

Figure S1. Representative images of the switch in HER2 status, from negative prior to therapy to positive following therapy as revealed by IHC and verified by FISH. (A) No visible staining of HER2 in a core needle biopsy prior to therapy. IHC, magnification, x400. (B) Weak-to-moderate incomplete membranous staining in >10% of the tumour cells, scored as 2+ (positive). IHC, magnification, x400. (C and D) Two-colour FISH using a specific probe for the *HER2* gene (red) and CEP17 (green). Magnification, x1,000. The ratio of HER2/CEP17 was (C) 1.6 prior to and (D) 3.4 following therapy. A positive result was defined as $HER2/CEP17 \geq 2$. HER2, human epidermal growth factor receptor 2; IHC, immunohistochemistry; FISH, fluorescence *in situ* hybridization; CEP17, centromere of chromosome 17.

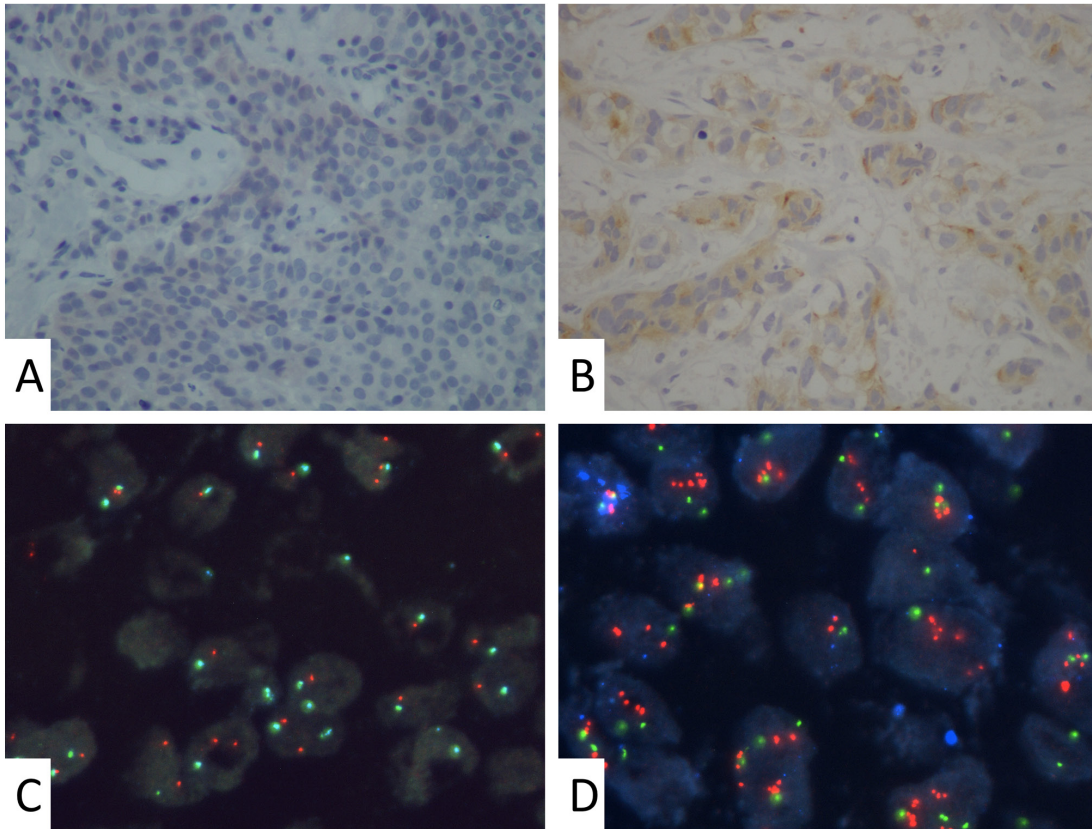


Figure S2. Representative images of the expression of claudins in non-cancerous breast tissue. (A) A non-cancerous duct (black arrow) surrounded by scattered nests of invasive carcinoma of no special type (white arrows) in a fibrous stroma. In the well-arranged areas of the duct, punctate membranous expression of claudin-1 was mostly concentrated in the apical region and at the adjacent lateral parts of the luminal cells. Neoplastic cells expressed claudin-1 with approximately similar intensity to non-cancerous cells but in a disorganized manner. IHC, magnification, x200. (B) A terminal tubulo-lobular unit with predominantly apical expression of claudin-1, which is typically less intense than the expression of claudin-3 and -4. IHC, magnification, x200. (C and D) The same terminal tubulo-lobular unit with strong continuous membranous expression of (C) claudin-3 and (D) claudin-4 in the apical and lateral parts of the luminal cells. IHC, magnification, x200. IHC, immunohistochemistry.

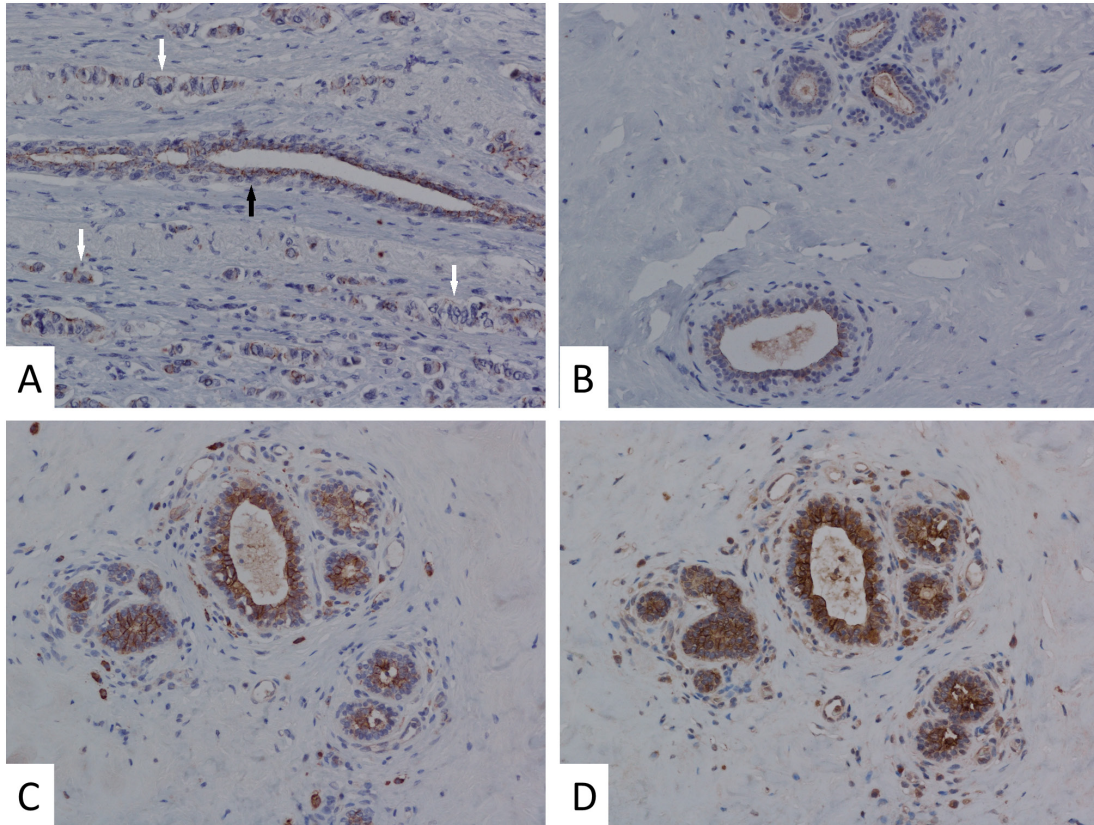


Table SI. Association between the expression of claudin-1 and the standard BC and EMT markers in 62 patients with BC before and after chemotherapy.

sp Characteristic	Before chemotherapy			After chemotherapy		
	Claudin-1		P-value	Claudin-1		P-value
	High	Low		High	Low	
Grade			0.144			0.053
G1-2	13	26		16	20	
G3	12	11		18	8	
ER			0.016 ^a			0.156
Positive	14	31		24	24	
Negative	11	6		10	4	
PR			0.144			0.031 ^a
Positive	13	26		15	20	
Negative	11	12		19	8	
HER2			1.000			0.021 ^a
Positive	4	5		3	9	
Negative	21	32		31	19	
Ki-67			0.350			0.026 ^a
High	19	24		18	7	
Low	6	13		16	21	
E-cadherin			0.526			0.107
Aberrant	5	10		7	11	
Normal	20	27		27	17	
N-cadherin			0.977			0.844
Positive	6	9		8	6	
Negative	19	28		26	22	
TNBC			0.038 ^a			0.015 ^a
TNBC	8	4		9	1	
ER-, PR- or HER2-positive	17	33		25	27	

^aSignificant association (P<0.05). BC, breast cancer; EMT, epithelial-mesenchymal transition; ER, oestrogen receptor; PR, progesterone receptor; Ki-67, marker of proliferation Ki-67; TNBC, triple-negative breast cancer (ER-, PR- and HER2-negative).

Table SII. Association between the expression of claudin-3 and the standard BC and EMT markers in 62 patients with BC after chemotherapy.

Characteristic	Claudin-3		P-value
	High	Low	
Grade			0.277
G1-2	28	8	
G3	23	3	
ER			0.700
Positive	39	9	
Negative	12	2	
PR			0.596
Positive	28	7	
Negative	23	4	
HER2			0.464
Positive	9	3	
Negative	42	8	
Ki-67			0.702
High	20	5	
Low	31	6	
E-cadherin			0.005 ^a
Aberrant	11	7	
Normal	40	4	
N-cadherin			0.484
Positive	12	2	
Negative	39	9	
TNBC			0.484
TNBC	9	1	
ER-, PR- or HER2-positive	42	10	

^aSignificant association (P<0.05). BC, breast cancer; EMT, epithelial-mesenchymal transition; ER, oestrogen receptor; PR, progesterone receptor; Ki-67, marker of proliferation Ki-67; TNBC, triple-negative breast cancer (ER-, PR- and HER2-negative).

Table SIII. Association between the expression of EMT markers and standard BC markers in 62 patients with BC.

Characteristic	Before chemotherapy						After chemotherapy					
	E-cadherin			N-cadherin			E-cadherin			N-cadherin		
	Normal	Aberrant	P-value	Negative	Positive	P-value	Normal	Aberrant	P-value	Negative	Positive	P-value
Grade												
G1-2	28	11	0.337	33	6	0.035 ^a	26	10	0.798	32	4	0.011 ^a
G3	19	4		14	9		18	8		16	10	
ER												
Positive	35	10	0.555	38	7	0.010 ^a	35	13	0.531	38	10	0.542
Negative	12	5		9	8		9	5		10	4	
PR												
Positive	32	7	0.135	33	6	0.035 ^a	25	10	0.927	28	7	0.580
Negative	15	8		14	9		19	8		20	7	
HER2												
Positive	6	3	0.674	5	4	0.201	8	4	0.715	6	6	0.011 ^a
Negative	41	12		42	11		36	14		42	8	
Ki-67												
High	32	11	0.701	31	12	0.304	16	9	0.320	17	8	0.145
Low	15	4		16	3		28	9		31	6	
E-cadherin												
Aberrant	-	-		9	6	0.101	-	-		14	4	0.966
Normal	-	-		38	9		-	-		34	10	
N-cadherin												
Positive	9	6	0.101	-	-		10	4	0.966	-	-	
Negative	38	9		-	-		34	14		-	-	
TNBC												
TNBC	9	3	1.000	7	5	0.116	6	4	0.404	8	2	0.831
ER-, PR- or HER2-positive	38	38	12	40	40	10	38	38	14	40	40	12

^aSignificant association (P<0.05). BC, breast cancer; EMT, epithelial-mesenchymal transition; ER, oestrogen receptor; PR, progesterone receptor; Ki-67, marker of proliferation Ki-67; TNBC, triple-negative breast cancer (ER-, PR- and HER2-negative).