**Suppl 3:** 23 genes closely involved in distant RFS in HR+ HER2− patients extracted from 155 signature genes using the Cox‑PH model.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Covariate** | **Coef** | **Exp (coef)** | **Se (coef)** | **coef lower 95%** | **coef upper 95%** | **Exp (coef) lower 95%** | **Exp (coef) upper 95%** | **z** | **P** | **-log2(p)** |
| AGL | 0.359 | 1.432 | 0.121 | 0.122 | 0.597 | 1.129 | 1.817 | 2.961 | 0.003 | 8.351 |
| BIRC5 | 0.613 | 1.846 | 0.227 | 0.168 | 1.058 | 1.183 | 2.880 | 2.701 | 0.007 | 7.175 |
| C1orf64 | -0.211 | 0.810 | 0.073 | -0.353 | -0.068 | 0.702 | 0.934 | -2.900 | 0.004 | 8.067 |
| CDCA3 | 0.847 | 2.333 | 0.368 | 0.125 | 1.569 | 1.134 | 4.803 | 2.300 | 0.021 | 5.544 |
| CENPF | 0.561 | 1.753 | 0.283 | 0.006 | 1.117 | 1.006 | 3.055 | 1.982 | 0.047 | 4.396 |
| CEP55 | -0.993 | 0.371 | 0.396 | -1.768 | -0.217 | 0.171 | 0.805 | -2.508 | 0.012 | 6.364 |
| CIDEC | -0.317 | 0.728 | 0.154 | -0.618 | -0.016 | 0.539 | 0.984 | -2.062 | 0.039 | 4.673 |
| CKAP2L | 1.230 | 3.422 | 0.499 | 0.252 | 2.209 | 1.286 | 9.104 | 2.464 | 0.014 | 6.184 |
| CRTAP | -0.705 | 0.494 | 0.298 | -1.290 | -0.121 | 0.275 | 0.886 | -2.367 | 0.018 | 5.802 |
| CYP4F22 | -0.284 | 0.753 | 0.101 | -0.482 | -0.086 | 0.617 | 0.917 | -2.815 | 0.005 | 7.679 |
| E2F2 | -0.757 | 0.469 | 0.301 | -1.347 | -0.168 | 0.260 | 0.846 | -2.518 | 0.012 | 6.404 |
| FHL2 | 0.250 | 1.284 | 0.115 | 0.026 | 0.475 | 1.026 | 1.607 | 2.183 | 0.029 | 5.107 |
| FOS | 0.381 | 1.464 | 0.184 | 0.020 | 0.742 | 1.020 | 2.101 | 2.070 | 0.038 | 4.701 |
| GSTM2 | -0.189 | 0.828 | 0.081 | -0.348 | -0.031 | 0.706 | 0.970 | -2.340 | 0.019 | 5.696 |
| HNMT | -0.685 | 0.504 | 0.255 | -1.184 | -0.186 | 0.306 | 0.830 | -2.689 | 0.007 | 7.124 |
| KIF20A | 0.936 | 2.550 | 0.385 | 0.181 | 1.692 | 1.198 | 5.428 | 2.429 | 0.015 | 6.046 |
| LAD1 | 0.216 | 1.241 | 0.110 | 0.000 | 0.432 | 1.000 | 1.541 | 1.962 | 0.050 | 4.330 |
| PIP | 0.118 | 1.125 | 0.055 | 0.010 | 0.226 | 1.010 | 1.253 | 2.137 | 0.033 | 4.939 |
| PRC1 | -1.138 | 0.321 | 0.328 | -1.781 | -0.494 | 0.168 | 0.610 | -3.464 | 0.001 | 10.874 |
| S100P | 0.140 | 1.150 | 0.055 | 0.032 | 0.247 | 1.033 | 1.281 | 2.547 | 0.011 | 6.526 |
| SEPP1 | 0.462 | 1.587 | 0.161 | 0.146 | 0.778 | 1.157 | 2.176 | 2.866 | 0.004 | 7.909 |
| STAT1 | -0.710 | 0.492 | 0.202 | -1.105 | -0.314 | 0.331 | 0.730 | -3.516 | 0.000 | 11.158 |
| TUBA3D | -0.197 | 0.822 | 0.086 | -0.365 | -0.028 | 0.694 | 0.973 | -2.281 | 0.023 | 5.471 |

**Abbreviations:** RFS, recurrence free survival; HR+, hormone receptor positive; HER2, human epidermal growth receptor 2; Cox-PH, Cox Proportional-Hazards.