

**TABLE S8: Genes set enrichment analysis revealed a significant overrepresentation of the KEGG\_CYTOKINE\_CYTOKINE\_RECECTOR\_INTERACTION set in low Combo score patients compared to high Combo score patients ( $P < 0.0001$ ).**

| PROBE     | GENE SYMBOL | GENE_TITLE   | RANK | METRIC SCORE | RUNNING_ES  | CORE ENRICHMENT |
|-----------|-------------|--|------|--------------|-------------|-----------------|
| CXCL12    | CXCL12      | chemokine (C-X-C motif) ligand 12 (stromal cell-derived factor 1)  |      | 0.374263227  | 0.03703449  | Yes             |
| IL1B      | IL1B        | interleukin 1, beta  |      | 0.300350547  | 0.06454179  | Yes             |
| CSF1R     | CSF1R       | colony stimulating factor 1 receptor, formerly McDonough feline sarcoma viral (v-fms) oncogene homolog       |      | 0.283336967  | 0.09102628  | Yes             |
| VEGFC     | VEGFC       | vascular endothelial growth factor C   |      | 0.244603112  | 0.100454465 | Yes             |
| CCL8      | CCL8        | chemokine (C-C motif) ligand 8   |      | 0.242488205  | 0.12374423  | Yes             |
| LTB       | LTB         | lymphotoxin beta (TNF superfamily, member 3)   |      | 0.240899578  | 0.14687385  | Yes             |
| IL28A     | IL28A       | interleukin 28A (interferon, lambda 2)   |      | 0.239025205  | 0.17004527  | Yes             |
| IL8       | IL8         | interleukin 8  |      | 0.234310955  | 0.18951121  | Yes             |
| CCL18     | CCL18       | chemokine (C-C motif) ligand 18 (pulmonary and activation-regulated)   |      | 0.232407987  | 0.21224633  | Yes             |
| LIFR      | LIFR        | leukemia inhibitory factor receptor alpha  |      | 0.231997937  | 0.23494011  | Yes             |
| CCR7      | CCR7        | chemokine (C-C motif) receptor 7   |      | 0.224684015  | 0.25043607  | Yes             |
| CXCL5     | CXCL5       | chemokine (C-X-C motif) ligand 5   |      | 0.213358849  | 0.25948358  | Yes             |
| IL18      | IL18        | interleukin 18 (interferon-gamma-inducing factor)  |      | 0.198532909  | 0.2575765   | Yes             |
| FLT3      | FLT3        | fms-related tyrosine kinase 3  |      | 0.193516344  | 0.2692385   | Yes             |
| EPOR      | EPOR        | erythropoietin receptor  |      | 0.193038225  | 0.2877743   | Yes             |
| EGFR      | EGFR        | epidermal growth factor receptor (erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian)           |      | 0.191823065  | 0.30503395  | Yes             |
| TNFRSF1B  | TNFRSF1B    | tumor necrosis factor receptor superfamily, member 1B  |      | 0.18100886   | 0.30205262  | Yes             |
| TNFSF8    | TNFSF8      | tumor necrosis factor (ligand) superfamily, member 8   |      | 0.178310588  | 0.31495064  | Yes             |
| CSF3R     | CSF3R       | colony stimulating factor 3 receptor (granulocyte)   |      | 0.168965831  | 0.31560072  | Yes             |
| CCL16     | CCL16       | chemokine (C-C motif) ligand 16  |      | 0.167191952  | 0.32899308  | Yes             |
| IL18RAP   | IL18RAP     | interleukin 18 receptor accessory protein  |      | 0.165709525  | 0.3433897   | Yes             |
| IL2RB     | IL2RB       | interleukin 2 receptor, beta   |      | 0.15987362   | 0.34681502  | Yes             |
| CCR9      | CCR9        | chemokine (C-C motif) receptor 9   |      | 0.156392083  | 0.35381186  | Yes             |
| CXCL6     | CXCL6       | chemokine (C-X-C motif) ligand 6 (granulocyte chemotactic protein 2)   |      | 0.15075317   | 0.35701     | Yes             |
| IL21R     | IL21R       | interleukin 21 receptor  |      | 0.150014937  | 0.36959383  | Yes             |
| PF4V1     | PF4V1       | platelet factor 4 variant 1  |      | 0.146394417  | 0.3778902   | Yes             |
| TNFSF9    | TNFSF9      | tumor necrosis factor (ligand) superfamily, member 9   |      | 0.145140558  | 0.38882902  | Yes             |
| TGFB2     | TGFB2       | transforming growth factor, beta 2   |      | 0.144315422  | 0.4015305   | Yes             |
| TNFSF4    | TNFSF4      | tumor necrosis factor (ligand) superfamily, member 4 (tax-transcriptionally activated glycoprotein 1, 34kDa) |      | 0.144280821  | 0.41584364  | Yes             |
| IL12B     | IL12B       | interleukin 12B (natural killer cell stimulatory factor 2, cytotoxic lymphocyte maturation factor 2, p40)    |      | 0.138393223  | 0.41664222  | Yes             |
| CXCL1     | CXCL1       | chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity, alpha)                               |      | 0.13808839   | 0.42963895  | Yes             |
| PDGFRA    | PDGFRA      | platelet-derived growth factor receptor, alpha polypeptide   |      | 0.13194555   | 0.42540362  | Yes             |
| FAS       | FAS         | Fas (TNF receptor superfamily, member 6)   |      | 0.126809865  | 0.42503455  | Yes             |
| CCL23     | CCL23       | chemokine (C-C motif) ligand 23  |      | 0.123425379  | 0.43055415  | Yes             |
| IL1R1     | IL1R1       | interleukin 1 receptor, type I   |      | 0.120059006  | 0.4352729   | Yes             |
| TNFRSF11A | TNFRSF11A   | tumor necrosis factor receptor superfamily, member 11a, NFKB activator                                       |      | 0.119455054  | 0.44546843  | Yes             |
| PPBP      | PPBP        | pro-platelet basic protein (chemokine (C-X-C motif) ligand 7)  |      | 0.118266091  | 0.45346746  | Yes             |
| TNFSF13B  | TNFSF13B    | tumor necrosis factor (ligand) superfamily, member 13b   |      | 0.116980471  | 0.46087545  | Yes             |
| GHR       | GHR         | growth hormone receptor  |      | 0.114393204  | 0.46617678  | Yes             |
| PF4       | PF4         | platelet factor 4 (chemokine (C-X-C motif) ligand 4)   |      | 0.112276815  | 0.47195697  | Yes             |
| IL1RAP    | IL1RAP      | interleukin 1 receptor accessory protein   |      | 0.111347876  | 0.4804123   | Yes             |
| CX3CR1    | CX3CR1      | chemokine (C-X3-C motif) receptor 1  |      | 0.105247162  | 0.47648525  | Yes             |
| BMPR1B    | BMPR1B      | bone morphogenetic protein receptor, type IB   |      | 0.103471495  | 0.48345444  | Yes             |