

**Supplementary Table 1:** Characteristics of 122 breast cancers with matched FFPET, FFPELN, and WBC.

		<b><u>N=</u></b>	<b><u>%</u></b>
<b>Tumor Grade</b>	1	23	19.0%
	2	62	51.2%
	3	35	28.9%
	Unknown	2	1.6%
<b>Histology</b>	Ductal	81	67.5%
	Lobular	17	14.2%
	Tubular	1	0.8%
	Ductal with lobular features	7	5.8%
	Ductal with tubular features	1	0.8%
	Ductal with medullary features	2	1.7%
	Ductal, apocrine type	2	1.7%
	Mucinous	1	0.8%
	Mixed	5	4.2%
	Other	3	2.5%
	Unknown	2	1.6%
<b>ER status</b>	Positive	101	82.8%
	Negative	21	17.2%
	Unknown	0	0.0%
<b>PR status</b>	Positive	88	72.1%
	Negative	34	27.9%
	unknown	0	0.0%
<b>HER2 status</b>	Positive	22	18.0%
	Negative	100	82.0%
	Unknown	0	0.0%
<b>Neoadjuvant Chemotherapy</b>	Yes	18	14.8%
	No	104	85.2%

**Supplementary Table 2:** *CYP2D6* allelic variants, genotype frequencies and P-value for Hardy-Weinberg Equilibrium (HWE) test for 122 breast cancer patients' DNA samples obtained from WBC.

<i>CYP2D6</i> allele	Variant alleles, N (%)	Genotype, N (%)			HWE
		Homozygous	Heterozygous	Wild type	P-value*
<i>CYP2D6</i> *2	72 (29.5)	11 (9.0)	50 (41.0)	61 (50.0)	0.83
<i>CYP2D6</i> *3	2 (0.8)	0	2 (1.6)	120 (98.4)	1.00
<i>CYP2D6</i> *4	51 (20.9)	4 (3.3)	43 (35.2)	75 (61.5)	0.59
<i>CYP2D6</i> *6	5 (2.0)	0	5 (4.1)	117 (95.9)	1.00
<i>CYP2D6</i> *10	6 (2.5)	0	6 (4.9)	116 (95.1)	1.00
<i>CYP2D6</i> *41	18 (7.4)	1 (0.8)	16 (13.1)	105 (86.1)	0.49

\*P-value obtained from exact test for deviation from Hardy-Weinberg Equilibrium.

**Supplementary Table 3:** CYP2D6 Genotypes from 122 breast cancer patients' matched DNA samples obtained from WBC, FFPE tumor (FFPET), and FFPE lymph node (FFPELN)

Sample #	WBC				FFPET		FFPELN	
	Genotype	Score	CN	Score with CNV	Genotype	Score	Genotype	Score
9	*4/*2	1	2	1	ND	ND	*4/*2	1
39	*1/*1	2	2	2	*2/*1	2	*1/*1	2
71	*2/*1	2	2	2	*1/*1	2	*2/*1	2
92	*2/*1	2	2	2	*1/*1	2	*2/*1	2
113	*1/*1	2	2	2	*2/*1	2	*1/*1	2
124	*4/*2	1	2	1	*4/*10	0.5	*4/*2	1
130	*2/*2	2	2	2	*2/*10	1.5	*2/*2	2
142	*4/*2	1	2	1	*4/*1	1	*4/*2	1
42	*4/*1	1	2	1	*4/*1	1	ND	ND
62	*1/*1	2	2	2	*1/*1	2	ND	ND
99	*2/*1	2	2	2	*2/*1	2	ND	ND
100	*4/*1	1	2	1	*4/*1	1	ND	ND
123	*2/*1	2	2	2	*2/*1	2	ND	ND
136*	*2/*41	1.5	2	1.5	*2/*41	1.5	ND	ND
28	*4/*4	0	2	0	*4/*4	0	*10/*1	1.5
74	*4/*2	1	2	1	*4/*2	1	*4/*10	0.5
26	*2/*2	2	1	1	*2/*2	2	*2/*2	2
30	*1/*1	2	1	1	*1/*1	2	*1/*1	2
59	*2/*2	2	1	1	*2/*2	2	*2/*2	2
89	*1/*1	2	1	1	*1/*1	2	*1/*1	2
90	*1/*1	2	1	1	*1/*1	2	*1/*1	2
93	*1/*1	2	1	1	*1/*1	2	*1/*1	2
110	*41/*41	1	1	0.5	*41/*41	1	*41/*41	1
117	*2/*2	2	1	1	*2/*2	2	*2/*2	2
122	*2/*2	2	1	1	*2/*2	2	*2/*2	2
1	*4/*4	0	>2	0	*4/*4	0	*4/*4	0
77	*2/*2	2	>2	3	*2/*2	2	*2/*2	2
84	*41/*1	1.5	>2	>1.5	*41/*1	1.5	*41/*1	1.5
112	*2/*2	2	>2	3	*2/*2	2	*2/*2	2
118	*4/*1	1	>2	≥1	*4/*1	1	*4/*1	1
131	*2/*1	2	>2	3	*2/*1	2	*2/*1	2
2	*4/*2	1	2	1	*4/*2	1	*4/*2	1
3	*4/*1	1	2	1	*4/*1	1	*4/*1	1
4	*4/*41	0.5	2	0.5	*4/*41	0.5	*4/*41	0.5
5	*4/*2	1	2	1	*4/*2	1	*4/*2	1
6	*6/*1	1	2	1	*6/*1	1	*6/*1	1

7	*4 / *10	0.5	2	0.5	*4 / *10	0.5	*4 / *10	0.5
8	*4 / *1	1	2	1	*4 / *1	1	*4 / *1	1
10	*4 / *1	1	2	1	*4 / *1	1	*4 / *1	1
11	*2 / *1	2	2	2	*2 / *1	2	*2 / *1	2
13	*10 / *1	1.5	2	1.5	*10 / *1	1.5	*10 / *1	1.5
16	*4 / *1	1	2	1	*4 / *1	1	*4 / *1	1
18	*4 / *1	1	2	1	*4 / *1	1	*4 / *1	1
21	*4 / *41	0.5	2	0.5	*4 / *41	0.5	*4 / *41	0.5
22	*4 / *1	1	2	1	*4 / *1	1	*4 / *1	1
23	*2 / *1	2	2	2	*2 / *1	2	*2 / *1	2
24	*2 / *1	2	2	2	*2 / *1	2	*2 / *1	2
25	*1 / *1	2	2	2	*1 / *1	2	*1 / *1	2
31	*2 / *10	1.5	2	1.5	*2 / *10	1.5	*2 / *10	1.5
32	*2 / *1	2	2	2	*2 / *1	2	*2 / *1	2
33	*41 / *1	1.5	2	1.5	*41 / *1	1.5	*41 / *1	1.5
34	*2 / *2	2	2	2	*2 / *2	2	*2 / *2	2
36	*2 / *2	2	2	2	*2 / *2	2	*2 / *2	2
37	*4 / *2	1	2	1	*4 / *2	1	*4 / *2	1
38	*2 / *1	2	2	2	*2 / *1	2	*2 / *1	2
41	*4 / *10	0.5	2	0.5	*4 / *10	0.5	*4 / *10	0.5
43	*4 / *1	1	2	1	*4 / *1	1	*4 / *1	1
44	*3 / *41	0.5	2	0.5	*3 / *41	0.5	*3 / *41	0.5
48	*2 / *41	1.5	2	1.5	*2 / *41	1.5	*2 / *41	1.5
49	*41 / *1	1.5	2	1.5	*41 / *1	1.5	*41 / *1	1.5
50	*1 / *1	2	2	2	*1 / *1	2	*1 / *1	2
52	*2 / *1	2	2	2	*2 / *1	2	*2 / *1	2
53	*41 / *1	1.5	2	1.5	*41 / *1	1.5	*41 / *1	1.5
56	*2 / *6	1	2	1	*2 / *6	1	*2 / *6	1
63	*2 / 10	1.5	2	1.5	*2 / 10	1.5	*2 / 10	1.5
64	*2 / *1	2	2	2	*2 / *1	2	*2 / *1	2
65	*4 / *2	1	2	1	*4 / *2	1	*4 / *2	1
67	*4 / *2	1	2	1	*4 / *2	1	*4 / *2	1
68	*4 / *4	0	2	0	*4 / *4	0	*4 / *4	0
69	*2 / *1	2	2	2	*2 / *1	2	*2 / *1	2
70	*4 / *2	1	2	1	*4 / *2	1	*4 / *2	1
72	*4 / *2	1	2	1	*4 / *2	1	*4 / *2	1
75	*4 / *1	1	2	1	*4 / *1	1	*4 / *1	1
76	*41 / *1	1.5	2	1.5	*41 / *1	1.5	*41 / *1	1.5
78	*2 / *1	2	2	2	*2 / *1	2	*2 / *1	2
80	*2 / *6	1	2	1	*2 / *6	1	*2 / *6	1
81	*4 / *41	0.5	2	0.5	*4 / *41	0.5	*4 / *41	0.5

82	*4/*1	1	2	1	*4/*1	1	*4/*1	1
83	*4/*1	1	2	1	*4/*1	1	*4/*1	1
85	*2/*1	2	2	2	*2/*1	2	*2/*1	2
87	*1/*1	2	2	2	*1/*1	2	*1/*1	2
88	*4/*2	1	2	1	*4/*2	1	*4/*2	1
91	*4/*2	1	2	1	*4/*2	1	*4/*2	1
94	*4/*41	0.5	2	0.5	*4/*41	0.5	*4/*41	0.5
95	*4/*1	1	2	1	*4/*1	1	*4/*1	1
96	*2/*6	1	2	1	*2/*6	1	*2/*6	1
98	*4/*2	1	2	1	*4/*2	1	*4/*2	1
101	*2/*2	2	2	2	*2/*2	2	*2/*2	2
102	*4/*1	1	2	1	*4/*1	1	*4/*1	1
103	*4/*2	1	2	1	*4/*2	1	*4/*2	1
104	*1/*1	2	2	2	*1/*1	2	*1/*1	2
105	*4/*1	1	2	1	*4/*1	1	*4/*1	1
106	*10/*1	1.5	2	1.5	*10/*1	1.5	*10/*1	1.5
107	*6/*1	1	2	1	*6/*1	1	*6/*1	1
108	*1/*1	2	2	2	*1/*1	2	*1/*1	2
109	*4/*2	1	2	1	*4/*2	1	*4/*2	1
111	*2/*1	2	2	2	*2/*1	2	*2/*1	2
114	*4/*2	1	2	1	*4/*2	1	*4/*2	1
115	*2/*1	2	2	2	*2/*1	2	*2/*1	2
116	*4/*1	1	2	1	*4/*1	1	*4/*1	1
119	*41/*1	1.5	2	1.5	*41/*1	1.5	*41/*1	1.5
120	*2/*41	1.5	2	1.5	*2/*41	1.5	*2/*41	1.5
121	*4/*2	1	2	1	*4/*2	1	*4/*2	1
125	*1/*1	2	2	2	*1/*1	2	*1/*1	2
126	*41/*1	1.5	2	1.5	*41/*1	1.5	*41/*1	1.5
127	*2/*1	2	2	2	*2/*1	2	*2/*1	2
128	*4/*4	0	2	0	*4/*4	0	*4/*4	0
129	*4/*1	1	2	1	*4/*1	1	*4/*1	1
132	*1/*1	2	2	2	*1/*1	2	*1/*1	2
134	*41/*1	1.5	2	1.5	*41/*1	1.5	*41/*1	1.5
135	*2/*1	2	2	2	*2/*1	2	*2/*1	2
137	*1/*1	2	2	2	*1/*1	2	*1/*1	2
138	*3/*1	1	2	1	*3/*1	1	*3/*1	1
139	*2/*1	2	2	2	*2/*1	2	*2/*1	2
141	*2/*1	2	2	2	*2/*1	2	*2/*1	2
143	*1/*1	2	2	2	*1/*1	2	*1/*1	2
144	*1/*1	2	2	2	*1/*1	2	*1/*1	2
145	*4/*2	1	2	1	*4/*2	1	*4/*2	1

146	*2 / *1	2	2	2	*2 / *1	2	*2 / *1	2
147	*2 / *1	2	2	2	*2 / *1	2	*2 / *1	2
148	*1 / *1	2	2	2	*1 / *1	2	*1 / *1	2
149	*2 / *2	2	2	2	*2 / *2	2	*2 / *2	2

ND - not determined; \*sample #136 FFPELN genotype was not determined for unknown reason and is included in analyses as not concordant; the others were not determined because of low DNA quality/concentration.