**Table S1. Clinical characteristics of molecular subgroup**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | subtype1 (%) | subtype2 (%) | subtype3 (%) | P value |
| Stage I | 34 (14.5) | 24 (13.2) | 123 (18.3) | 8.26E-03 |
| Stage II | 122 (51.9) | 110 (60.4) | 384 (57.1) | 8.26E-03 |
| Stage III | 66 (28.1) | 34 (18.7) | 148 (22.0) | 8.26E-03 |
| Stage IV | 5 (2.1) | 7 (3.8) | 8 (3.8) | 8.26E-03 |
| Stage X | 8 (3.4) | 7 (3.8) | 9 (1.3) | 8.26E-03 |
| M0 | 203 (86.4) | 145 (79.7) | 558 (83.0) | 5.16E-02 |
| M1 | 5 (2.1) | 8 (4.4) | 9 (1.3) | 5.16E-02 |
| MX | 27 (11.5) | 29 (15.9) | 105 (15.6) | 5.16E-02 |
| N0 | 104 (44.3) | 91 (50.0) | 319 (47.5) | 5.11E-02 |
| N1 | 71 (30.2) | 52 (28.6) | 236 (35.1) | 5.11E-02 |
| N2 | 33 (14.0) | 17 (9.3) | 69 (10.3) | 5.11E-02 |
| N3 | 21 (8.9) | 15 (8.2) | 41 (6.1) | 5.11E-02 |
| NX | 6 (2.6) | 7 (3.8) | 7 (1.0) | 5.11E-02 |
| T1 | 55 (23.4) | 36 (19.8) | 188 (28.0) | 4.31E-02 |
| T2 | 137 (58.3) | 111 (61.0) | 381 (56.7) | 4.31E-02 |
| T3 | 28 (11.9) | 23 (12.6) | 87 (12.9) | 4.31E-02 |
| T4 | 14 (6.0) | 11 (6.0) | 15 (2.2) | 4.31E-02 |
| TX | 1 (0.4) | 1 (0.5) | 1 (0.1) | 4.31E-02 |
| ER status Indeterminate | 12 (5.1) | 12 (6.6) | 25 (3.7) | 2.13E-06 |
| ER status Negative | 26 (11.1) | 29 (15.9) | 181 (26.9) | 2.13E-06 |
| ER status Positive | 197 (83.8) | 141 (77.5) | 466 (69.3) | 2.13E-06 |
| HER2 status Indeterminate | 76 (32.3) | 59 (32.4) | 232 (34.5) | 2.78E-01 |
| HER2 status Negative | 115 (48.9) | 92 (50.5) | 352 (52.4) | 2.78E-01 |
| HER2 status Positive | 44 (18.7) | 31 (17.0) | 88 (13.1) | 2.78E-01 |
| PR status Indeterminate | 12 (5.1) | 12 (6.6) | 28 (4.2) | 3.89E-02 |
| PR status Negative | 61 (26.0) | 48 (26.4) | 234 (34.8) | 3.89E-02 |
| PR status Positive | 162 (68.9) | 122 (67.0) | 410 (61.0) | 3.89E-02 |
| Fraction genome altered<0.25 | 93 (40.4) | 74 (41.8) | 362 (54.5) | 9.93E-05 |
| Fraction genome altered>=0.25 | 137 (59.6) | 103 (58.2) | 302 (45.5) | 9.93E-05 |
| Patient primary tumor site left | 123 (52.3) | 93 (51.1) | 351 (52.2) | 9.59E-01 |
| Patient primary tumor site right | 112 (47.7) | 89 (48.9) | 321 (47.8) | 9.59E-01 |
| C1 | 82 (35.3) | 52 (29.2) | 233 (35.0) | 1.72E-39 |
| C2 | 96 (41.4) | 35 (19.7) | 257 (38.6) | 1.72E-39 |
| C3 | 23 (9.9) | 25 (14.0) | 142 (21.3) | 1.72E-39 |
| C4 | 17 (7.3) | 60 (33.7) | 14 (2.1) | 1.72E-39 |
| C6 | 14 (6.0) | 6 (3.4) | 20 (3.0) | 1.72E-39 |
| Basal-like | 14 (6.0) | 25 (14.0) | 133 (20.0) | 2.82E-16 |
| HER2-enriched | 20 (8.6) | 5 (2.8) | 47 (7.1) | 2.82E-16 |
| Luminal A | 105 (45.3) | 78 (43.8) | 323 (48.5) | 2.82E-16 |
| Luminal B | 72 (31.0) | 52 (29.2) | 67 (10.1) | 2.82E-16 |
| Normal-like | 21 (9.1) | 18 (10.1) | 96 (14.4) | 2.82E-16 |