Supplementary Table S1. List of primers used in these experiments.

ATF4-F	5′- GTTCTCCAGCGACAAGGCTA-3′
ATF4-R	5′- ATCCTGCTTGCTGTTGTTGG-3′
BiP-F	5′- TGTTCAACCAATTATCAGCAAACTC-3′
BiP-R	5′- TTCTGCTGTATCCTCTTCACCAGT-3′
CHOP-F	5′- AGAACCAGGAAACGGAAACAGA-3′
CHOP-R	5′- TCTCCTTCATGCGCTGCTTT-3′
SOX2OT-F	5′- GCTCGTGGCTTAGGAGATTG -3′
SOX2OT-R	5′- CTGGCAAAGCATGAGGAACT -3′
SOX2-F	5′-AACCCCAGATGCACAA CTC-3′
SOX2-R	5′-GCTTAGCCTCGTCGATGAAC-3′
XBP1s-F	5′- CCTGGTTGCTGAAGAGGAGG-3′
XBP1s-R	5′- CCATGGGGAGATGTTCTGGAG -3′
HPRT-F	5′-TGAGGATTTGGAAAGGGTGT-3′
HPRT-R	5′-GCACACAGAGGGCTACAATG-3′
GAPDH-F	5′-ACGGG AAGCTTGTCATCAAT-3′
GAPDH-R	5′-TGGACTCCACGACGTACTCA-3′
HPRT-F	5′-TGAGGATTTGGAAAGGGTGT-3′
HPRT-R	5′-GCACACAGAGGGCTACAATG-3′

MCF-7   **T47**

BIP

PERK   ← P / ← O

α-tubulin
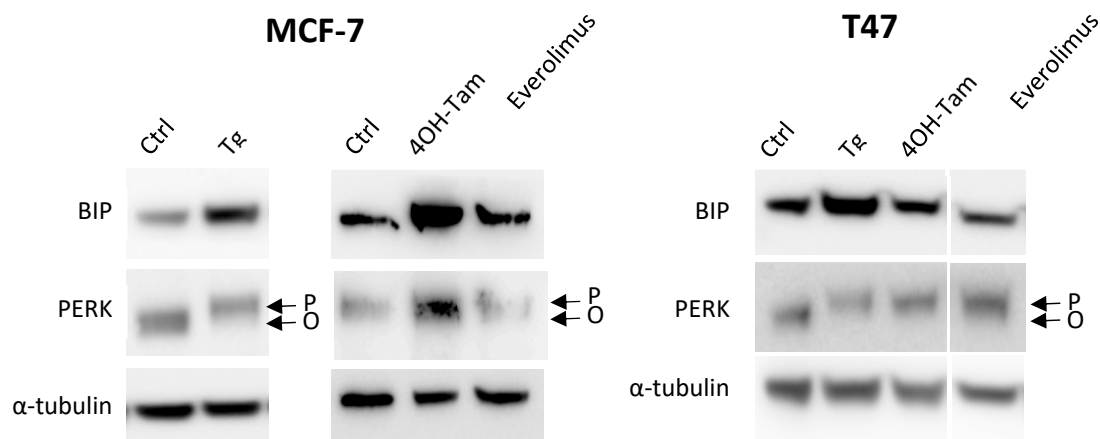
Supplemental Figure S1: Expression of *SOX2OT* lncRNA and *SOX2* following UPR induction in ER+ breast cancer cell lines. MCF-7 (A) and T47D (B) cells were incubated in control medium (Ctrl) or in medium containing the ER stress-inducing agents thapsigargin (Tg, 300 nM), 4OH-Tam (0.1uM) or everolimus (10nM) for 16h. Protein expression levels of PERK and BIP protein expression were examined using Western Blot analysis. O and P indicate mobility changes for PERK proteins nonactivated or activated by phosphorylation, respectively. α-tubulin was used as internal control. Blots of Bip, PERK, and α-tubulin have been performed on the same electrophoresis gel, but cut and reconstituted.
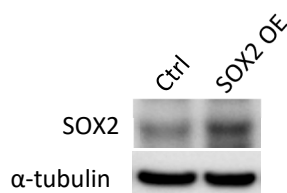
SOX2

α-tubulin

Supplemental Figure S2: Comparison of SOX2 expression in control and SOX2 overexpressing MDA-MB-231. SOX2 protein expression was examined using Western Blot analysis. α-tubulin was used as internal control. Ctrl, control; SOX2 OE, SOX2 overexpression.

Supplementary Table S2. Spearman correlation coefficients of relative gene expression for *SOX2OT*
compared to the expression of genes of the UPR pathways in TGCA Her2 neg/pos or Hormone neg/pos samples
(n = 478)

Her2neg/HRpos# *n=279*	*ATF4*	*CHOP*	*GADD*	*PDIA4*	*XBP1*	*BiP*
SOX2OT	-0.0252	**-0.159****	**-0.132***	-0.0655	**0.296****	**0.119***
p value	0.676	**0.00768**	**0.0280**	0.275	**5.61E-7**	**0.0471**
Her2neg/HRneg## *n=84*						
SOX2OT	-0.145	-0.181	**-0.227***	**-0.364****	**0.474****	-0.209
p value	0.187	0.0999	**0.0381**	**7.10E-4**	**6.43E-6**	0.0563
Her2Pos/HRpos# *n=37*						
SOX2OT	-0.321	**-0.385***	-0.0749	0.0894	0.211	0.0756
p value	0.0530	**0.0190**	0.657	0.597	0.209	0.654
Her2Pos/HRneg## *n=18*						
SOX2OT	0.262	0.0975	-0.0332	-0.204	0.435	-0.362
p value	0.285	0.692	0.889	0.407	0.0699	0.136

#HRpos: hormone positive, ER or PR positive samples ##HRneg : hormone negative, ER or PR negative samples

*p<0.05; **p<0.01