

**Table S1. Correlation between Notch3 expression and clinicopathological factors in patients with breast cancer**

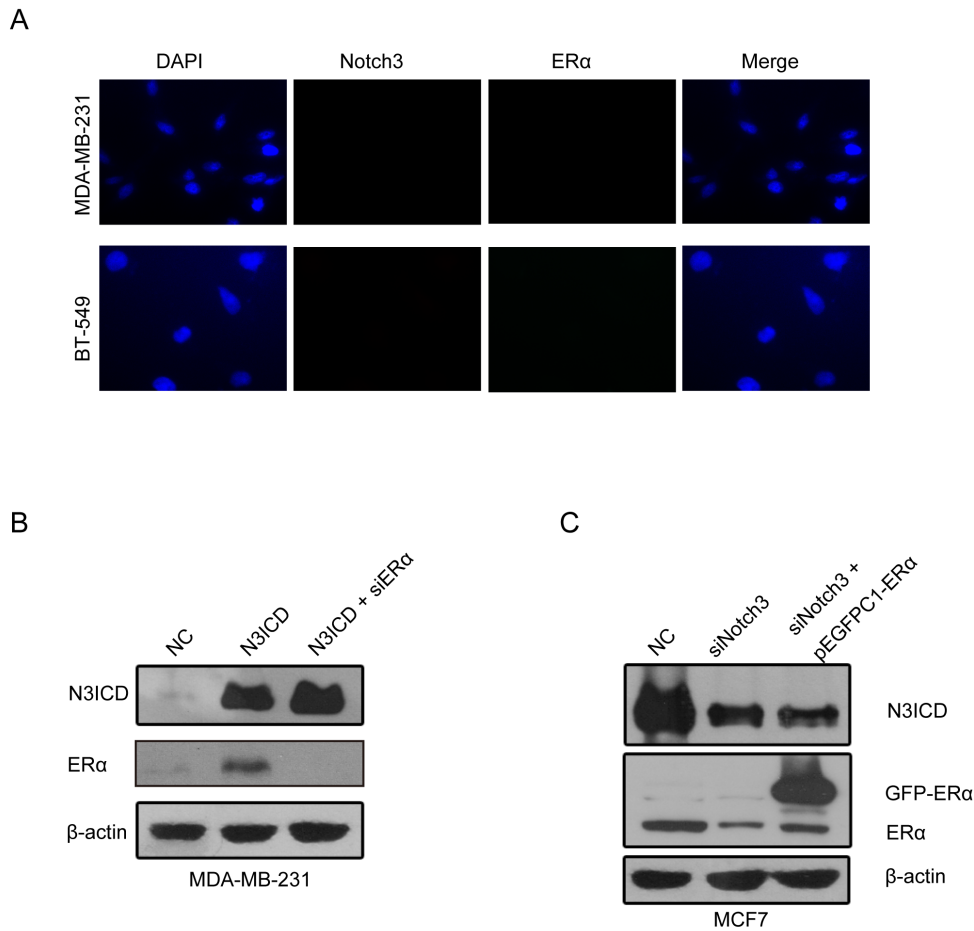
Clinicopathological features	Notch3 (n=60)		$\chi^2$	P value
	Negative (n=17)	Positive (n=43)		
<b>Age (year)</b>				
<50	11	19	2.052	0.252
≥50	6	24		
<b>Menstrual conditions</b>				
premenopausal	11	27	0.019	1
postmenopausal	6	16		
<b>Tumor size (cm)</b>				
<2	0	3	2.144	0.37
≥2, <5	12	24		
≥5	4	15		
<b>LN metastasis</b>				
Negative	2	18	4.966	0.034*
Positive	15	25		
<b>Stage</b>				
I	0	1	1.071	0.871
II	6	20		
III	9	21		
IV	0	1		
<b>ER expression</b>				
Negative	11	13	6.033	0.020*
Positive	6	30		
<b>PR expression</b>				
Negative	12	13	8.163	0.008**
Positive	5	30		
<b>HER-2 expression</b>				
Negative	15	26	3.573	0.111
Positive	2	15		

**Table S2. Oligonucleotide sequences for siRNA constructs used in real-time PCR and CHIP and EMSA assays**

Assay	Sequences (5' to 3')	Amplicon (bp)
<b>RT-PCR</b>		
Notch3	F ATGCAGGATAGCAAGGAGGA	86
	R AAGTGGTCCAACAGCAGCTT	
ER $\alpha$	F CTCTCCCACATCAGGCACA	157
	R CTTTGGTCCGTCTCCTCCA	
E-cadherin	F AAAGGCCCATTTCTATAAAACCT	172
	R TGC GTTCTCTATCCAGAGGCT	
Vimentin	F GACCCATCAACACCGAGTT	238
	R CTTTGTGCTTGGTTAGCTGGT	
$\beta$ -actin	F GAGACCTCAACACCCAGCC	264
	R AATGTCACGCACGATTTCCC	
<b>siRNA</b>		
siNotch3 #1	UAUAGGUGUUGACGCCAUCCACGCA	
siNotch3 #2	GAGCCAAUAAGGACAUGCA	
siER $\alpha$	CGAGUAUGAUCCUACCAGA	
siNC	UUCUCCGAACGUGUCACGU	
<b>ChIP</b>		
ER $\alpha$ P1	F CAGTTCCCCCAGCTGCTAAA	
	R GGCTTTCTCTAATGTGCTGCCTTA	
ER $\alpha$ P2	F GGGCACATAAGGCAGCACAT	
	R CCCTGACATTGGCTTAAACATCAC	
NC	F AACTGAGGTCCTGGCAGGTT	
	R CGTTGGCTAGAAATACGTAGTG	
<b>EMSA</b>		
probe or competitor 1 (P1)	AACGAGGAGGGGGAATCAAACAG	
P1 mutant	AACGAGGAGGTGTCTTCAAACAG	
probe or competitor 1 (P2)	TAAAGTTCAAGGAAGCTGCTCTTT	
P2 mutant	TAAAGTTCAATAGCGCTGCTCTTT	

**Table S3. Proteins and description of corresponding antibodies**

<b>Antibodies</b>	<b>Vendor</b>	<b>Source</b>	<b>Catalog NO.</b>
Notch1	CST	Rabbit/mono	3439
Notch2	CST	Rabbit/mono	4530
Notch3	CST	Rabbit/mono	5276
Notch4	CST	Mouse/mono	2423
ER $\alpha$	CST	Rabbit/mono	8644
E-cadherin	CST	Rabbit/mono	3195
Vimentin	CST	Rabbit/mono	5741
P27	Santa Cruz	Rabbit/mono	3686
$\beta$ -actin	Santa Cruz	Mouse/mono	Sc-47778
ER $\alpha$	Santa Cruz	Mouse/mono	Sc-8002
Notch3	Santa Cruz	Rabbit/mono	Sc-5593



**Supplementary Figure 1 (A)** Immunofluorescence staining for Notch3 and ER $\alpha$  in MDA-MB-231 (upper panel) and BT-549 (bottom panel) cells. Nuclei were stained with DAPI (4', 6-diamidino-2-phenylindole). A merged image was obtained by combining Notch3, ER $\alpha$  and DAPI fluorescent staining images. **(B)** Western blot showing the protein levels of N3ICD and ER $\alpha$  after overexpressing N3ICD and transfecting ER $\alpha$  RNAi in MDA-MB-231 cells. **(C)** Western blot showing the protein levels of Notch3 and ER $\alpha$  after transfecting Notch3 RNAi and overexpressing pEGFPC1-ER $\alpha$  in MCF-7 cells.