

Supplemental Table 1. Clinical Characteristics of the invasive breast cancers (n=61)

T stage		Grade	
T1	2	I	16
T1a	5	II	31
T1b	11	III	13
T1c	19	Unknown	1
T2	21		
T3	1		
T4	2		
N stage		ER Status	
N0	31	Positive	45
N1	24	Negative	14
N2	1	Unknown	2
N3	2		
Unknown	3		
M stage		PgR Status	
M0	51	Positive	36
M1	7	Negative	23
Unknown	3	Unknown	2

Supplemental Table 2. Primers and probes information

Gene	Forward 5'-3'	Probe 6FAM 5'-3' TAMRA	Reverse 5'-3'	Genbank #	Amplicon Size	Annealing temperature
ACTB	TGG TGA TGG AGG AGG TTT AGT AAG T	ACC ACC ACC CAA CAC ACA ATA ACA AAC ACA	AAC CAA TAA AAC CTA CTC CTC CCT TAA	Y00474	133 bp	60
APC	GAA CCA AAA CGC TCC CCA T	CCC GTC GAA AAC CCG CCG ATT A	TTA TAT GTC GGT TAC GTG CGT TTA TAT	U02509	74bp	60
CDH1	AATTTTAGGTTAGAGGGTTATCGCGT	CGCCACCCGACCTCGCAT	TCCCCAAAACGAACTAACGAC	L34545	69 bp	60
GSTP1	AGT TGC GCG GCG ATT TC	CGG TCG ACG TTC GGG GTG TAG CG	GCC CCA ATA CTA AAT CAC GAC G	M24485	140 bp	60
MGMT	CGA ATA TAC TAA AAC AAC CCG CG	AAT CCT CGC GAT ACG CAC CGT TTA CG	GTA TTT TTT CGG GAG CGA GGC	X61657	122 bp	60
TIMP3	GCGTCGGAGGTTAAGGTTGTT	AACTCGCTCGCCCGCGAA	CTCTCCAAAATTACCGTACGCG	U33110	93 bp	62
CTNNB1	GGAAAGGCGCGTCGAGT	CGCGCGTTTCCCGAACCG	TCCCCTATCCCAAAACCCG	X89448	81 bp	60
ESR1	GGCGTTCGTTTGGGATTG	CGATAAAACCGAACGACCCGACGA	GCCGACACGCGAACTCTAA	X62462	100 bp	60
THBS1	CGACGCACCAACCTACCG	ACGCCGCGCTCACCTCCCT	GTTTTGAGTTGGTTTTACGTTTCGTT	J04835	74 bp	60
TMS1	TTGGAGGGTAACGGATCGGGGC	GACTCCGAAACGAAACCTAAACTCCC (ANTISENSE)	CCCGCTACAACCGCCGACCAA	M73224	95 bp	60

Supplemental Table 3. Genes analysed by Quantitative Methylation Specific PCR.

Gene	loci	Name	Tumors with hypermethylation	Proposed function
APC	5q21-q22	Adenomatous polyposis coli	Colon, Lung	WNT signaling pathway;b-catenin degradation, tumor suppressor
CTNN1B	3p22-p21.3	β -catenin	gastric, endometrial	WNT signaling pathway, cell adhesion
CDH1	16q22.1	E-cadherin	AML,bladder, breast,colon, gastric, thyroid	Cell adhesion
ESR1	6q25.1	Estrogen Receptor alpha	Breast, cervical, colorectal, ovarian, prostate, esophageal	Cell proliferation and differentiation
GSTPI	11q13	Glutathione S-transferaseXX	Breast, prostate, hepatocellular	Protect against oxidant and electrophilic carcinogens
MGMT	10q26	O-6-methylguanine-DNA methyltransferase	Brain, colon,lymphoma, non-small cell lung cancer	DNA repair
THBS1	15q15	Thrombospondin I	Breast, brain, colorectal	Suppress angiogenesis
TIMP3	22q12.1-q13.2	Tissue inhibitor of metallo-proteinase	Brain, breast, colon,kidney, lung, pancreatic	Suppresses metastasis, angiogenesis and tumor growth
TMS1	16p12-p11.2	Target of methylated induced silencing	Breast, prostate, brain, ovarian, lung	Apoptosis

Supplemental Table 4. Median (Interquartile Range, IQR) in Normal Breast Tissue Adjacent to Tumor (NBAT) and Normal Breast Tissues Distant from Tumor (NBDT).

Gene	NBAT	NBDT	P value Mann Whitney Test
APC	0 (0-0)	0 (0.04)	0.7
CDH1	0 (0-0)	0.08 (0-3.19)	0.09
CTNNB1	0 (0-0)	0 (0-0)	0.8
ESR1	0 (0-15.92)	0 (0-15.23)	0.9
TIMP3	0 (0-87.51)	0 (0-9.6)	0.5
GSTP1	0 (0-0)	0 (0-3.73)	0.36