

Supplementary Table S1. List of publicly available clinical trial studies.

| Study | # Patients | Tissues | Molecular profiling | Drugs | Source |
|--------------------|------------|------------------|--------------------------------|---|---|
| NEOALTTO | 89 | Breast (HER2+) | WXS; RNA-seq | Lapatinib | NCT00553358 |
| NEOALTTO | 79 | Breast (HER2+) | WXS; RNA-seq | Trastuzumab | NCT00553358 |
| NEOALTTO | 86 | Breast (HER2+) | WXS; RNA-seq | Lapatinib + Trastuzumab | NCT00553358 |
| Bortezomib_Myeloma | 169 | Purified myeloma | microarray (Affymetrix 133A/B) | bortezomib | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE9782 |
| Epirubicin_ER- | 118 | Breast (ER-) | HG-U133_Plus_2 | epirubicin | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE16446 |
| Breast_Neo adj | 506 | Breast | HG-U133A | neoadjuvant taxane-anthracycline chemotherapy | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE25066 |
| TransNOAH | Total 156 | Breast (HER2+) | HG-U133_Plus_2 | trastuzumab | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE50948 |
| TransNOAH | Total 156 | Breast (HER2+) | HG-U133_Plus_2 | trastuzumab+neoadjuvant chemo | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE50948 |
| Breast_Neo adj2 | 115 | Breast | HG-U133_Plus_2 | neoadjuvant paclitaxel followed by 5-fluorouracil/epirubicin/cyclophosphamide | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE32646 |
| Breast_Neo adj3 | 279 | Breast | HG-U133A | Neoadjuvant chemotherapy | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE41998 |
| Breast_Chemo | 69 | Breast (TNBC) | HG-U133A | chemotherapy | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE58479 |
| Breast_Neo adj5 | 278 | Breast | HG-U133A | Neoadjuvant chemotherapy | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE20194 |
| Breast_Chemo2 | Total 161 | Breast | U133_X3P | (5-fluorouracil, cyclophosphamide, epirubicin) | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE6861 |
| Breast_Chemo2 | Total 161 | Breast | U133_X3P | (epirubicin, docetaxel) | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=G |

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|----------------------|----------|--------|--|---|---|
| | | | | | SE6861 |
| Breast_Che mo3 | 178 | Breast | HG-U133A | chemotherapy | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE20271 |
| Breast_Gefit inib | Total 96 | Breast | HG- U133_Plus_2 | Neoadjuvant anastrozole | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE48906 |
| Breast_Gefit inib | Total 96 | Breast | HG- U133_Plus_2 | Neoadjuvant anastrozole+Gefitinib | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE48906 |
| Breast_Letr ozole | 58 | Breast | HG-U133A (before and after treatment) | letrozole | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE20181 |
| Breast_Che mo4 | 52 | Breast | Expression array | gemcitabine, epirubicine and docetaxel | https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE4056 |