

Figure S1. Correlation between ER and STARD4 in BRCA. Correlations between ER and STARD4 in (A) all types of BRCA, (B) HER2-positive BRCA, (C) luminal BRCA and (D) basal BRCA were analyzed using the Tumor Immune Estimation Resource database. BRCA, breast cancer; ER, estrogen receptor; STARD4, steroidogenic acute regulatory protein-related lipid transfer 4; TPM, transcripts per million.

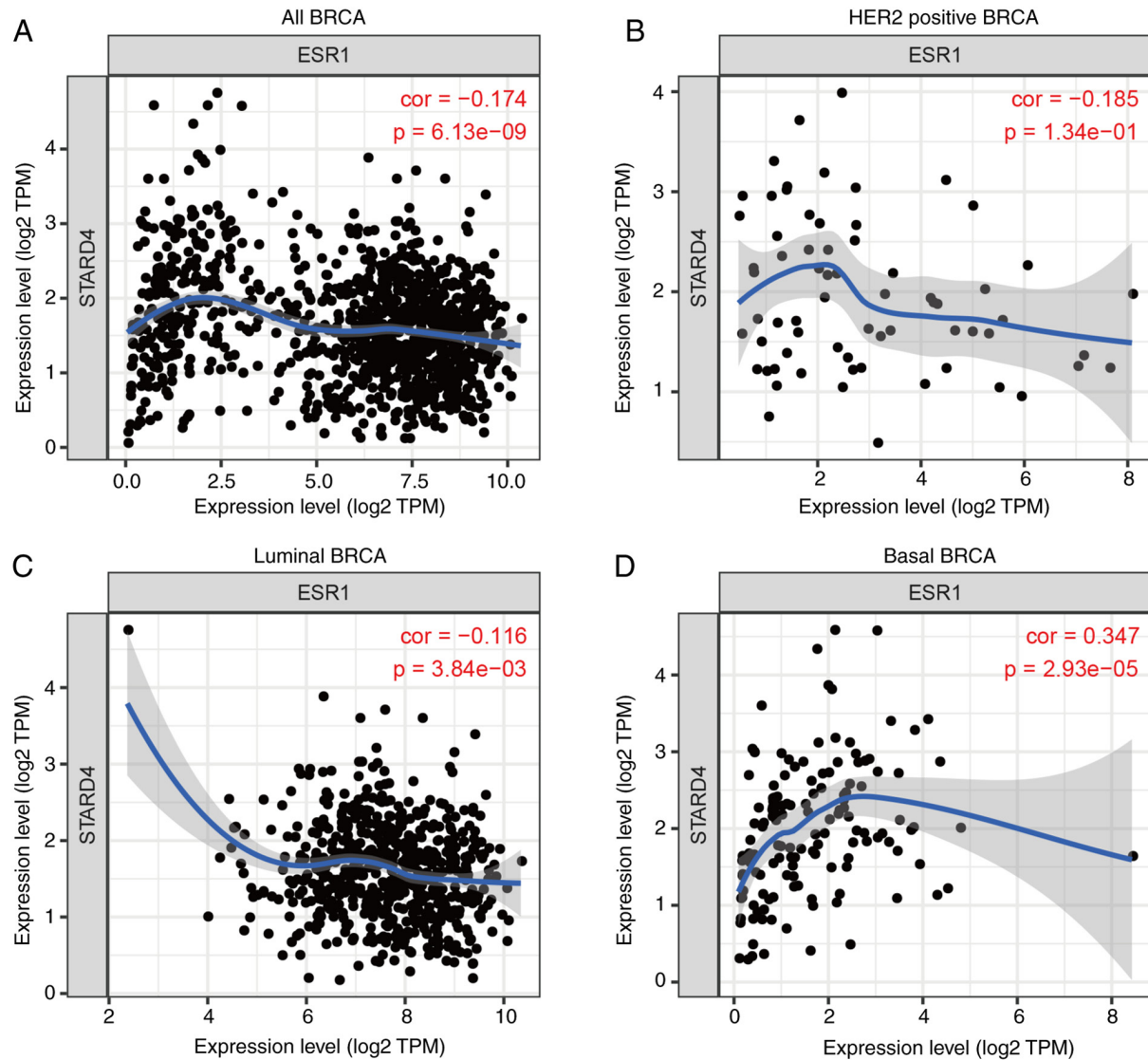


Figure S2. Association between distant metastasis-free survival and STARD4 expression in (A) luminal A, (B) luminal B and (C) HER2-positive breast cancer. HR, hazard ratio; STARD4, steroidogenic acute regulatory protein-related lipid transfer 4.

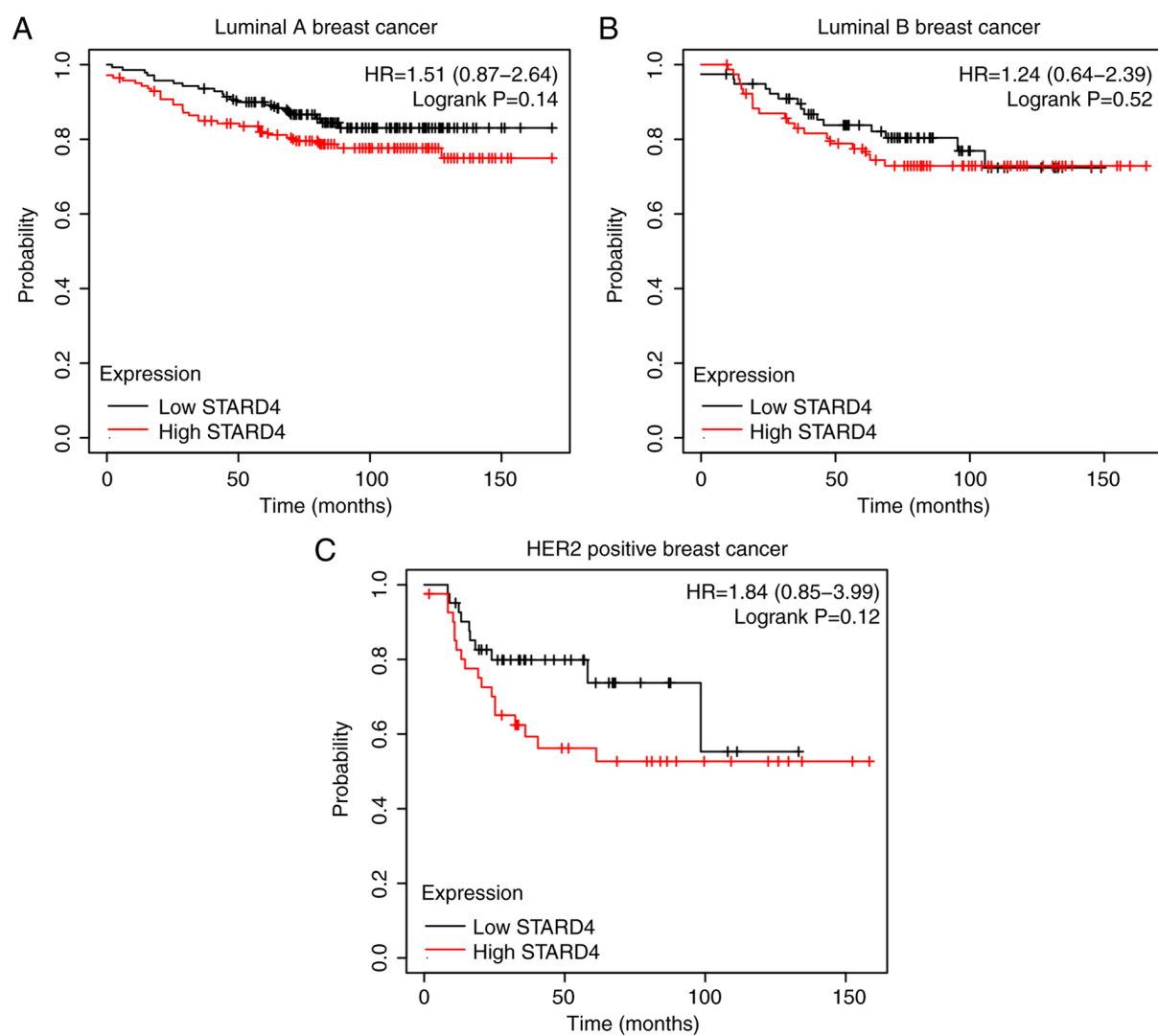


Table SI. Primers used in the present study.

Gene name	Forward primer (5'-3')	Reverse primer (5'-3')
GAPDH	TGACTTCAACAGCGACACCCA	CACCTGTTGCTGTAGCCAAA
STARD4	CTCTACAAAGCCCAAGGTG	TCATCAAGCTGTCCCAATC
PLA2G12A	CAGTGACGGATCTAAGCCTTTC	TCATAGCACCTGTCGTGTTGG
CDK1	GGATGTGCTTATGCAGGATTCC	CATGTACTGACCAGGAGGGATAG
CDKN1B	TAATTGGGGCTCCGGCTAACT	TGCAGGTGCGTTTCCTTATTCC
PRKAG2	GAGTTCGAGGACGAAGCAGTA	CTGGTTGGAACGATGTCATAACA
RHOJ	ACGACGAGAAGAAGATGTTGAA	GTGTCATACAGTCCGAGCAAG
HMOX1	AAGACTGCGTTCCTGCTCAAC	AAAGCCCCTACAGCAACTGTGC
H3F3A	GGCTCGTACAAAGCAGACT	GTTTCTTCACCCCTCCAGT
CCNE2	GGAACCACAGATGAGGTCCAT	CCATCAGTGACGTAAGCAAAC
PRKCH	GGGGAATAATGCGACAAGGAC	CCAACACTCGGATGAACCAA
HDAC6	ATCAGGTCTACTGTGGTCGTTAC	TTCTGGTGGGCGATGTTCTTC
RAP1A	ATTTTACGGGTAAAGGACAC	AAAAGGCACAGTTACACCA
JMJD7-PLA2G4B	CTAACTGAAGAGGGCACCTTTAAG	AGGACACGAACCGTGAGCAG
PAK2	CACCCGCAGTAGTGACAGAG	GGGTCAATTACAGACCGTGTG
CDK6	CCTTAGCACAGCACCCAC	GGGATTTCTCAGCCAGT
DDIT4	TCCGAGTCATCAAGAAGAAGC	TCTCCACCCCAAAAGTTCAGT
CDK2	CTGGACACTGAGACTGAGG	GAGGACCCGATGAGAATGG
CCNE1	AGGTTTCAGGGTATCAGTGGTGC	CTTTCTTTGCTCGGGCTTTGTCC
RPS15A	CTCCAAAGTCATCGTCCGGTT	TGAGTTGCACGTCAAATCTGG
RAPGEF1	AGTGCCCTGCGCTACTTTAAG	GGCTTTGGTACACTCGGCTAT
RHEB	TGCTCGGTGATGTGATTC	GGAAGTGAATCATTGAGAC
ITGA5	GGCTTCAACTTAGACGCGGAG	TGGCTGGTATTAGCCTTGGGT
PIK3R1	ACCACTACCGGAATGAATCTCT	GGGATGTGCGGGTATATTCTTC
H3F3B	GAAGCGTACCTGGTGGGTC	TCTTTGGGCATGATGGTGA
RPS2	CTGCCTATTAAGGAATCAGA	GGAGCACTTAACACCCAGAC
PLD6	TCCAGAACAACAGGGAGAATG	GTTAGGTTTGGCTTTCGCTG
CREB1	CTGCTCCCACCGTAACTCT	CTTCAATCCTTGGCACTCC
ELF1	CTTCCCCAATCTACAGGAGCC	AAGCTTCTTGGCCTTCAAGTATT
EIF4A2	GAGTTCAAGGAGACCCAAG	CCACGGCTCAACATTTTC
PRKCE	GAGCCTCGTTACGGTTCTAT	GTAGTCAGGAGTCCCACAGAA
FKBP1A	TGATCCGAGGCTGGGAAGAAG	CCATCAAACGCTGGGCATAAC
RPSA	GCAGCAGGAACCCACTTAGG	GGCAGCAGCAAACCTTCAGC
GRB2	TTAGCAAACAGCGGCACGAT	AATTGAACTTCACCACCCAGA

Table SII. Antibodies used in the present study.

Antibody	Species	Supplier	Cat. no.	Dilution
Integrin alpha 5	Rabbit	Abcam	ab150361	1:1,000
AMPK g2	Rabbit	Thermo Fisher Scientific, Inc.	38-4200	1:1,000
ELF1	Goat	Thermo Fisher Scientific, Inc.	PA5-18072	1:1,000
CREB	Rabbit	Abcam	ab31387	1:1,000
PKC epsilon	Rabbit	Abcam	ab124806	1:1,000
Histone H3.3	Rabbit	Abcam	ab176840	1:1,000
PAK2	Rabbit	Cell Signaling Technology, Inc.	#2615	1:1,000
STARD4	Rabbit	Abcam	ab202060	1:1,000
GAPDH	Mouse	Santa Cruz Biotechnology, Inc.	sc-32233	1:1,000
Rabbit IgG		Cell Signaling Technology, Inc.	#7074	1:5,000
Mouse IgG		Cell Signaling Technology, Inc.	#7076	1:5,000
Mouse anti-goat IgG-HRP		Santa Cruz Biotechnology, Inc.	sc-2354	1:5,000