**Supplementary Table S6.** Immune-related expression profile gene signatures.

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| --- | --- |
| **Signature** | **Genes** |
| Antigen processing | *TAPBP*, *TAP1*, *TAP2*, *PSMB9*, *PSMB8* |
| B-cell | *CD79A*, *MS4A1*, *CD19*, *STAP1*, *KIAA0125*, *POU2AF1*, *FCRL5* |
| CD8 Teff | *CD8A*, *GZMA*, *GZMB*, *IFNG*, *EOMES*, *PRF1* |
| Costimulatory receptors | *CD27*, *CD28*, *ICOS*, *TNFRSF4*, *TNFRSF14*, *TNFRSF18*, *TNFRSF14*, *TNFSF14*, *CD226* |
| Cytolytic | *GNLY*, *KLRK1*, *KLRB1*, *GZMH*, *GZMA*, *KLRD1*, *NKG7* |
| Cytotoxic | *KLRK1*, *PRF1* |
| Immune blockers | *PDCD1*, *LAG3*, *TIGIT*, *CD27*, *CD72*, *GITRL*, *IDO1* |
| Immune checkpoints-T cells | *BTLA*, *LAG3*, *HAVCR2*, *PDCD1*, *TIGIT*, *CTLA4* |
| Major histocompatibility class I | *HLA-A*, *HLA-C* |
| Natural killer cell | *KLRC3*, *KLRK1*, *KLRC2*, *KLRD1* |
| T-cell exhaustion | *CXCL13*, *TNFRSF1B*, *RGS2*, *TIGIT*, *CD27*, *TNFRSF9*, *SLA*, *RNF19A*, *INPP5F*, *XCL2*, *HLA-DMA*, *FAM3C*, *UQCRC1*, *WARS*, *EIF3L*, *KCNK5*, *TMBIM6*, *CD200*, *ZC3H7A*, *SH2D1A*, *ATP1B3*, *MYO7A*, *THADA*, *PARK7*, *EGR2*, *FDFT1*, *CRTAM*, *IFI16* |
| Angiogenesis | *ESM1*, *ANGPT2*, *LAMA4*, *NID2*, *CDH5*, *FLT1*, *PECAM1*, *CD34*, *PLVAP* |
| Epithelial-mesenchymal transition | *VIM*, *ZEB1*, *ZEB2*, *TWIST1*, *TWIST2*, *SNAI1*, *SNAI2*, *RUNX2*, *ZYX*, *CDH1* |
| Mitogen-activated protein kinase | *DUSP4*, *DUSP6*, *SPRY2*, *SPRY4*, *CCND1*, *ETV4*, *ETV5*, *EPHA2*, *EPHA4*, *PHLDA1* |