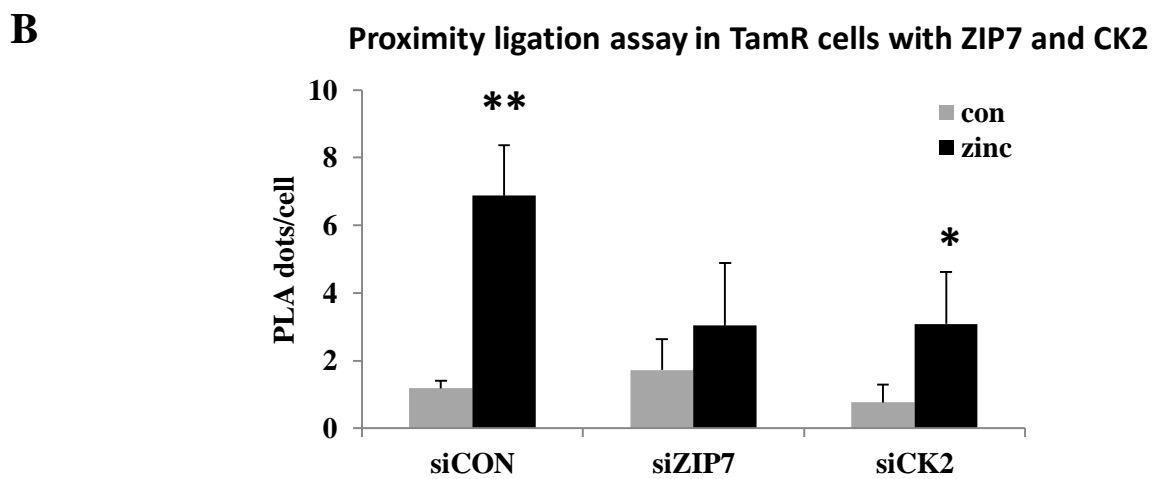
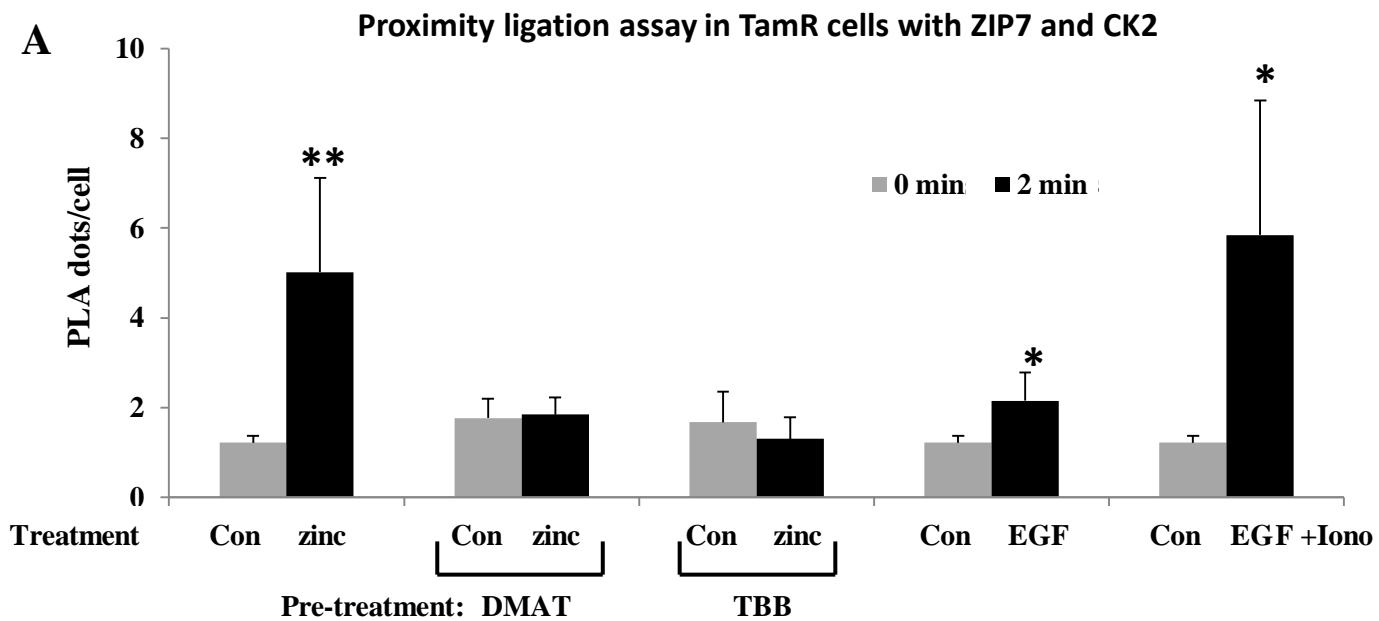
**C**



**Figure 3**

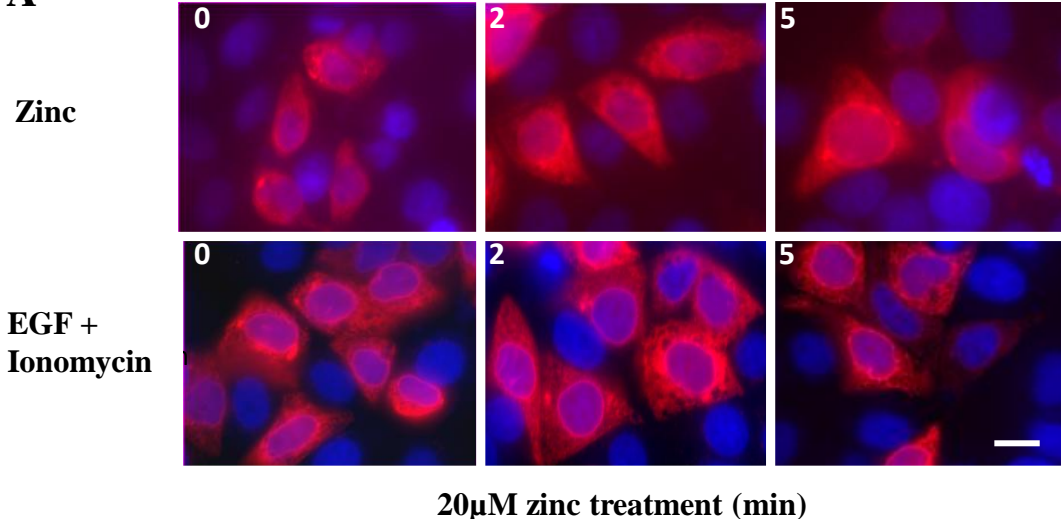
**Figure 4****A****Zinquin loaded cells treated for 20 min****B****Proximity ligation assay with ZIP7 and CK2 $\alpha$** **C****D**

**Figure 5**

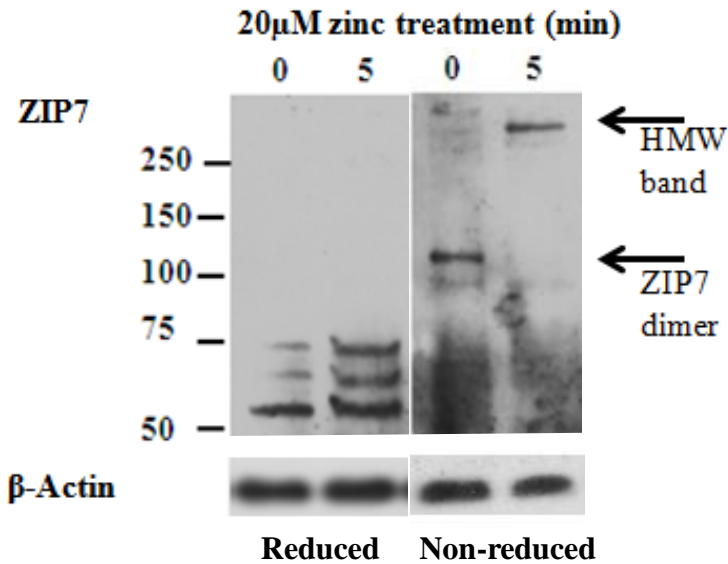


**Figure 6**

**A**



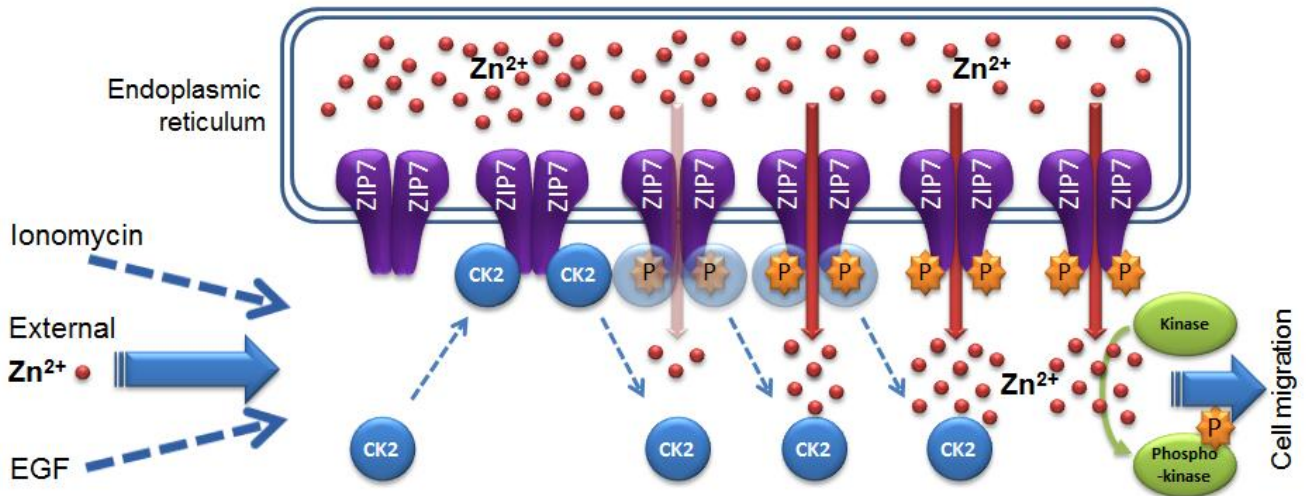
**B**





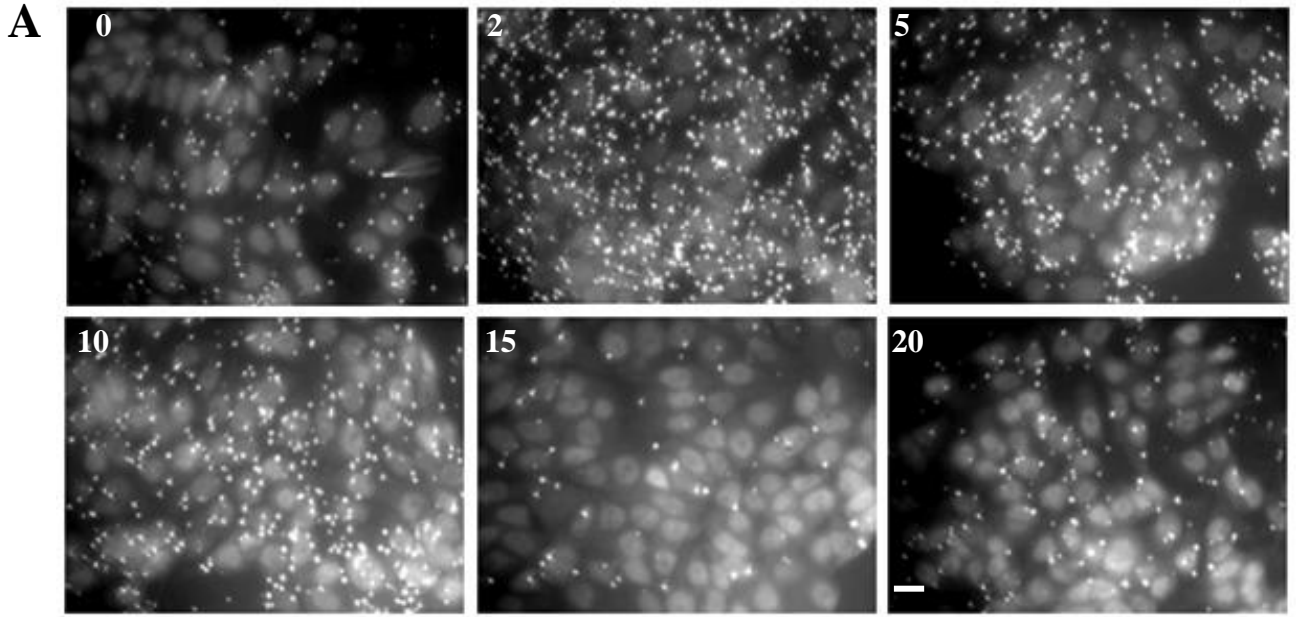
**Figure 7**

Time in minutes	0	2	5	10	15	20
CK2 binds to ZIP7		✓✓✓	✓	✓		
Ser phos of ZIP7		✓✓✓	✓✓	✓		
ZIP7-dependant Zn release			✓	✓✓	✓✓✓	✓✓✓
Phospho-Tyrosine		✓	✓✓	✓✓	✓✓✓	✓✓✓
Phosphorylated AKT		✓	✓	✓✓	✓✓	✓✓✓
Phosphorylated ERK1/2			✓	✓✓	✓✓	✓✓

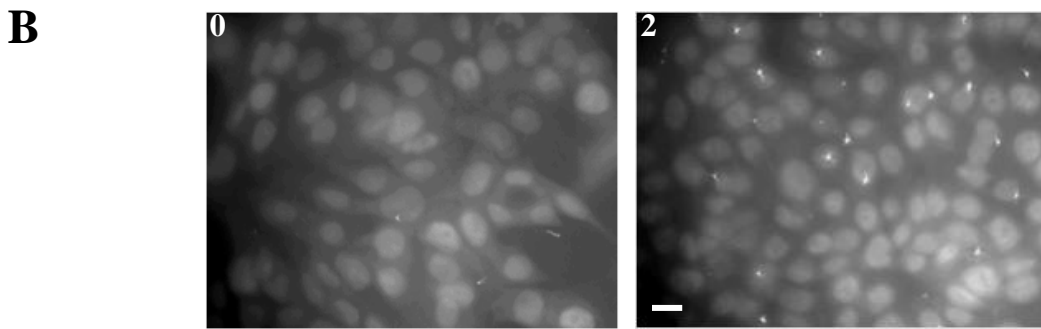


# Supplementary Figures

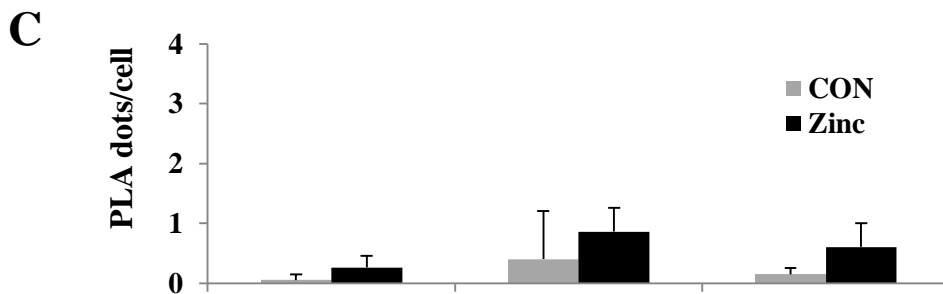
Figure S1



Treatment time (min)



zinc treatment time (min)



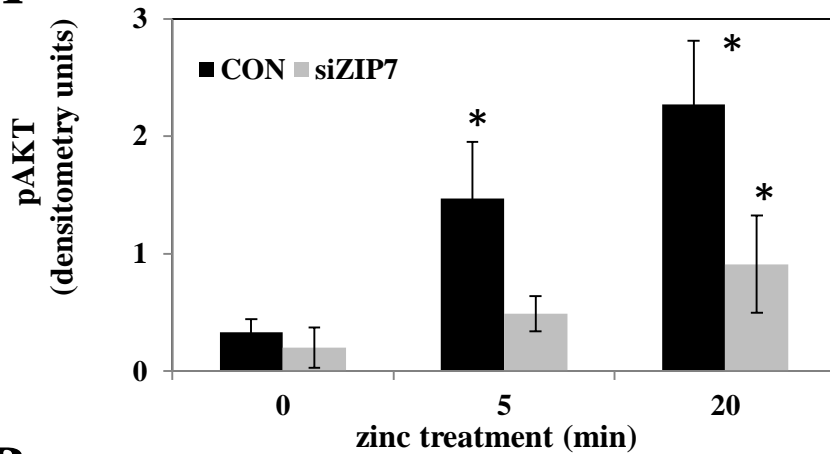
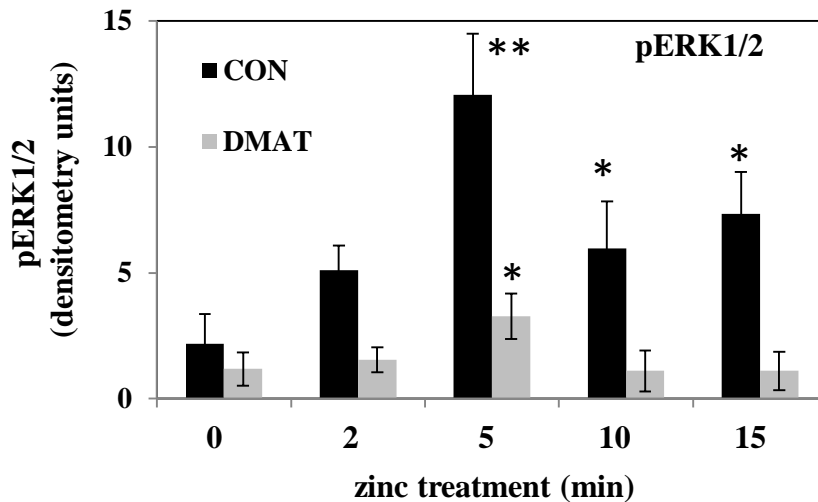
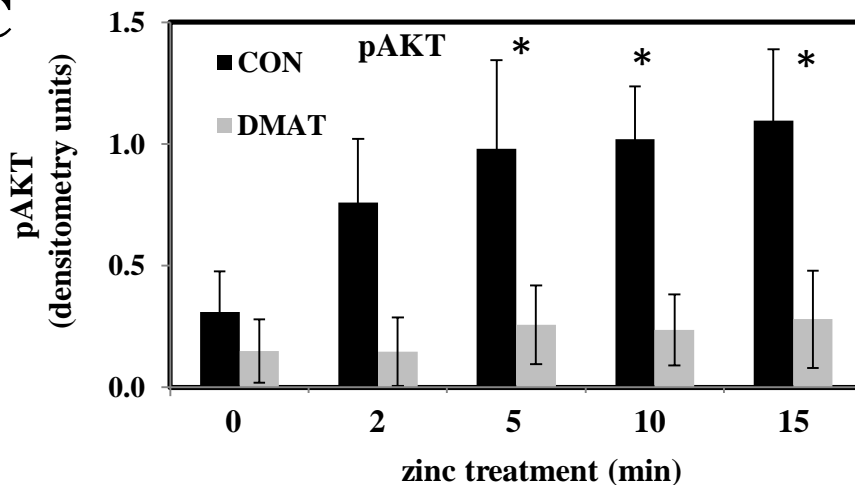
Duolink Reagents

ZIP7 antibody

CK2 antibody

Proximity Ligation assay images and control results. (A) Representative figures of proximity ligation assay of ZIP7 and CK2 $\alpha$  stimulated with zinc in Fig 1E Scale bar = 10 $\mu$ m. (B) Representative figures of no antibody controls for proximity ligation assay in Figs 1E and 4B. Scale bar = 10 $\mu$ m. (C) Control results for proximity ligation assay lacking single and both antibodies and representative of n=3 experiments and expressed as mean  $\pm$ SD



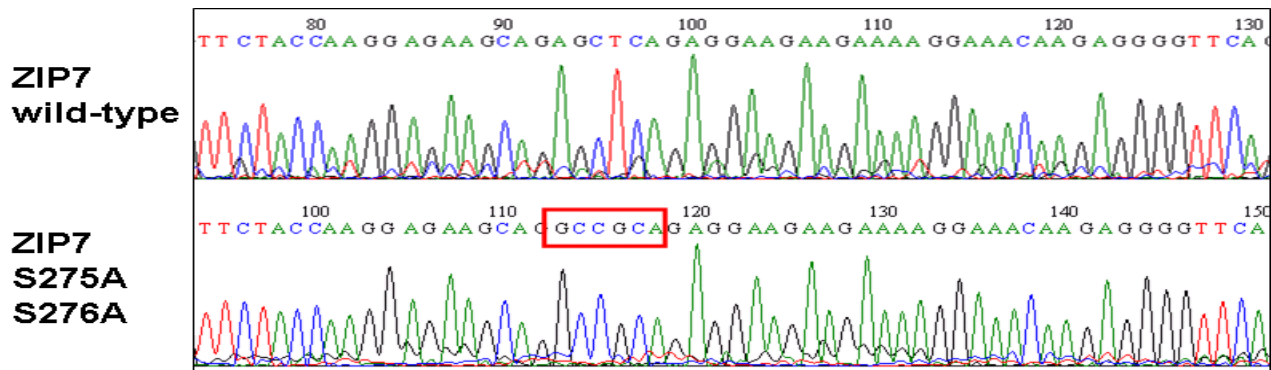
**Figure S2****A****B****C**

Densitometry analysis of pooled Western Blot results for Fig. 2. (A) Densitometry analysis of pooled Western Blot results from Fig 2D from n=3 experiments and expressed as mean  $\pm$ SD. \* denotes significance from time zero ( $P \leq 0.05$ ). (B) Densitometry analysis of pooled Western Blot results from Fig 2E from n=3 experiments and expressed as mean  $\pm$ SD. \* denotes significance from time zero ( $P \leq 0.05$ ) and \*\* denotes  $P \leq 0.001$ . (C) Densitometry analysis of pooled Western Blot results from Fig 2E from n=3 experiments and expressed as mean  $\pm$ SD. \* denotes significance from time zero ( $P \leq 0.05$ ).

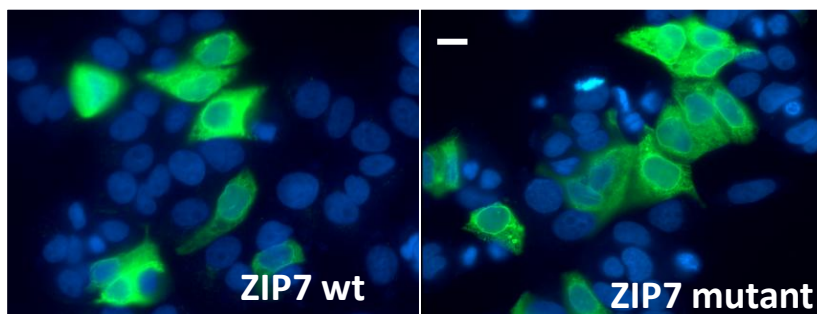
# Figure S3

## A

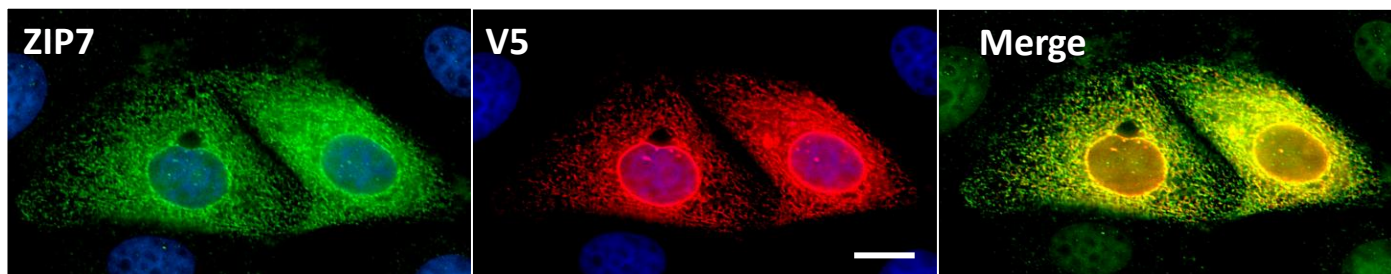
AGCTCA (Ser Ser) changed to GCCGCA (Ala Ala)



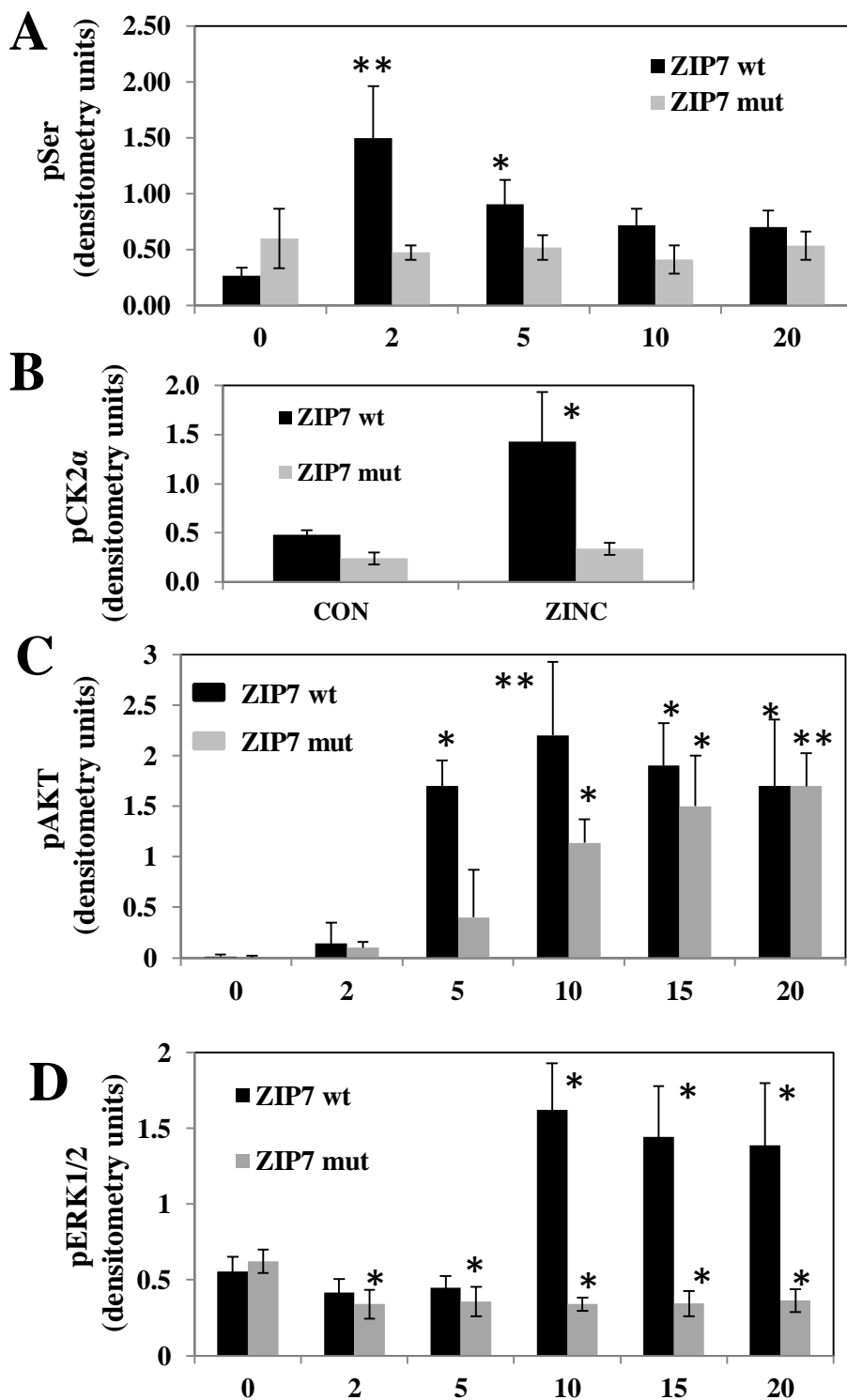
## B



## C



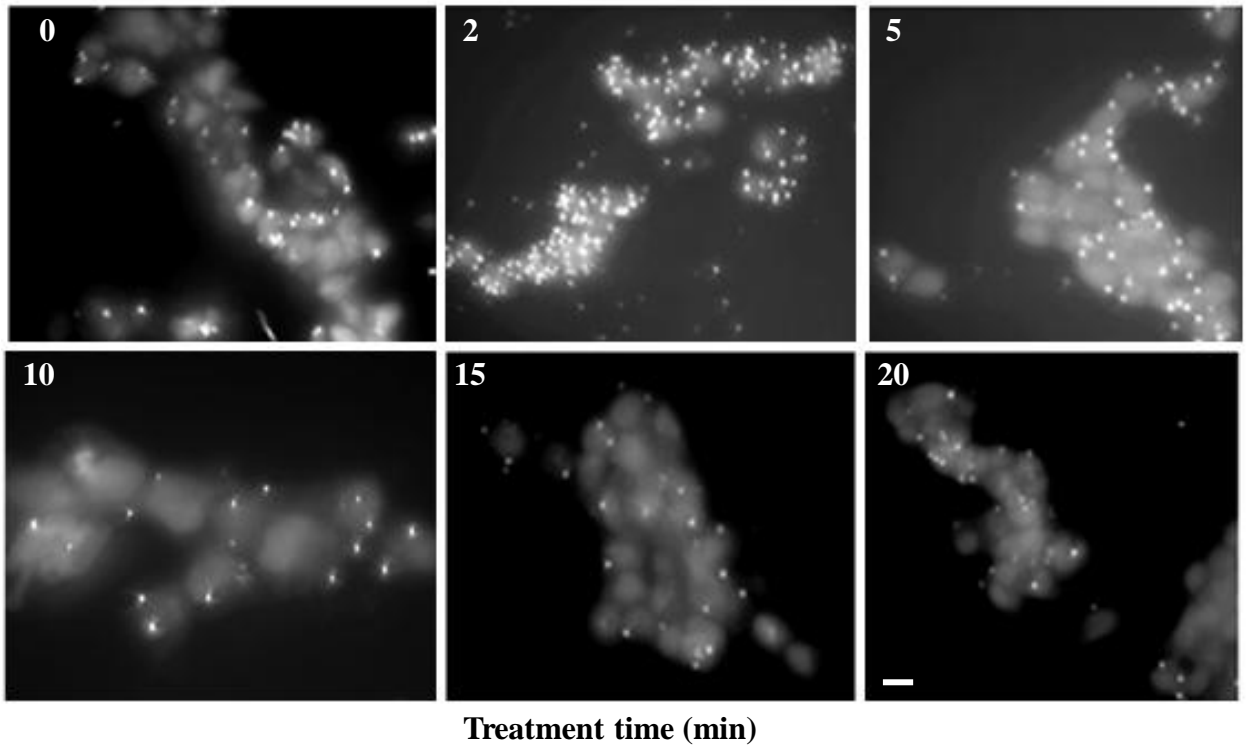
Characterisation of ZIP7 mutants and ZIP7 antibody. (A) Sequencing demonstration of S275 and S276 mutated to A275 and A276 in ZIP7 sequence. (B) MCF-7 cells transfected with either wild-type or mutant ZIP7 and probed with V5 antibody conjugated to Alexa-Fluor 488 (green). Nuclei stained blue with DAPI. Scale bar = 10µm. (C) MCF-7 cells transfected with wild-type ZIP7 and probed with ZIP7 antibody conjugated to Alexa-Fluor 488 (green), V5 antibody conjugated to Alexa-Fluor 594 (red) and nuclei stained blue with DAPI. Scale bar = 10µm.

**Figure S4**

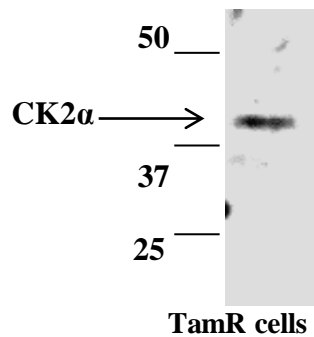
Densitometry analysis of pooled Western Blot results for Fig.3. (A) Densitometry analysis of pooled Western Blot results from Fig 3A from n=3 experiments and expressed as mean  $\pm$ SD. \* denotes significance from time zero ( $P \leq 0.05$ ) and \*\* denotes ( $P \leq 0.001$ ). (B) Densitometry analysis of pooled Western Blot results from Fig 3C from n=3 experiments and expressed as mean  $\pm$ SD. \* denotes significance from time zero ( $P \leq 0.05$ ). (C) Densitometry analysis of pooled Western Blot results from Fig 3E from n=3 experiments and expressed as mean  $\pm$ SD. \* denotes significance from time zero ( $P \leq 0.05$ ) and \*\* denotes ( $P \leq 0.001$ ). (D) Densitometry analysis of pooled Western Blot results from Fig 3E from n=3 experiments and expressed as mean  $\pm$ SD. \* denotes significance from time zero ( $P \leq 0.05$ ).

# Figure S5

## A



## B



Proximity ligation assay images and CK2α antibody control. (A) Representative figures of proximity ligation assay of ZIP7 and CK2α stimulated with EGF and ionomycin in Fig 4B Scale bar = 10μm. (B) CK2α antibody recognises a single band on Western Blot of appropriate size in TamR cells