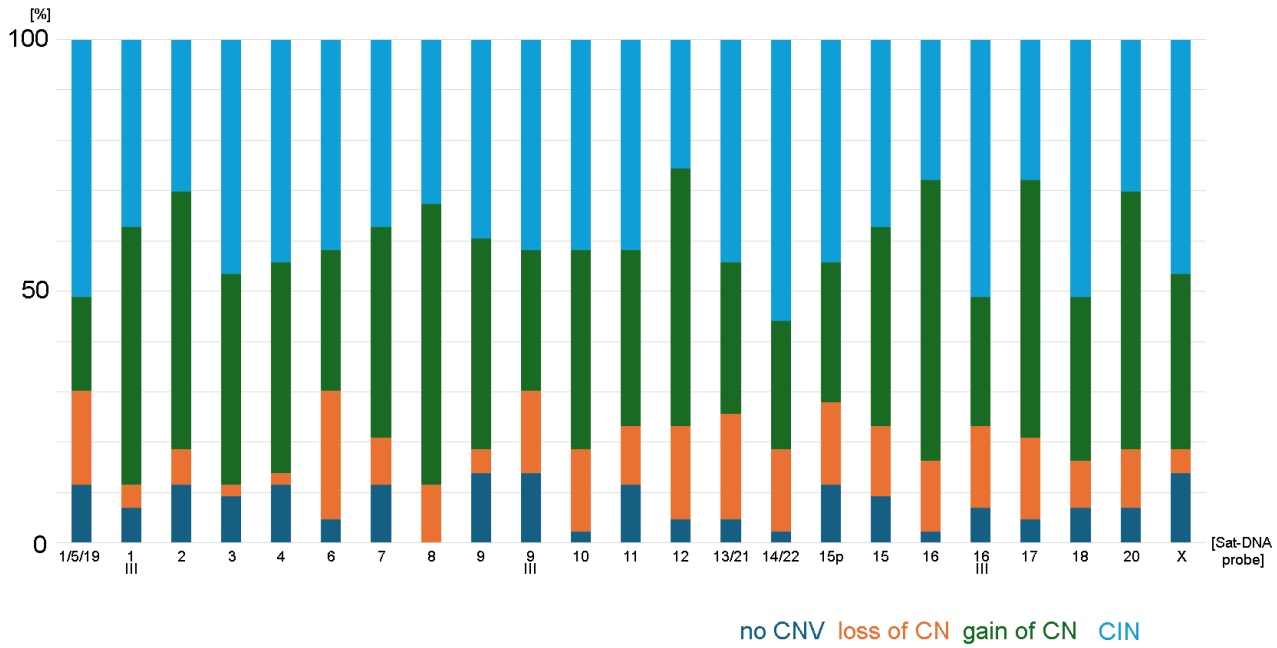


Figure S1 Distribution of iFISH signals per Sat-DNA probes used in the tested cases (Table 1). The percentage of cases that showed no copy number variation (CNV), loss or gain of copy numbers (CN), or chromosome instability without a clear tendency toward loss or gain.

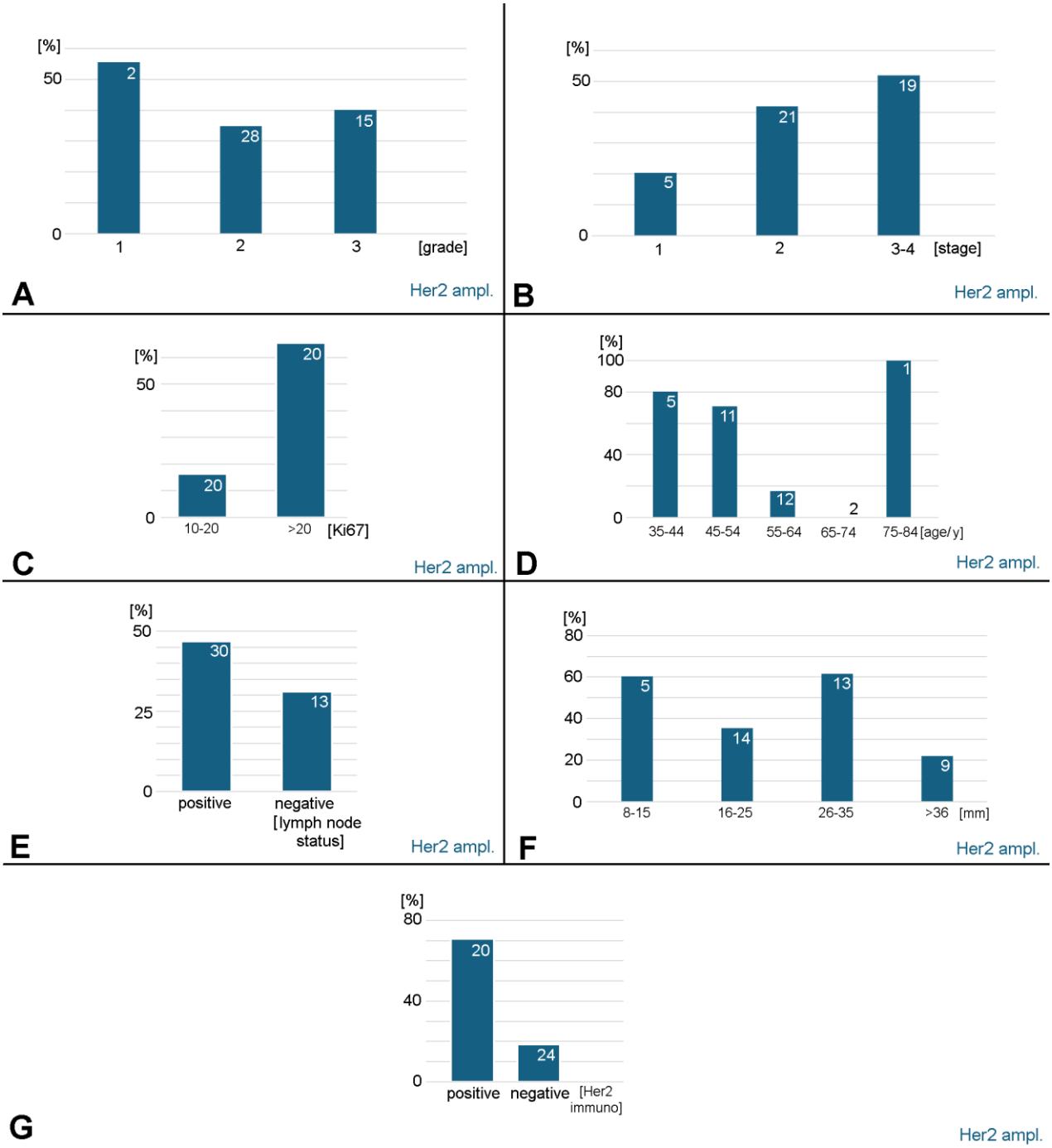


Figure S2 The relationship between *ErbB2*/*Her2* gene amplification and clinical parameters. (A) grading, (B) staging, (C) Ki67 status, (D) patient age, (E) lymph node status/metastases, (F) tumor size, and (G) *ErbB2*/*Her2* immuno-status are shown. The white figures in the blue bars of the charts provide the number of cases included from Table 1, each.

Table S1 Commercially available DNA-probes used in this study for heterochromatic regions of human genome and for one locus known to be altered in breast cancer.

Chromosomes	Location	DNA-probe (company)	DNA Classification
Satellite DNAs			
1	1p11.1q11.1	D1Z7* (C)	α-satellite
	1q11q12	D1Z5 (A)	satellite III
2	2p11.1q11.1	D2Z2 (A)	α-satellite
3	3p11.1q11.1	D3Z1 (A)	α-satellite
4	4p11q11	D4Z1 (A)	α-satellite
5	5p11.1q11.1	D5Z2* (C)	α-satellite
6	6p11.1q11.1	D6Z1 (A)	α-satellite
7	7q11.1	D7Z1 (A)	α-satellite
8	8p11.1q11.1	D8Z2 (A)	α-satellite
9	9p11.1q11	D9Z4 (A)	α-satellite
	9q12	D9Z3 (Z)	satellite III
10	10p11.1q11.1	D10Z1 (Z)	α-satellite
11	11p11.11q11	D11Z1 (A)	α-satellite
12	12p11.1q11	D12Z3 (A)	α-satellite
13	13p11.1q11	D13Z1** (C)	α-satellite
14	14p11.1q11.1	D14Z1*** (C)	α-satellite
15	15p11.2	D15Z1 (A)	satellite III
	15q11.1	D15Z4 (A)	α-satellite
16	16p11.1q11.1	D16Z2 (A)	α-satellite
	16q11.2	D16Z3 (C)	satellite II
17	17p11.1q11.1	D17Z1 (A)	α-satellite
18	18p11.1q11.1	D18Z1 (A)	α-satellite
19	19q11	D19Z3* (C)	α-satellite
20	20p11.1q11.1	D20Z1 (A)	α-satellite
21	21p11.1q11.1	D21Z1** (C)	α-satellite
22	22p11.1q11.1	D22Z1*** (C)	α-satellite
X	Xp11.1q11.1	DXZ1 (A)	α-satellite
Locus specific probes			
17	17q12~21.1	HER2 (Z)	oncogene

Listed are DNA-probes for (peri)centric regions of all human chromosomes along with their corresponding locations and DNA classification.

* identical DNA-stretches being present simultaneously on chromosomes 1, 5, and 19.

* identical DNA stretches being present simultaneously on chromosomes 13 and 21.

* identical DNA stretches being present simultaneously on chromosomes 14 and 22.

Corresponding probes were obtained from Abbott Vysis (A; Wiesbaden, Germany), CytoCell® (C; Sysmex, Norderstedt, Germany) and ZytoVision (Z; Bremerhaven, Germany).

Table S2 Copy number changes of satellite DNA regions tested and in *ErbB2*/*Her2 region*, given for every BCa sample.

Samples Breakpoints	Copy number changes of tested DNA regions of different BCa samples																							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
1p11.1q11/5p11q11.1/19p11q11		-		+	-	-	-	-	c	c	c	+	-		+	c	c	c	+	c	c	-	c	+
1q11q12	c		+	+	c	c	+	+	c	+	H	H	+	+	-	+	+	+	+	c	+		+	+
2p11.1q11.1	c			+	-	c	+	+	-	-	c		+		c	+		+	c	c	+	c	+	+
3p11.1q11.1	+	c		c	+	+	c	c	c	c	+	+	+	c	+		+	+	c	c	+	c	+	
4p11q11.1	c			+	+	c	c	c	c	+	c	+	+	c	c	c	c	+	c		c	-	+	+
6p11.1q11.1	c	c		+	-	c	-	c	c	-	+	-	c	c	-	+	c	+	-	-	+	-	c	-
7q11.1		c	c	+	-	-	c	+	c	c	c	c	+	c	c	+	+		c		c	c	+	+
8p11.1q11.1	c	+	+	+	+	c	+	+	c	+	+	+	c	+	+	c	c	c	+	+	c	-	+	c
9p11.1q11		c	+	+	c	-		c	c	c	+		c	c	+	+		c	+		c	+	+	+
9q12				-	c	-		c	c	-	+		c	c	c	+	c	+	+	-	c	-	+	+
10p11.1q11.1	+	-	c	+	-	-		-	-	c	c	+	+	c	+	c	+	+	-	c	+	c	+	c
11p11.11q11.1	+			+	-	c	c		-	+	c	-	+		c	c		+	c	c	c	c	+	c
12p11.1q11.1	+	-		+	+	c	-	+	-	c	+	c	+	-	c	+	+	+	-		+	c	+	c
13p11.1q11 **21q11.1q11.1**		c	-	c	+	c	-	-	c	c	+	-	+	c	c	+	c	+	+	c		c	+	c
14p11.1q11.1 **22p11.1q11.1**		c	c	-	+	c	c	c	c	c	+	-	c	c	c	+	c	+	c	-	+	-	+	c
15p11.2		-	c	+		c	c		-	+	c	+	c	c	+	c		+	-	-	-	c	+	c
15q11.1	+	-	+	+		c	c		-	+	c	+	+	c	+	c	+	+	c	-	-	c	+	c
16q11.2	c	+	-	-		c	+	-	-	+	+	+	+	c	+	+	+	+	+	-	+	+	+	+
16p11.1q11.1		c		-	-	c	-	c	-	c	c	+	+	c	+	c	c	-	+	c	c	+	+	-
17p11.1q11.1	c	-	+	+	-	c	-	c	-	c	+	c	+	+	+	c	+	+	-	c	+	c	+	+
18p11.1q11.1				c	c	c	c	c	c	c	c	-	+	+	+	c	c	c	-	c	+	c	+	c
20q11.1		-	c	c	+	-	c	c	-	+	+		+	c	+		-	+	+	c	+	+	+	c
Xp11.1q11.1				c	+		c	c	c	+	c	c	+	c	+	c		+	c	c	+	-	+	c
ErbB2/Her2	D										D				H			D	H				H	

	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
1p11.1q11/5p11q11.1/19p11q11	+	c		n.a.	c	c	c	+	+	c	c	c	-	c	-	c	-	c		-	n.a.	n.a.	n.a.
1q11q12	H	+	c	n.a.	+	+	H		+	H	H	H	+	H	-	+	+	+	c	c	n.a.	n.a.	n.a.
2p11.1q11.1	+	+	c	n.a.	+	+	+	+	+	+	c	c	+	+	c	+	+	c	+	c	n.a.	n.a.	n.a.
3p11.1q11.1	+	+		n.a.	+	+	+	-	+	c	+	+	c	+	+	+	+	+	+	c	n.a.	n.a.	n.a.
4p11q11.1	+	+		n.a.	+	+	+	c	+	+	c	c	c	c	+	c	+	+		c	n.a.	n.a.	n.a.
6p11.1q11.1	+	+		n.a.	+	c	+	c	+	c	c	c	c	c	-	c	+	+	c	-	n.a.	n.a.	n.a.
7q11.1	+	+	-	n.a.	c	+	+		+	c	c	+	+	+	-	+	+	+		c	n.a.	n.a.	n.a.
8p11.1q11.1	+	+	c	n.a.	-	+	+	c	+	+	c	-	+	c	-	+	+	c	+	-	n.a.	n.a.	n.a.
9p11.1q11	+	+	c	n.a.	+	c	+	c	H	c	c	+	-	+	c	c	+	+		+	n.a.	n.a.	n.a.
9q12	+	c	c	n.a.	+	+	+	c	+	c	c	H	-	+	-	c	c	c		c	n.a.	n.a.	n.a.
10p11.1q11.1	+	c	c	n.a.	c	+	c	-	c	+	+	+	+	+	c	c	c	+	c	c	n.a.	n.a.	n.a.
11p11.11q11.1	c	+	c	n.a.	-	c	c	c	+	+	+	+	+	+	H	+	+	c	c	-	n.a.	n.a.	n.a.
12p11.1q11.1	+	+	c	n.a.	+	c	+	-	+	c	+	+	+	+	-	+	+	c	c	-	n.a.	n.a.	n.a.
13p11.1q11 **21q11.1q11.1**	-	-	c	n.a.	-	+	+	+	+	c	c	+	c	-	c	c	-	+	c	c	n.a.	n.a.	n.a.
14p11.1q11.1 **22p11.1q11.1**	c	c	c	n.a.	+	c	c	c	+	c	-	+	+	+	c	c	-	c	c	-	n.a.	n.a.	n.a.
15p11.2	c	+	c	n.a.	c	+	+	c	+	c		+	c	c	-	c	c	+	c	-	n.a.	n.a.	n.a.
15q11.1	+	c	c	n.a.	c	+	+	c	c	+		+	c		c	c	-	+	+	-	n.a.	n.a.	n.a.
16q11.2	c	+	c	n.a.	c	+	+	c	+	c	+	c	c	+	-	+	+	+	c	c	n.a.	n.a.	n.a.
16p11.1q11.1	+	c		n.a.	+	c	c	c	+	c	-	c	c	+	c	+	c	c	c	c	n.a.	n.a.	n.a.
17p11.1q11.1	+	+	c	H	+	+	+	H	+	+	c		+	+	-	+	+		c	-	H	D	D
18p11.1q11.1	+	+	c	n.a.	+	c	H	H	+	+	+	+	-	+	c	c	+	c	c	-	n.a.	n.a.	n.a.
20q11.1	+	+	+	n.a.	+	c	+	c	+	+	-	+	c	c	+	c	+	+	c	+	n.a.	n.a.	n.a.
Xp11.1q11.1	+	c	c	n.a.	+	+	+	c	c	c		+	+	c	-	c	+	c	+	c	n.a.	n.a.	n.a.
ErbB2/Her2	D	H		H	H	H	H	H	H	H	D		H	D	H	D		H			H		

empty = no change in copy numbers/no clear tendency of loss or gain; "-" = loss of copy numbers; "+" = gain of copy numbers; c = CIN; D = amplification as double minutes; H = amplification as homogeneously staining regions; n.a. = no data available.