

Supplementary Table 1. Baseline characteristics of NB donors and BC patients

A) NB donors (N=20)		
Age -- yr	Median	36
	Interquartile range	23-50
B) BC patients (N=185)		
Age -- yr	Median	54
	Interquartile range	45-63
Stage -- no. (%)	DCIS	36 (19)
	Stage 1	57 (31)
	Stage 2	50 (27)
	Stage 3	30 (16)
	Stage 4	12 (7)
Grade -- no. (%)	High	83 (45)
	Low to intermediate	73 (39)
	Unknown	29 (16)
Lymphovascular invasion -- no. (%)	Present	46 (25)
	Absent	87 (47)
	Unknown	52 (28)
Perinodal invasion -- no. (%)	Present	26 (14)
	Absent	32 (17)
	Unknown	127 (69)
Lymphnodes -- no. (%)	Positive	88 (48)
	Negative	97 (52)
ER/PR receptor -- no. (%)	Positive	90 (49)
	Negative	51 (27)
	Unknown	44 (24)
HER2 amplification -- no. (%)	Positive	31 (17)
	Negative	104 (56)
	Unknown	50 (27)
Ki67 index -- no. (%)	≥ 30%	67 (36)
	< 30%	63 (34)
	Unknown	55 (30)

Supplementary Table 2. Statistical association between clinocopathologic characteristics of BC patients and DNA methylation frequency (%) of CDO1

Stage*	Stage 0 (DCIS)	Stage 1&2	Stage 3&4	p value
	44	53	81	0.001
Lymphovascular or Perinodal Invasion*		Absent	Present	p value
		52	73	0.011
Overall survival**		HR	95% CI	p value
		2.13	1.17 - 3.86	0.013

* p values were computed using pearson chi 2 test

** HR, 95% CI and p values was computed using univariate cox regression analysis

Supplementary Table 3. Primer information

Assay	Gene	Fwd	Rev	Location relative to TSS
MSP	CDO1-U	GAGTTTATGTGATTTTTGGGATGTTGGAGATAATG	AAAAAATAACAAAAACAAAAACCCTACAAACACA	-168bp to -45bp
	CDO1-M	GATTTTTGGGACGTCGGAGATAAC	GAAAACGAAAAACCCTACGAACACG	-158bp to -56bp
Bisulfite Sequencing	CDO1	GTAAAGTGGGGGAGAGATTG	TTCAAATCTATAAAATTCATCCTC	-192bp to +60bp
ChIP	CDO1	CCTGGGACGCCGGAGACAAC	GCGGAGAGCCACCCAAGAAAG	-154bp to -29bp
RT-PCR	CDO1	TCTCTGTTGGGGTGAAGGAC	AGTGAAGGCTCACAGCAGGT	/
	GAPDH	GAAGGTCGGAGTCAACGGATTT	ATGGGTGGAATCATATTGGAAC	/
real-time RT-PCR	CDO1	CAATGTACGCCAAGTTTCGAC	TGAATACTGCTGCCATGTCC	/
	GAPDH	TGGGCTACACTGAGCACCAG	GGGTGTCGCTGTTGAAGTCA	/