

### Supplementary Figure Legends

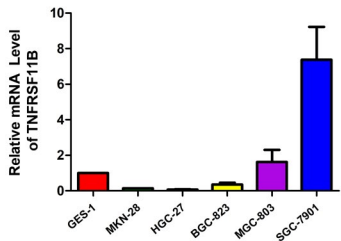
**Figure S1.** The expression of TNFRSF11B in GC cells. (A) The mRNA expression of TNFRSF11B in GC cell lines. (B and C) The protein expression of TNFRSF11B was enhanced in HGC-27 and BGC-823 TNFRSF11B overexpression groups in comparison to the Mock groups. (D and E) The protein expression of TNFRSF11B was decreased in MGC-803 and SGC-7901 TNFRSF11B knockdown groups.

**Figure S2.** Gastric cancer cell cycle analysis by flow cytometry. (A and B) In cell cycle progression, there is no significant differences in HGC-27 and BGC-823 TNFRSF11B overexpression cells versus control cells ( $P>0.05$ ). (C and D) There is no significant differences in MGC-803 and SGC7901 knockdown cells versus control cells ( $P>0.05$ ).  $. *p<0.05$ ,  $**p<0.01$ ,  $***p<0.001$ , ns: no significance

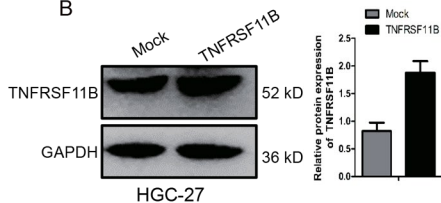
**Figure S3.** TUNEL assay for gastric cancer cells. (A) The apoptotic cell rate in the BGC-823 TNFRSF11B overexpression group was significantly lower than the control group. (B) The apoptotic cell rate in the SGC-7901 TNFRSF11B knockdown group was significantly higher than the control group.  $. *p<0.05$ ,  $**p<0.01$ ,  $***p<0.001$

**Figure S4.** The correlation between AXIN2, LGR5, LRP6 with TNFRSF11B expression in human GC. (A) TNFRSF11B was significantly correlated with AXIN2, LGR5 and LRP6 in TCGA database. (B) Overexpression of TNFRSF11B increased the expression of AXIN2, LGR5 and LRP6 in BGC-823 cells. (C) Knockdown of TNFRSF11B decreased the expression of AXIN2, LGR5 and LRP6 in MGC-803 cells.

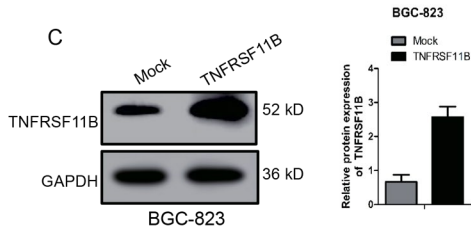
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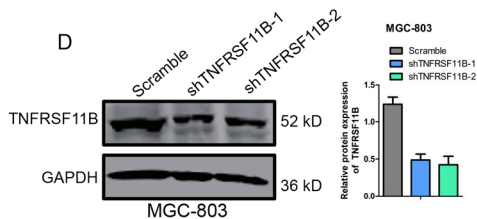
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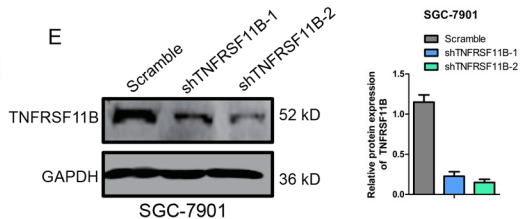
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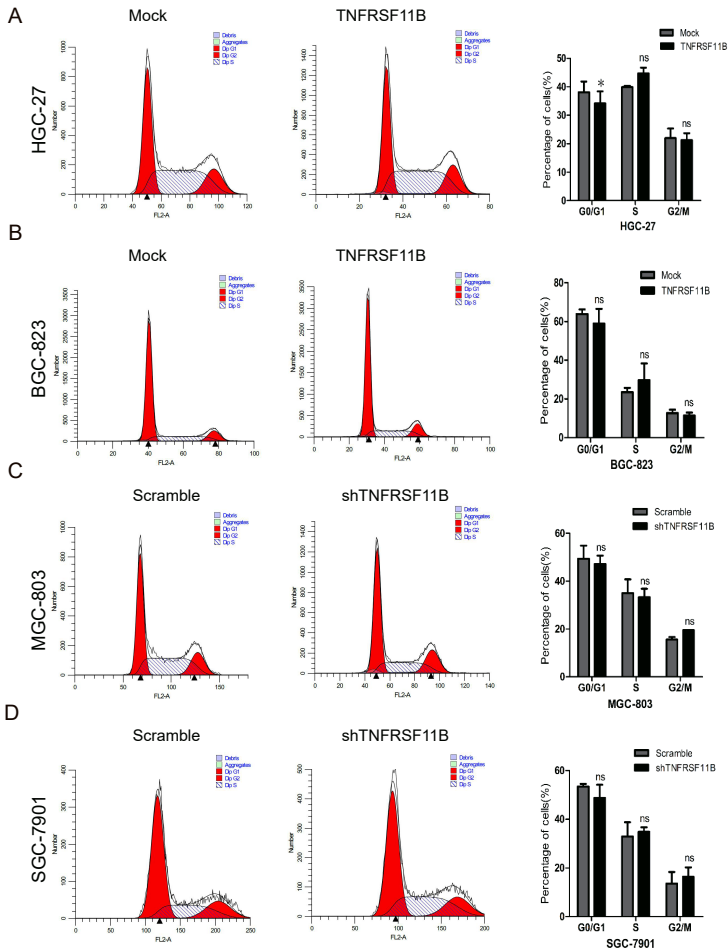


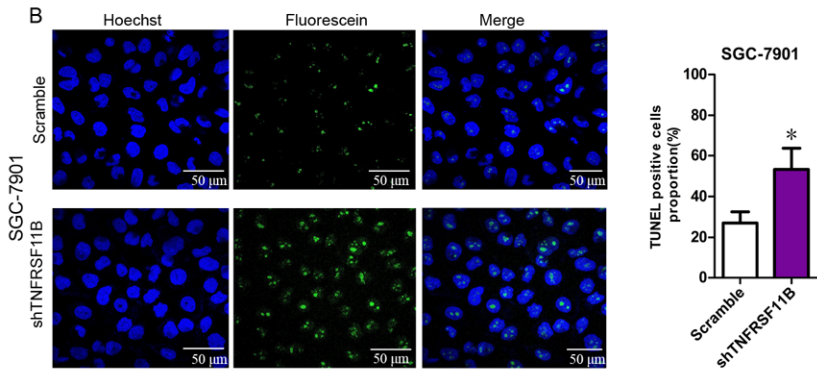
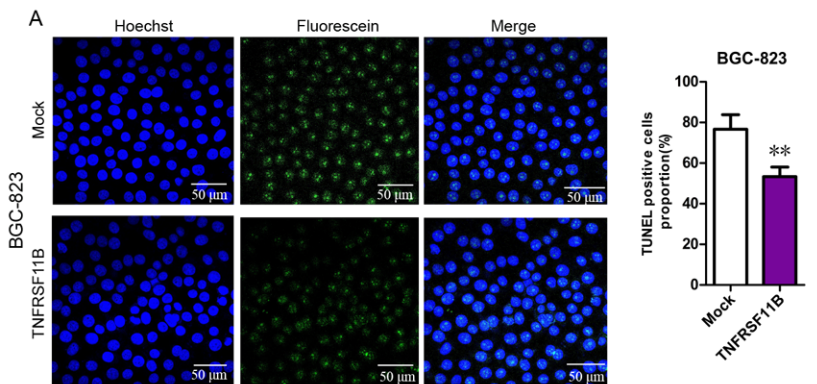
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E

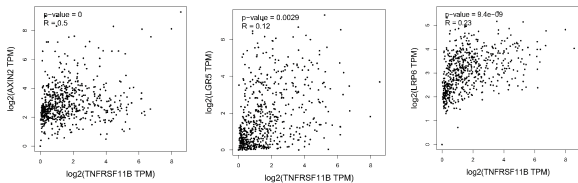




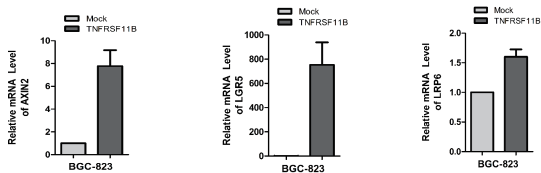




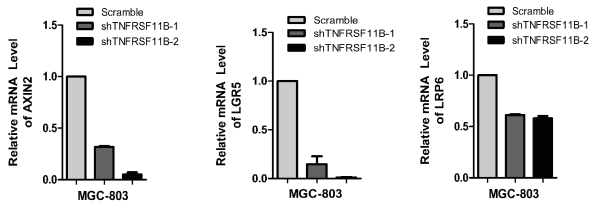
A



B



C



**Table S1** Predictors of mortality using the univariate and multivariate Cox proportional hazard model among participants (n=70)

Covariates	Univariate analysis			Multivariate analysis		
	HR	95%CI	P	HR	95%CI	P
<b>Gender</b>						
Male	Reference					
Female	1.052	0.541-2.044	0.882			
<b>Age, years</b>						
≤60	Reference					
>60	1.887	1.041-3.422	0.037*	1.601	0.754-3.397	0.220
<b>Tumor location</b>						
Cardiac	Reference					
Non cardiac	0.597	0.318-1.121	0.109			
<b>Tumor size</b>						
≤4cm	Reference					
>4cm	2.111	1.162-3.838	0.014*	1.646	0.835-3.244	0.150
<b>Differentiation</b>						
Low	Reference					
Medium-low	0.916	0.475-1.767	0.794			
Medium	0.924	0.349-2.448	0.874			
High	1.519	0.357-6.471	0.572			
<b>Vascular invasion</b>						
Absent	Reference					
Present	2.186	1.170-4.086	0.014*	1.199	0.548-2.622	0.650
<b>Depth of invasion</b>						
T1-2	Reference					
T3-4	26.543	0.748-941.847	0.072			
<b>Lymph node</b>						
N0	Reference					
N1	2.046	0.342-12.252	0.433			
N2	7.942	1.781-35.416	0.007*	7.086	1.442-34.823	0.016*
N3	11.727	2.766-49.720	0.001*	12.027	2.498-57.920	0.002*
<b>Distant metastasis</b>						
M0	Reference					
M1	3.174	1.393-7.232	0.006*	1.074	0.399-2.896	0.887
<b>TNFRSF11B expression</b>						
Negative	Reference					
Positive	2.160	1.000-4.664	0.050			

**Note:** \* $P < 0.05$

**Abbreviations:** TNFRSF11B, Osteoprotegerin.