

***Supplementary Table 1.**

Clinical information of breast cancer patient cohorts used for gene expression analysis.

| Variable | Cohort 1 N=1062 (100%) | Cohort 2 N=114 (100%) |
|---|-------------------------------|--|
| Age | | |
| ≤50 yrs | 615 (56.6%) | 69 (60.5%) |
| >50yrs | 414 (38.1%) | 45 (39.5%) |
| unknown | 58 (5.3%) | |
| Tumor size | | |
| T1 ≤2cm | 679 (62.5%) | 20 (14.4%) |
| T2 >2cm | 346 (31.8%) | 98 (85.6%) |
| unknown | 58 (5.3%) | |
| Nodal Status | | |
| Node negative | 932 (85.7%) | 52 (45.6%) |
| Node positive | 155 (14.3%) | 62 (54.3%) |
| Histologic Grade | | |
| Grade 1 | 148 (13.6%) | 2 (1.8%) |
| Grade 2 | 373 (34.3%) | 20 (17.5%) |
| Grade 3 | 417 (38.4%) | 76.3 (76.3%) |
| Unknown | 149 (13.7%) | 5 (4.4%) |
| ER status | | |
| Positive | 761 (70%) | 0 |
| Negative | 326 (30%) | 114 (114%) |
| HER2 overexpressed | | |
| Positive | 162 (15%) | 29 (25.4%) |
| Negative | 921 (84.7%) | 85 (74.6%) |
| unknown | 4 (0.4%) | |
| Endpoint | Disease recurrence (28.6%) | pCR (14%) |
| Type of tumor biopsy | At primary surgery | At diagnosis (core biopsy) |
| Systemic anti cancer treatment given | none | Epirubicin monotherapy 4 cycles (100 mg/m ²) prior to surgery |

*This table is in part reproduced in Ref 27.