

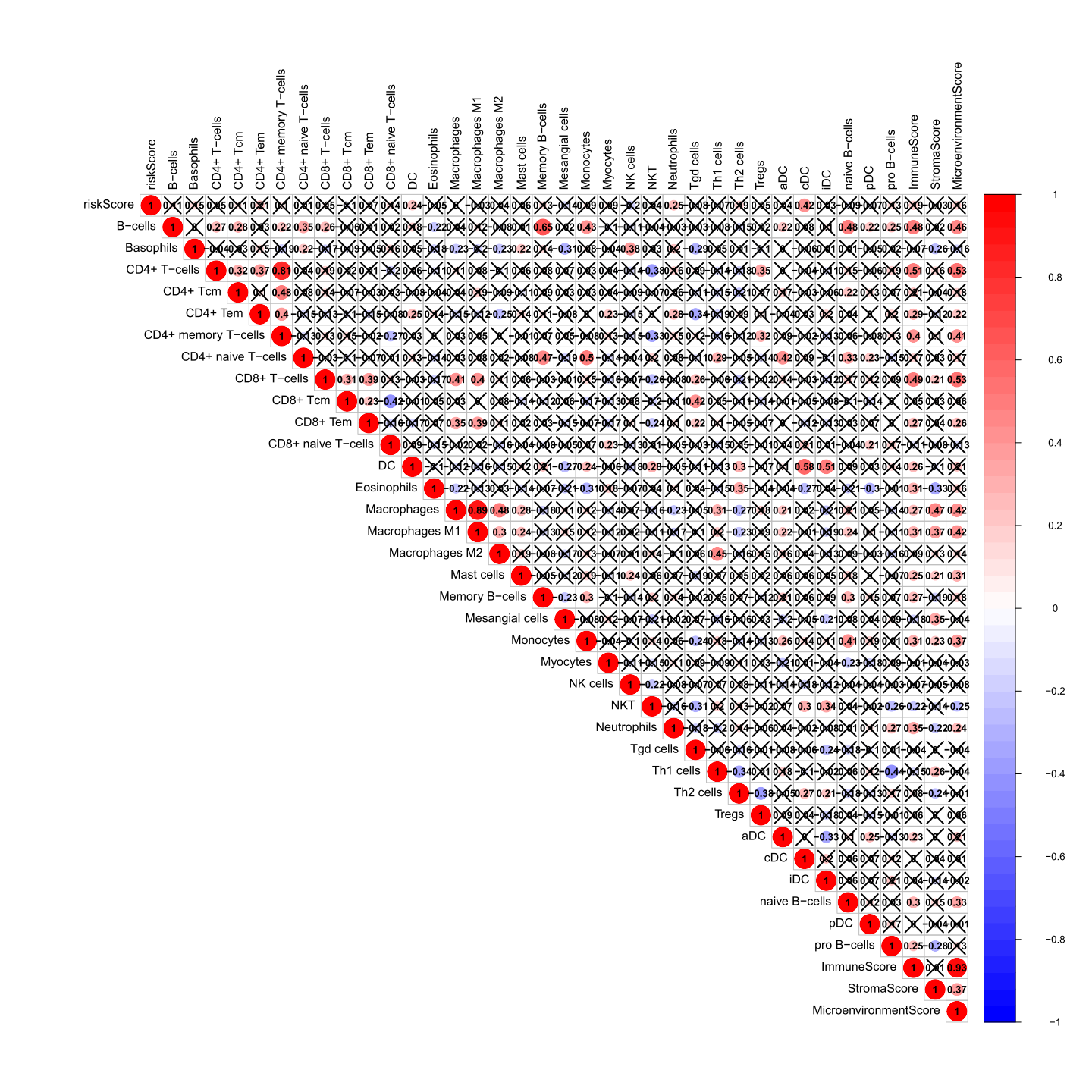
**Figure S1. A,** Heatmap of RMWs in OS tissue from the Target dataset and GSE21257 dataset. **B,** GO and KEGG analyses of DEGs.



**Figure S2.** Survival analysis of OS patients with differential expression of CSTF2, ADAR and WTAP in both TCGA and GEO datasets.



**Figure S3.** The correlation between risk RMW expression and clinical characteristics.

**Figure S4.** The relationship between the risk score and immune infiltration was analysed using Pearson’s correlation analysis.

**Table S1.** Univariate Cox analysis revealed prognosis-related DEGs in the high- and low-risk groups

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| id | HR | HR.95L | HR.95H | p value |
| VWA8 | 0.997 | 0.995 | 0.999 | 0.001 |
| MSN | 0.999 | 0.998 | 1.000 | 0.045 |
| ALG13 | 0.961 | 0.927 | 0.996 | 0.027 |
| CD44 | 0.971 | 0.949 | 0.993 | 0.011 |
| ULK2 | 0.995 | 0.991 | 0.999 | 0.014 |
| SRR | 0.994 | 0.987 | 1.000 | 0.039 |
| BDH2 | 1.029 | 1.015 | 1.043 | 0.000 |
| MX1 | 0.990 | 0.982 | 0.998 | 0.011 |
| FAM98A | 0.937 | 0.892 | 0.985 | 0.010 |
| SLC6A8 | 0.981 | 0.967 | 0.995 | 0.010 |
| MRPL35 | 0.998 | 0.996 | 1.000 | 0.012 |
| C6orf89 | 0.999 | 0.998 | 1.000 | 0.028 |

**Table S2.** The relationship between TF and prognosis-related DEGs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Prognosis\_related\_DEGs | TFs | cor | p value | FDR |
| VWA8 | BCL6 | 0.419189 | 6.52E-05 | 0.000603 |
| VWA8 | NCAPG | 0.458489 | 1.02E-05 | 0.000146 |
| MSN | ATF2 | 0.448992 | 1.63E-05 | 0.000201 |
| MSN | BCL6 | 0.457092 | 1.09E-05 | 0.000147 |
| MSN | LYL1 | -0.46368 | 7.85E-06 | 0.000116 |
| MSN | RNF2 | 0.423834 | 5.30E-05 | 0.000535 |
| CD44 | EGR2 | -0.40972 | 9.87E-05 | 0.000842 |
| CD44 | TCF12 | 0.556529 | 3.19E-08 | 1.42E-06 |
| CD44 | PIAS1 | 0.471934 | 5.13E-06 | 8.13E-05 |
| CD44 | ATF1 | 0.504197 | 8.67E-07 | 2.41E-05 |
| CD44 | SMAD3 | 0.512703 | 5.26E-07 | 1.67E-05 |
| CD44 | DYRK1A | 0.467404 | 6.49E-06 | 9.93E-05 |
| ULK2 | EGR2 | -0.42222 | 5.70E-05 | 0.00054 |
| ULK2 | MAZ | -0.41396 | 8.21E-05 | 0.000715 |
| ULK2 | BCL6 | 0.499934 | 1.11E-06 | 2.73E-05 |
| ULK2 | TCF12 | 0.663043 | 4.73E-12 | 2.10E-09 |
| ULK2 | RCOR1 | 0.417928 | 6.90E-05 | 0.000625 |
| ULK2 | HSF2 | 0.406827 | 0.000112 | 0.000902 |
| ULK2 | PBX1 | 0.478319 | 3.66E-06 | 6.25E-05 |
| ULK2 | SMAD1 | -0.49687 | 1.32E-06 | 3.08E-05 |
| ULK2 | ATF1 | 0.588517 | 3.15E-09 | 3.50E-07 |
| ULK2 | LYL1 | -0.42723 | 4.55E-05 | 0.000491 |
| ULK2 | RNF2 | 0.556478 | 3.20E-08 | 1.42E-06 |
| ULK2 | DYRK1A | 0.527144 | 2.18E-07 | 8.81E-06 |
| ULK2 | NCAPG | 0.520085 | 3.37E-07 | 1.15E-05 |
| SRR | FOXO3 | -0.42675 | 4.65E-05 | 0.000491 |
| SRR | RBL2 | 0.476599 | 4.01E-06 | 6.59E-05 |
| SRR | MAZ | -0.4068 | 0.000112 | 0.000902 |
| SRR | TCF12 | 0.444992 | 1.98E-05 | 0.000231 |
| SRR | TRIM28 | 0.403873 | 0.000127 | 0.000988 |
| SRR | SMAD3 | 0.478365 | 3.65E-06 | 6.25E-05 |
| SRR | USF1 | -0.60625 | 7.82E-10 | 1.46E-07 |
| SRR | DYRK1A | 0.560264 | 2.47E-08 | 1.37E-06 |
| SRR | EHMT2 | -0.58447 | 4.29E-09 | 3.81E-07 |
| BDH2 | BCL3 | -0.42849 | 4.29E-05 | 0.000477 |
| BDH2 | BCL6 | -0.45384 | 1.29E-05 | 0.000168 |
| BDH2 | DYRK1A | -0.42425 | 5.20E-05 | 0.000535 |
| MX1 | BCL6 | 0.491688 | 1.76E-06 | 3.92E-05 |
| MX1 | TCF12 | 0.457345 | 1.08E-05 | 0.000147 |
| MX1 | LYL1 | -0.50236 | 9.64E-07 | 2.52E-05 |
| MX1 | DYRK1A | 0.414562 | 8.00E-05 | 0.00071 |
| FAM98A | TRIM28 | 0.60333 | 9.89E-10 | 1.46E-07 |
| FAM98A | MEF2A | 0.432182 | 3.62E-05 | 0.000412 |
| FAM98A | BRD4 | 0.575637 | 8.25E-09 | 6.11E-07 |
| SLC6A8 | FOXO3 | -0.45309 | 1.34E-05 | 0.000169 |
| SLC6A8 | RBL2 | 0.482701 | 2.89E-06 | 5.83E-05 |
| SLC6A8 | MAZ | -0.40743 | 0.000109 | 0.000902 |
| SLC6A8 | BCL3 | 0.40382 | 0.000127 | 0.000988 |
| SLC6A8 | TCF12 | 0.480148 | 3.32E-06 | 6.25E-05 |
| SLC6A8 | TRIM28 | 0.487543 | 2.22E-06 | 4.69E-05 |
| SLC6A8 | PIAS1 | 0.422171 | 5.71E-05 | 0.00054 |
| SLC6A8 | MEF2A | 0.422761 | 5.56E-05 | 0.00054 |
| SLC6A8 | SMAD3 | 0.479062 | 3.52E-06 | 6.25E-05 |
| SLC6A8 | RXRA | 0.504798 | 8.37E-07 | 2.41E-05 |
| SLC6A8 | DYRK1A | 0.448412 | 1.68E-05 | 0.000201 |
| SLC6A8 | EHMT2 | -0.57092 | 1.16E-08 | 7.37E-07 |
| C6orf89 | RXRA | 0.521907 | 3.02E-07 | 1.12E-05 |

**Table S3.** Drug prediction using the CMap database.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| cmap name | mean | n | enrichment | p | specificity | percent nonnull |
| lanatoside C | -0.531 | 6 | -0.81 | 0.00014 | 0.0213 | 100 |
| zaprinast | -0.613 | 4 | -0.888 | 0.00036 | 0 | 100 |
| strophanthidin | -0.617 | 4 | -0.884 | 0.00042 | 0 | 100 |
| atractyloside | 0.5 | 5 | 0.81 | 0.0006 | 0.0111 | 100 |
| helveticoside | -0.512 | 6 | -0.739 | 0.00066 | 0.013 | 83 |
| Gly-His-Lys | -0.577 | 3 | -0.917 | 0.00096 | 0.0149 | 100 |
| 16-phenyltetranorprostaglandin E2 | -0.569 | 4 | -0.848 | 0.00097 | 0.0119 | 100 |
| benfotiamine | -0.294 | 5 | -0.739 | 0.00246 | 0 | 60 |
| mephenesin | -0.391 | 5 | -0.73 | 0.00302 | 0.0117 | 80 |
| betulin | 0.617 | 3 | 0.883 | 0.0032 | 0.0063 | 100 |
| propantheline bromide | 0.49 | 4 | 0.796 | 0.00332 | 0 | 100 |
| karakoline | -0.417 | 6 | -0.654 | 0.00471 | 0 | 83 |
| atropine oxide | -0.351 | 5 | -0.704 | 0.00495 | 0.0063 | 60 |
| laudanosine | -0.361 | 4 | -0.777 | 0.00511 | 0 | 50 |
| resveratrol | 0.389 | 9 | 0.535 | 0.0057 | 0.2941 | 66 |
| physostigmine | 0.335 | 4 | 0.76 | 0.00627 | 0 | 75 |
| kinetin | -0.397 | 4 | -0.731 | 0.01052 | 0 | 75 |
| brinzolamide | -0.33 | 4 | -0.727 | 0.01128 | 0.0216 | 75 |
| albendazole | -0.55 | 3 | -0.821 | 0.0114 | 0.0286 | 100 |
| gramine | -0.268 | 4 | -0.718 | 0.01281 | 0.0328 | 50 |
| fenbufen | 0.349 | 6 | 0.601 | 0.01283 | 0 | 66 |
| tribenoside | 0.294 | 4 | 0.718 | 0.01297 | 0.0318 | 50 |
| ifosfamide | -0.495 | 3 | -0.81 | 0.0135 | 0.0182 | 100 |
| mebendazole | -0.366 | 5 | -0.644 | 0.0142 | 0.1165 | 80 |
| ivermectin | 0.244 | 5 | 0.645 | 0.01574 | 0.1129 | 80 |
| amodiaquine | 0.305 | 4 | 0.7 | 0.01667 | 0.0125 | 50 |
| cefotaxime | 0.286 | 5 | 0.64 | 0.0172 | 0 | 80 |
| latamoxef | 0.465 | 3 | 0.795 | 0.01747 | 0.029 | 100 |
| clioquinol | 0.408 | 5 | 0.637 | 0.01788 | 0.1518 | 80 |
| thiamine | 0.441 | 3 | 0.79 | 0.01867 | 0.0403 | 100 |
| trazodone | 0.571 | 3 | 0.788 | 0.01921 | 0.0896 | 100 |
| aminohippuric acid | -0.297 | 4 | -0.688 | 0.02037 | 0.0556 | 50 |
| acebutolol | 0.287 | 5 | 0.622 | 0.02251 | 0.0278 | 60 |
| lincomycin | 0.458 | 3 | 0.776 | 0.02269 | 0.0079 | 100 |
| dantrolene | 0.207 | 6 | 0.569 | 0.0237 | 0.0513 | 50 |
| dyclonine | -0.312 | 4 | -0.668 | 0.02727 | 0.0221 | 50 |
| mefexamide | 0.258 | 4 | 0.666 | 0.02787 | 0.0245 | 50 |
| pralidoxime | 0.397 | 4 | 0.657 | 0.03201 | 0.0638 | 75 |
| esculin | 0.297 | 4 | 0.657 | 0.03203 | 0 | 75 |
| nisoxetine | -0.286 | 4 | -0.654 | 0.03322 | 0.0366 | 50 |
| cotinine | 0.292 | 6 | 0.546 | 0.03369 | 0.0455 | 50 |
| alfadolone | 0.29 | 3 | 0.74 | 0.03413 | 0.0235 | 66 |
| Y-27632 | -0.47 | 2 | -0.869 | 0.03428 | 0.0492 | 100 |
| minaprine | 0.361 | 5 | 0.59 | 0.03565 | 0.02 | 80 |
| isocarboxazid | 0.267 | 5 | 0.587 | 0.03687 | 0.0592 | 60 |
| abamectin | 0.403 | 4 | 0.646 | 0.0374 | 0.04 | 75 |
| betahistine | -0.408 | 4 | -0.646 | 0.03756 | 0.08 | 75 |
| etifenin | -0.475 | 4 | -0.645 | 0.03804 | 0.0345 | 75 |
| mesoridazine | -0.273 | 4 | -0.641 | 0.03965 | 0.0546 | 50 |
| hydroflumethiazide | -0.173 | 5 | -0.574 | 0.04205 | 0.0567 | 60 |
| gibberellic acid | -0.422 | 4 | -0.635 | 0.04297 | 0.0642 | 75 |
| atropine methonitrate | -0.338 | 3 | -0.723 | 0.04383 | 0.0383 | 66 |
| amprolium | 0.313 | 5 | 0.572 | 0.0458 | 0.0385 | 80 |
| thioguanosine | 0.464 | 4 | 0.63 | 0.04683 | 0.2588 | 75 |
| ellipticine | 0.447 | 4 | 0.628 | 0.04798 | 0.3039 | 75 |