**Supplementary Table 2**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Protein Biomarker** | **N** | **Pre** | **N** | **Post** | **N** | **Change (%)** | **P-value** |
| **Ki67 (%)** | 27 | 20.9 (13.7-32) | 27 | 20.4 (13-31.9) | 27 | -2.8 (-16.3 to 13) | 0.65 |
| HER2- | 20 | 18.7 (11.3-31.1) | 20 | 19 (11-32.7) | 20 | 1.4 (-16.8 to 23.5) | 0.85 |
| HER2+ | 7 | 28.7 (10.7-76.8) | 7 | 24.7 (8.8-69.7) | 7 | -13.8 (-28.1 to 3.5) | na |
| **HER2 (FISH)** | 27 | 1.3 (1.23,1.4) | 27 | 1.31 (1.25,1.47) | 27 | 0 (-0.08 to 0.06) | 0.85 |
| HER2- | 20 | 1.245 (1.15,1.31) | 20 | 1.28 (1.18,1.32) | 20 | 0 (-0.07 to 0.11) | 0.82 |
| HER2+ | 7 | 6.39 (2.11,9.75) | 7 | 5.89 (1.85,9.62) | 7 | -0.13 (-2.78 to 1.57) | na |
| **EGFR (%pos)** | 27 | 29.6% | 27 | 29.6% | 27 | 0% up /0% down | 1 |
| HER2- | 20 | 30% | 20 | 30% | 20 | 0% up /0% down | 1 |
| HER2+ | 7 | 28.6% | 7 | 28.6% | 7 | 0% up /0% down | na |
| **pERK nuclear** | 15 | 175.8 (155.8-198.4) | 15 | 138 (97-196.4) | 15 | -21.5 (-46 to 14.1) | 0.28 |
| HER2- | 10 | 175.7 (148-208) | 10 | 122 (70-209) | 10 | -30.5 (-60.6 to 22.5) | 0.65 |
| HER2+ | 5 | 176 (137-225) | 5 | 176.5 (155-200) | 5 | 0.3 (-27 to 37.9) | na |
| **pERK cytoplasmic** | 15 | 7.8 (6.2-9.7) | 15 | 6.6 (4.5-9.8) | 15 | -15.1 (-40.6 to 21.3) | 1 |
| HER2- | 10 | 8.2 (5.9-11.3) | 10 | 5.7 (3.2-10.1) | 10 | -31 (-57.7 to 12.6) | 0.24 |
| HER2+ | 5 | 7 (4.8-10.2) | 5 | 9 (6.2-13) | 5 | 28.5 (-9.4 to 82.1) | na |
| **pAKT nuclear** | 15 | 125 (113-139) | 15 | 115.1 (96.6-137.2) | 15 | -8.2 (-19.5 to 4.7) | 0.19 |
| HER2- | 10 | 120 (106-136) | 10 | 101 (82.7-124) | 10 | -15.5 (-27.5 to -1.6) | 0.07 |
| HER2+ | 5 | 136 (106-174) | 5 | 147 (112-194) | 5 | 8.4 (-16.4 to 40.6) | na |
| **pAKT cytoplasmic** | 15 | 4.8 (2.5-9.1) | 15 | 4.4 (2.3-8.4) | 15 | -7.5 (-35.2 to 32) | 0.29 |
| HER2- | 10 | 4.2 (1.6-10.9) | 10 | 3.3 (1.3-8.6) | 10 | -20.1 (-42.2 to 10.5) | 0.152 |
| HER2+ | 5 | 6.3 (2.7-14.6) | 5 | 7.7 (4.6-12.9) | 5 | 23.8 (-60 to 282.8) | na |
| **STATHMIN** | 27 | 7.9 (6.2-10.1) | 27 | 6 (3.9-9.1) | 27 | -25.1 (-46.7 to 5.3) | 0.22 |
| HER2- | 20 | 8.2 (6-11.3) | 20 | 5.8 (3.3-10.2) | 20 | -29.8 (-55.5 to 10.6) | 0.08 |
| HER2+ | 7 | 7.2 (4.8-10.8) | 7 | 6.5 (4.4-9.5) | 7 | -9.8 (-38.5 to 32.3) | na |
| **ER** | 27 | 44.5 (18.5-107.2) | 27 | 36.7 (14.8-91.3) | 27 | -17.5 (-33.6 to 2.5) | 0.07 |
| HER2- | 20 | 51.2 (18.6-141.3) | 20 | 42.3 (14.9-120.1) | 20 | -17.4 (-36.3 to 7) | 0.032 |
| HER2+ | 7 | 29.9 (3-300.4) | 7 | 24.6 (2.1-281.9) | 7 | -17.8 (-51.9 to 40.3) | na |
| **PgR** | 27 | 21.1 (8.1-54.9) | 27 | 15.9 (5.9-42.3) | 27 | -24.9 (-45.9 to 4.2) | 0.31 |
| HER2- | 20 | 22.6 (7.3-70.2) | 20 | 15.9 (5-50.8) | 20 | -29.8 (-54.9 to 9.3) | 0.44 |
| HER2+ | 7 | 17.4 (1.6-188.5) | 7 | 15.8 (1.3-186.2) | 7 | -9 (-30.8 to 19.5) | na |
| **Apoptosis (%)** | 22 | 2.4 (1.9-3.1) | 22 | 2.5 (2.1-3.1) | 22 | 6.4 (-11.4 to 27.7) | 0.34 |
| HER2- | 17 | 2.3 (1.8-3) | 17 | 2.5 (2-3.1) | 17 | 7.9 (-13.7 to 34.8) | 0.27 |
| HER2+ | 5 | 2.6 (1-6.8) | 5 | 2.7 (1.1-6.2) | 5 | 1.5 (-36.1 to 61) | na |
| **mRNA Biomarker** | **N** | **Pre** | **N** | **Post** | **N** | **Change (%)** | **P-value** |
| **HER2 mRNA** | 20 | 0.6 (0.3-1.2) | 20 | 0.7 (0.4-1.3) | 20 | 6.5 (-11.1 to 27.6) | 0.26 |
| HER2- | 14 | 0.3 (0.2-0.5) | 14 | 0.3 (0.2-0.5) | 14 | 8.5 (-8.8 to 29) | 0.43 |
| HER2+ | 6 | 3.3 (0.9-12.7) | 6 | 3.4 (1.1-10.2) | 6 | 2 (-44.1 to 86.1) | na |
| **HER3 mRNA** | 20 | 1.2 (0.8-1.9) | 20 | 1.4 (0.9-2) | 20 | 12.1 (-10.4 to 40.1) | 0.22 |
| HER2- | 14 | 1.2 (0.7-2.2) | 14 | 1.4 (0.8-2.3) | 14 | 13.5 (-12.5 to 47.3) | 0.2 |
| HER2+ | 6 | 1.3 (0.7-2.2) | 6 | 1.4 (0.8-2.3) | 6 | 8.7 (-40.7 to 99.3) | na |
| **Amphiregulin mRNA** | 20 | 0.3 (0.1-0.9) | 20 | 0.6 (0.3-1.5) | 20 | 106.1 (-9.5 to 369) | 0.052 |
| HER2- | 14 | 0.2 (0-0.8) | 14 | 0.4 (0.1-1.1) | 14 | 130.5 (-29.4 to 652) | 0.14 |
| HER2+ | 6 | 1 (0.2-4.3) | 6 | 1.6 (0.3-9.6) | 6 | 58.8 (-34.5 to 285) | na |
| **Neuregulin mRNA** | 17 | 2.7 (1.3-5.5) | 17 | 7.4 (4.7-11.7) | 17 | 178.1 (22.4 to 531) | 0.01 |
| HER2- | 12 | 2.8 (1.2-6.8) | 12 | 7.7 (4.7-12.8) | 12 | 174.5 (-16.4 to 801.3) | 0.08 |
| HER2+ | 5 | 2.3 (0.3-19.5) | 5 | 6.6 (1.5-29.2) | 5 | 187 (13.3 to 626.7) | na |
| **Epiregulin mRNA** | 20 | 0.7 (0.2-2.1) | 20 | 1.7 (0.6-5) | 20 | 146.1 (5.5 to 473) | 0.1 |
| HER2- | 14 | 0.5 (0.2-1.5) | 14 | 0.8 (0.2-2.5) | 14 | 54.8 (-44.3 to 330) | 0.61 |
| HER2+ | 6 | 1.5 (0-51.3) | 6 | 10.7 (1.4-79.7) | 6 | 626.1 (49.6 to 3424) | na |
| **ESR1 mRNA** | 18 | 0.7 (0.2-2.2) | 18 | 0.9 (0.4-2.4) | 18 | 32.3 (-14.8 to 105.7) | 0.5 |
| HER2- | 13 | 0.6 (0.1-2.9) | 13 | 0.8 (0.2-3.2) | 13 | 48.7 (-15.6 to 162.2) | 0.28 |
| HER2+ | 5 | 1.2 (0.5-2.6) | 5 | 1.2 (0.4-3.3) | 5 | -2.3 (-60.8 to 143.7) | na |
| **EGFR mRNA** | 18 | 2 (1.1-3.8) | 18 | 3 (1.9-4.9) | 18 | 49 (-4.4 to 132.3) | 0.094 |
| HER2- | 13 | 2.3 (1.1-5) | 13 | 3.6 (2.1-6.2) | 13 | 56.2 (-10.3 to 172.1) | 0.13 |
| HER2+ | 5 | 1.4 (0.3-6.4) | 5 | 1.8 (0.4-7.4) | 5 | 31.9 (-57.4 to 308.4) | na |