**Supplementary Table 3**

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| --- | --- | --- |
|  | **Lapatinib Treated Patients** | **Control Patients** |
| **Protein Biomarker** | **N\*** | **Logistic regression** | **p-value** | **N** | **Logistic regression** | **p-value** |
| **Ki67 (%)** | 91 | - | 0.51 | 27 | - | 0.91 |
| HER2- | 72 | - | 0.087 | 20 | - | 1 |
| HER2+ | 19 | + | 0.44 | 7 | Na | na |
| **ER** | 91 | + | 0.23 | 27 | + | 0.38 |
| HER2- | 72 | **+** | **0.016** | 20 | + | 0.42 |
| HER2+ | 19 | + | 0.58 | 7 | Na | na |
| **PgR** | 91 | + | 0.18 | 27 | + | 0.4 |
| HER2- | 72 | **+** | **0.045** | 20 | + | 0.41 |
| HER2+ | 19 | + | 0.28 | 7 | na | na |
| **HER2 (FISH)** | 89 | + | 0.25 | 27 | na | na |
| HER2- | 70 | - | 0.86 | 20 | na | na |
| HER2+ | 19 | - | 0.21 | 7 | na | na |
| **EGFR (%pos)** | 91 | - | 0.06 | 27 | - | 1 |
| HER2- | 72 | - | 0.11 | 20 | - | 1 |
| HER2+ | 19 | - | 0.17 | 7 | - | 0.17 |
| **STATHMIN** | 91 | + | 0.42 | 27 | - | 0.39 |
| HER2- | 72 | - | 0.94 | 20 | + | 0.45 |
| HER2+ | 19 | + | 0.24 | 7 | na | na |
| **pERK nuclear** | 91 | + | 0.8 | 26 | na | na |
| HER2- | 72 | - | 0.78 | 19 | na | na |
| HER2+ | 19 | + | 0.54 | 7 | na | na |
| **pERK cytoplasmic** | 91 | - | 0.05 | 26 | na | na |
| HER2- | 72 | **-** | **0.04** | 19 | na | na |
| HER2+ | 19 | - | 0.58 | 7 | na | na |
| **pAKT nuclear** | 91 | + | 0.24 | 26 | na | na |
| HER2- | 72 | - | 0.94 | 19 | na | na |
| HER2+ | 19 | + | 0.11 | 7 | na | na |
| **pAKT cytoplasmic** | 91 | - | 0.05 | 26 | na | na |
| HER2- | 72 | + | 0.83 | 19 | na | na |
| HER2+ | 19 | - | 0.93 | 7 | na | na |
| **Apoptosis (%)** | 81 | - | 0.43 | 23 | + | 0.17 |
| HER2- | 63 | - | 0.099 | 18 | + | 0.1 |
| HER2+ | 18 | - | 0.14 | 5 | na | na |
|  | **Lapatinib Treated Patients** | **Control Patients** |
| **mRNA Biomarker** | **N** | **Logistic regression** | **P-value** | **N** | **Logistic regression** | **p-value** |
| **HER2 mRNA** | 82 | + | 0.01 | 24 | + | 0.92(+) |
| HER2- | 65 | **+** | **0.022** | 18 | + | 0.34(+) |
| HER2+ | 17 | - | 0.79 | 6 | na | na |
| **HER3 mRNA** | 82 | + | 0.14 | 24 | na | na |
| HER2- | 65 | **+** | **0.0003** | 18 | na | na |
| HER2+ | 17 | - | 0.39 | 6 | na | na |
| **Amphiregulin mRNA** | 82 | + | 0.11 | 24 | na | na |
| HER2- | 65 | + | 0.48 | 18 | na | na |
| HER2+ | 17 | + | 0.07 | 6 | na | na |
| **Neuregulin mRNA** | 82 | + | 0.71 | 24 | na | na |
| HER2- | 65 | + | 0.49 | 18 | na | na |
| HER2+ | 17 | + | 0.86 | 6 | na | na |
| **Epiregulin mRNA** | 82 | + | 0.01 | 24 | + | 0.11 |
| HER2- | 65 | + | 0.33 | 18 | Na | na |
| HER2+ | 17 | **+** | **0.0003** | 6 | Na | na |
| **ESR1 mRNA** | 76 | + | 0.92 | 23 | + | 0.6 |
| HER2- | 60 | + | 0.21 | 18 | + | 0.62 |
| HER2+ | 16 | - | 0.97 | 5 | Na | na |
| **EGFR mRNA** | 76 | + | 0.78 | 23 | -- | 0.73 |
| HER2- | 60 | - | 0.71 | 18 | - | 0.66 |
| HER2+ | 16 | + | 0.63 | 5 | na | na |

\* Cases were included if paired data was available on Ki67 and baseline data on given protein or mRNA biomarker.