**Supplementary Table 2. Univariate cox regression analysis in HPV (-) cancers**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Dataset** | **Gene** | | **P value** | **coef** | **HR** | **95 CI** | |
| HPV (-)  HNC |  | *ITGA5* | 0.23 | 0.1753 | 1.1916 | 0.895 | 1.587 |
| *ITGB1* | 0.542 | 0.08907 | 1.09315 | 0.821 | 1.456 |
| *LAMB1* | 0.0144 \* | -0.3618 | 0.6964 | 0.5213 | 0.9305 |
| *LAMC1* | 0.929 | -0.01311 | 0.98698 | 0.741 | 1.315 |
| down | *CD3D* | 0.16 | -0.2057 | 0.8141 | 0.6109 | 1.085 |
| *CD3E* | 0.0218 \* | -0.3374 | 0.7136 | 0.5349 | 0.9522 |
| *CD8B* | 0.746 | -0.04728 | 0.95382 | 0.7169 | 1.269 |
| *LCK* | 0.217 | -0.1801 | 0.8351 | 0.6272 | 1.112 |
| *ZAP70* | 0.0188 \* | -0.3452 | 0.7081 | 0.5309 | 0.9444 |
| HPV (-)  CC | up | *ITGA5* | 0.417 | 0.7130 | 2.0401 | 0.3653 | 11.39 |
| *ITGB1* | 0.177 | -1.4854 | 0.2264 | 0.02616 | 1.96 |
| *LAMB1* | 0.696 | 0.3222 | 1.3802 | 0.2745 | 6.94 |
| *LAMC1* | 0.661 | -0.3830 | 0.6818 | 0.1232 | 3.772 |
| down | *CD3D* | 0.239 | -1.0280 | 0.3577 | 0.06458 | 1.982 |
| *CD3E* | 0.0858 | -1.8891 | 0.1512 | 0.01752 | 1.305 |
| *CD8B* | 0.838 | -0.1685 | 0.8449 | 0.1685 | 4.237 |
| *LCK* | 0.713 | -0.3040 | 0.7379 | 0.1463 | 3.721 |
| *ZAP70* | 0.231 | -1.0468 | 0.3511 | 0.06342 | 1.943 |