**Supplementary Table S1:**

Gene signatures used to analyze the different components of immune response

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***IFN-γ pathway*** | *STAT1* | *HLA-DRB5* | *NOS2* | *CD33* | *IL2RA* |
| *CD3D* | *GZMB* | *NLRC5* | *PRF1* | *FUT4* | *TGFB1* |
| *CD3E* | *IDO1* | *PSMB8* | *TNFRSF14* | *ITGAM* | ***NK Cell*** |
| *CIITA* | ***Antigen Presentation*** | *PSMB9* | ***Immune Checkpoint*** | ***TNF*** | *CD56* |
| *CD2* | *B2M* | *TAP2* | *CD274* | ***M2 Macrophages*** | *FCGR3A* |
| *HLA-DRA* | *HLA-A* | ***Cytotoxic T-cell Function*** | *CTLA4* | *CD163* |  |
| *CXCL13* | *HLA-B* | *ARG1* | *HAVCR2* | *CD163L1* |  |
| *IL2RG* | *HLA-C* | *BTLA* | *IDO1* | *CD209* |  |
| *HLA-E* | *HLA-DMA* | *CD160* | *IDO2* | *F13A1* |  |
| *CXCR6* | *HLA-DMB* | *CD80* | *IL4I1* | *FOLR2* |  |
| *LAG3* | *HLA-DOA* | *CD86* | *LAG3* | *MRC1* |  |
| *NKG7* | *HLA-DOB* | *CD8A* | *PDCD1* | *MS4A4A* |  |
| *GZMK* | *HLA-DPA1* | *GZMA* | *PDCD1LG2* | ***T regs*** |  |
| *CCL5* | *B2M* | *GZMB* | *TNFRSF4* | *FOXP3* |  |
| *TAGAP* | *HLA-DRA* | *IFNG* | ***MDSC*** | *ICOS* |  |
| *CXCL10* | *HLA-DRB1* | *KLRG1* | *CD14* | *IL10* |  |