

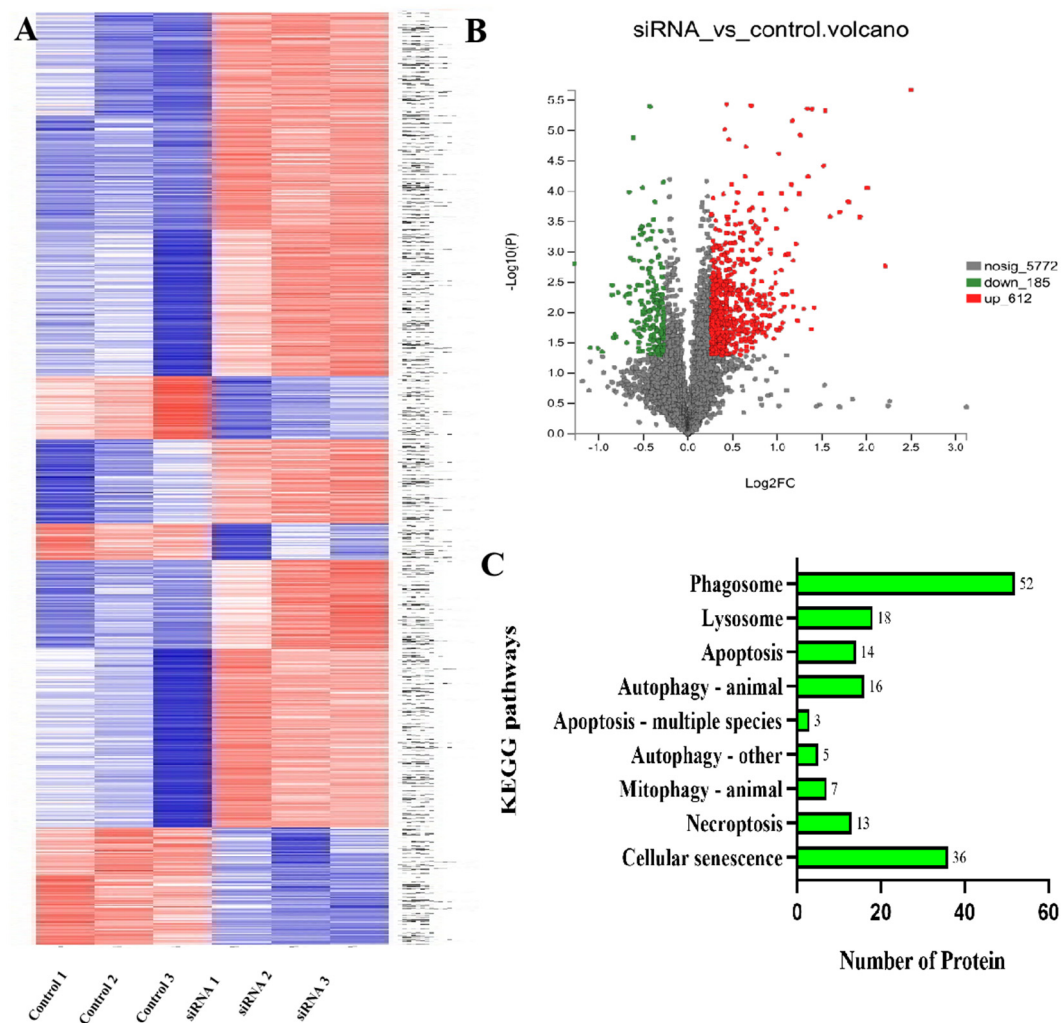
**Figure S1. The impaired UPR<sup>er</sup> in ccpg1 overexpression cells**

A: Detection nuclear protein in UPR<sup>er</sup> by western blot and results in over-expression of ccpg1 cell;

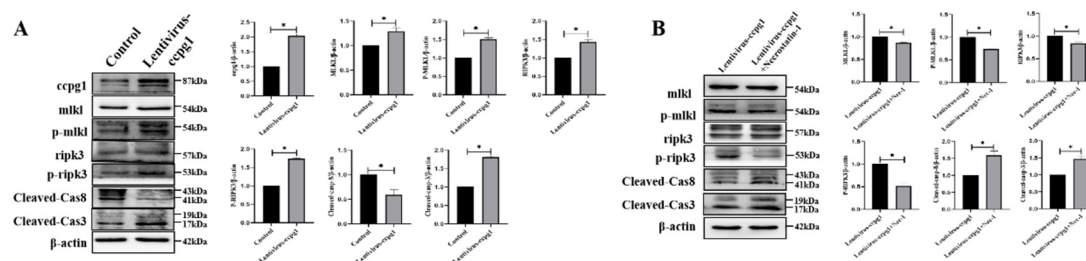
B: Localization of ATF4 (red), CHOP (red), XBP1s (red), ATF6 (red) in CCPG1 overexpression granulosa cells

$\beta$ -actin was used as a reference protein, \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$ .

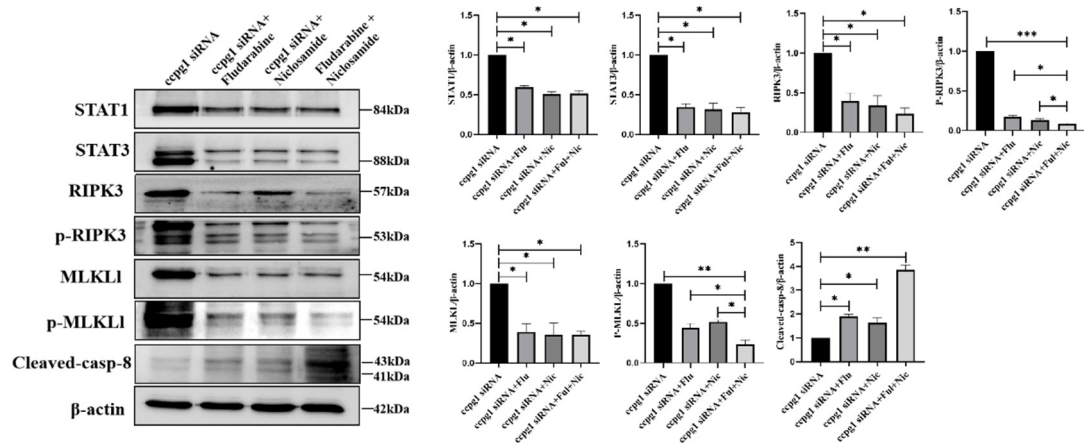
Nuclei stained with DAPI (blue). Scale bar: 5  $\mu$ m.



**Figure S2. The results and analysis of proteome in ccp1 knockdown and control cells**  
A: The heatmap of knockdown ccp1; B: The volcano plots of down and up-regulated proteins; C: KEGG enrichment of cell death related pathway.



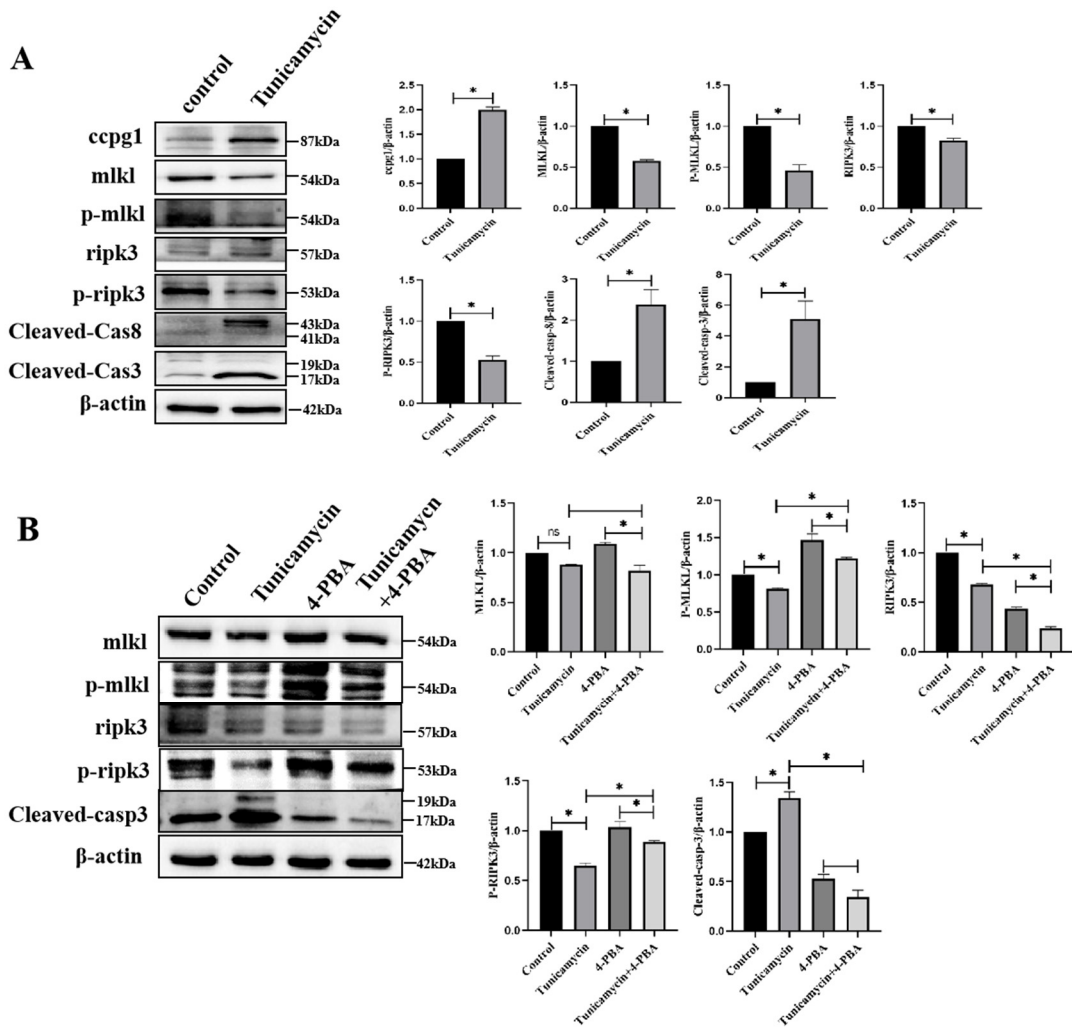
**Figure S3. Activated necroptosis in up-regulated ccp1 cells**  
A: Detection cell necroptosis by western blot and results in over-expression of ccp1 cell;  
B: Detection cell necroptosis by western blot and results in necroptosis inhibitor treated cells.  
 $\beta$ -actin used as reference protein, \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$



**Figure S4. The necroptosis was coordinately regulated by STAT1 and STAT3**

Detection cell necroptosis by western blot and results in siRNA ccpg1 treated cells, siRNA ccpg1+Fludrabine (STAT1 inhibitor) treated cells, siRNA ccpg1+Niclosamide (STAT3 inhibitor) treated cells, siRNA CCPG1+Fludrabine+Niclosamide treated cells

$\beta$ -actin used as reference protein, \*\*\* $p$  < 0.001, \*\* $p$  < 0.01, \* $p$  < 0.05



**Figure S5. Activated necroptosis negatively related with ER stress mediated apoptosis**

A: Detection cell necroptosis by western blot and results in tunicamycin treated and control cell;

B: Detection cell necroptosis by western blot and results in ER stress inhibitor 4-PBA, 4-PBA+tunicamycin, tunicamycin treated and control cells.

$\beta$ -actin used as reference protein, \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$