**Table legends**

**Table 1:** Results from univariable cox regression analysis with hazard ratios, 95% confidence interval and p-values of the best prediction model and other gene expression signatures across multiple solid tumor types. HR = Hazard ratio; LCI = Lower confidence interval; UCI = upper confidence interval; ECA = Effector T cell cytolytic activity; TCA = T cell cytolytic activity; BRCA = breast carcinoma from TCGA; SKCM = skin cutaneous melanoma; SKCM met = metastatic skin cutaneous melanoma; HNSC = Head and neck squamous cell carcinoma; COAD = colon adenocarcinoma; KIRC = renal clear cell carcinoma, clear cell; KIRP = renal papillary cell carcinoma; CESC = cervical squamous cell carcinoma and endocervical carcinoma; BLCA = bladder cell carcinoma; LIHC = liver and hepatocellular carcinoma; GBM = glioblastoma multiforme; LGG = low grade glioma; UCEC = uterine corpus endometrial carcinoma.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **ECA** | **TCA** | **Tfh signature** | **Th1 signature** | **Treg signature** | **IMMUNE1** | **IMMUNE2** | **Interferon-γ** |
| **BRCA** | HR (LCI-UCI) | 0.406 (0.179-0.922) | 0.813 (0.554-1.192) | 0.829 (0.573-1.199) | 0.661 (0.458-0.953) | 0.788 (0.557-1.113) | 0.89 (0.62-1.276) | 0.757 (0.533-1.077) | 0.725 (0.505-1.042) |
| pval | 0.03 | 0.289 | 0.319 | 0.027 | 0.176 | 0.525 | 0.122 | 0.082 |
| **SKCM** | HR (LCI-UCI) | 0.394 (0.202-0.768) | 0.087 (0.01-0.772) | 0.045 (0.001-1.707) | 0.026 (0-1.949) | 0.005 (0-0.611) | 0.272 (0.007-10.731) | 0.01 (0-0.694) | 0.074 (0.007-0.742) |
| pval | 0.006 | 0.028 | 0.095 | 0.097 | 0.031 | 0.487 | 0.033 | 0.027 |
| **SKCM met** | HR (LCI-UCI) | 0.636 (0.482-0.84) | 0.442 (0.215-0.91) | 0.219 (0.065-0.737) | 0.193 (0.042-0.881) | 0.208 (0.035-1.231) | 0.128 (0.03-0.537) | 0.134 (0.034-0.539) | 0.321 (0.136-0.757) |
| pval | 0.001 | 0.027 | 0.014 | 0.034 | 0.083 | 0.005 | 0.005 | 0.009 |
| **HNSC** | HR (LCI-UCI) | 0.71 (0.552-0.914) | 0.452 (0.201-1.016) | 0.033 (0.006-0.181) | 0.132 (0.024-0.733) | 0.012 (0.001-0.107) | 0.662 (0.166-2.642) | 0.187 (0.039-0.894) | 0.243 (0.096-0.611) |
| pval | 0.008 | 0.055 | <0.001 | 0.021 | <0.001 | 0.559 | 0.036 | 0.003 |
| **COAD** | HR (LCI-UCI) | 0.617 (0.388-0.98) | 0.473 (0.078-2.876) | 0.058 (0.002-1.483) | 0.075 (0.002-2.767) | 0 (0-0.01) | 1.392 (0.236-8.194) | 0.295 (0.013-6.441) | 0.305 (0.04-2.304) |
| pval | 0.041 | 0.416 | 0.085 | 0.159 | NA | 0.715 | 0.437 | 0.25 |
| **KIRC** | HR (LCI-UCI) | 1.391 (1.055-1.833) | 1.648 (0.754-3.603) | 9.691 (1.983-47.359) | 6.044 (0.937-38.974) | 333.904 (10.613-10505.268) | 18.58 (1.276-270.528) | 7.094 (0.899-56.001) | 2.67 (1.054-6.766) |
| pval | 0.019 | 0.211 | 0.005 | 0.059 | 0.001 | 0.032 | 0.063 | 0.038 |
| **KIRP** | HR (LCI-UCI) | 1.746 (1.095-2.786) | 3.131 (0.522-18.765) | 18.091 (0.416-786.079) | 2.175 (0.021-220.841) | 305.254 (0.201-463997.903) | 1.856 (0.053-64.851) | 8.046 (0.145-447.081) | 9.454 (1.295-68.994) |
| pval | 0.019 | 0.212 | 0.132 | 0.742 | 0.126 | 0.733 | 0.309 | 0.027 |
| **CESC** | HR (LCI-UCI) | 0.611 (0.385-0.972) | 0.178 (0.049-0.645) | 0.005 (0-0.105) | 0.044 (0.004-0.486) | 0.009 (0-0.345) | 0.355 (0.048-2.622) | 0.027 (0.002-0.33) | 0.102 (0.023-0.453) |
| pval | 0.038 | 0.009 | 0.001 | 0.011 | 0.011 | 0.31 | 0.005 | 0.003 |
| **BLCA** | HR (LCI-UCI) | 0.628 (0.472-0.838) | 0.472 (0.219-1.015) | 0.266 (0.066-1.076) | 0.356 (0.093-1.37) | 0.167 (0.029-0.96) | 1.098 (0.373-3.226) | 0.313 (0.079-1.24) | 0.423 (0.182-0.98) |
| pval | 0.002 | 0.055 | 0.063 | 0.133 | 0.045 | 0.866 | 0.098 | 0.045 |
| **LIHC** | HR (LCI-UCI) | 0.577 (0.427-0.78) | 0.092 (0.026-0.333) | 0.121 (0.016-0.932) | 0.071 (0.008-0.644) | 0.051 (0.001-2.035) | 1.565 (0.406-6.04) | 0.069 (0.007-0.72) | 0.12 (0.029-0.499) |
| pval | <0.001 | <0.001 | 0.043 | 0.019 | 0.114 | 0.515 | 0.025 | 0.004 |
| **GBM** | HR (LCI-UCI) | 1.485 (1.043-2.115) | 4.165 (0.648-26.774) | 8.664 (0.163-461.271) | 7.715 (0.034-1751.111) | 23.192 (0.667-806.6) | 313.72 (0.503-195624.121) | 4.146 (0.29-59.363) | 6.468 (0.592-70.675) |
| pval | 0.028 | 0.133 | 0.287 | 0.46 | 0.083 | 0.08 | 0.295 | 0.126 |
| **LGG** | HR (LCI-UCI) | 1.551 (1.175-2.046) | 11.384 (1.788-72.465) | 5.859 (0.102-337.61) | 11624.965 (176.131-767266.761) | 5.706 (0.139-234.963) | 172.284 (11.699-2537.066) | 248.332 (25.117-2455.252) | 96.191 (14.129-654.881) |
| pval | 0.002 | 0.01 | 0.393 | <0.001 | 0.359 | <0.001 | <0.001 | <0.001 |
| **UCEC** | HR (LCI-UCI) | 0.485 (0.257-0.915) | 0.156 (0.018-1.379) | 0.019 (0-1.076) | 0.386 (0.008-18.272) | 0.007 (0-0.84) | 0.419 (0.017-10.233) | 1.599 (0.028-90.259) | 0.191 (0.017-2.15) |
| pval | 0.026 | 0.095 | 0.054 | 0.629 | 0.042 | 0.594 | 0.82 | 0.18 |