

Table S1. Clinicopathological characteristics of HER2-positive breast carcinoma patients according to HER2 mRNA and E2 levels.

| | Cohort 1 n=36 | | Cohort 2 n=40 | |
|------------------------------|------------------------------|-------------------------------|----------------------------|-----------------------------|
| Characteristic | HER2 low n=18 (%) | HER2 high n=18 (%) | E2 low n=20 (%) | E2 high n=20 (%) |
| Age | | | | |
| Median (interquartile range) | 53 (47-58) | 55 (50-59) | 58 (56-64) | 60 (57-64) |
| Size | | | | |
| ≤ 2 cm | 10 (56) | 9 (50) | 12 (60) | 15 (75) |
| > 2 cm | 8 (44) | 9 (50) | 8 (40) | 5 (25) |
| Grade | | | | |
| II | 4 (22) | 4 (22) | 6 (30) | 2 (10) |
| III | 14 (78) | 14 (78) | 14 (70) | 18 (90) |
| Node ^b | | | | |
| N0 | 3 (17) | 2 (11) | 9 (45) | 6 (30) |
| N+ | 15 (83) | 16 (89) | 11 (55) | 14 (70) |
| ER ^a | | | | |
| neg | 9 (50) | 9 (50) | 7 (35) | 10 (50) |
| pos | 9 (50) | 9 (50) | 13 (65) | 10 (50) |
| PgR ^a | | | | |
| neg | 10 (50) | 8 (60) | 13 (65) | 11 (55) |
| pos | 8 (50) | 10 (40) | 7 (35) | 9 (45) |
| BMI | | | | |
| <20 | 0 | 0 | 1 (1) | 0 |
| ≥20<25 | 3 (17) | 5 (28) | 15 (75) | 12 (70) |
| ≥25<30 | 1 (5) | 0 | 4 (20) | 4 (20) |
| ≥30 | 0 | 0 | 0 | 2 (10) |
| na | 14 (78) | 13 (72) | 0 | 2 (10) |

^a ER- and PgR-positive, > 10% cell positivity by immunohistochemistry

^b Node status positive, at least one positive lymph node by histological examination