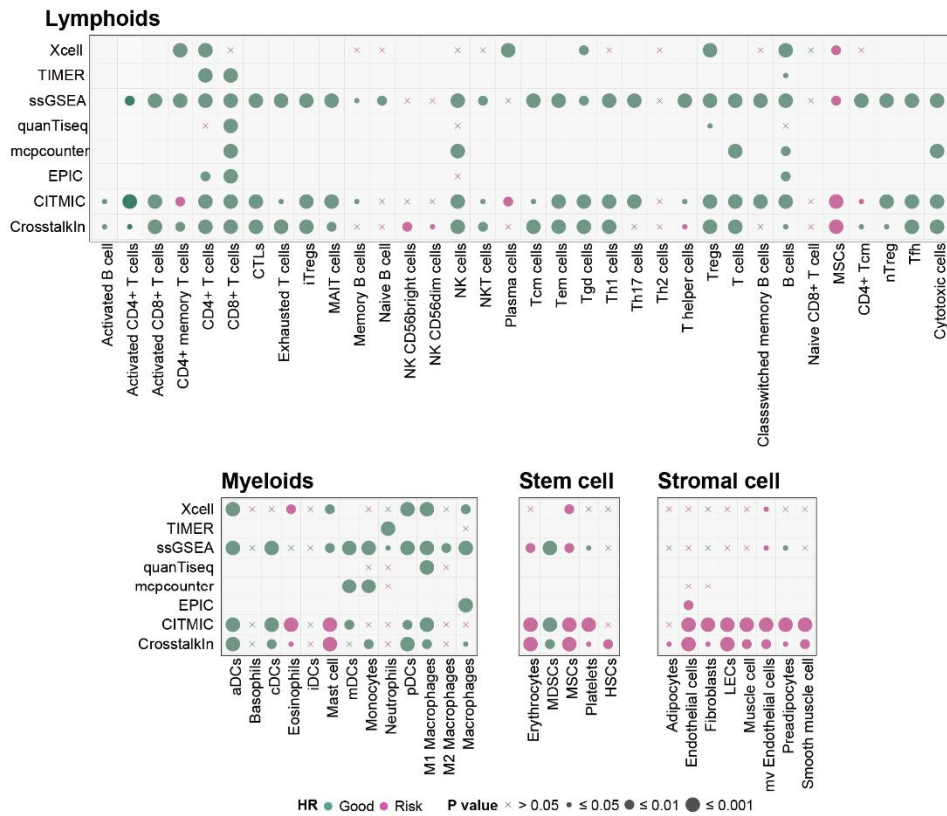
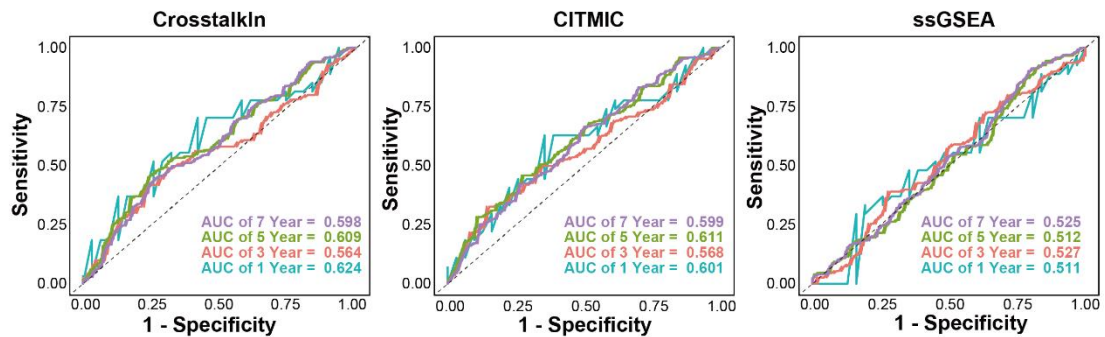


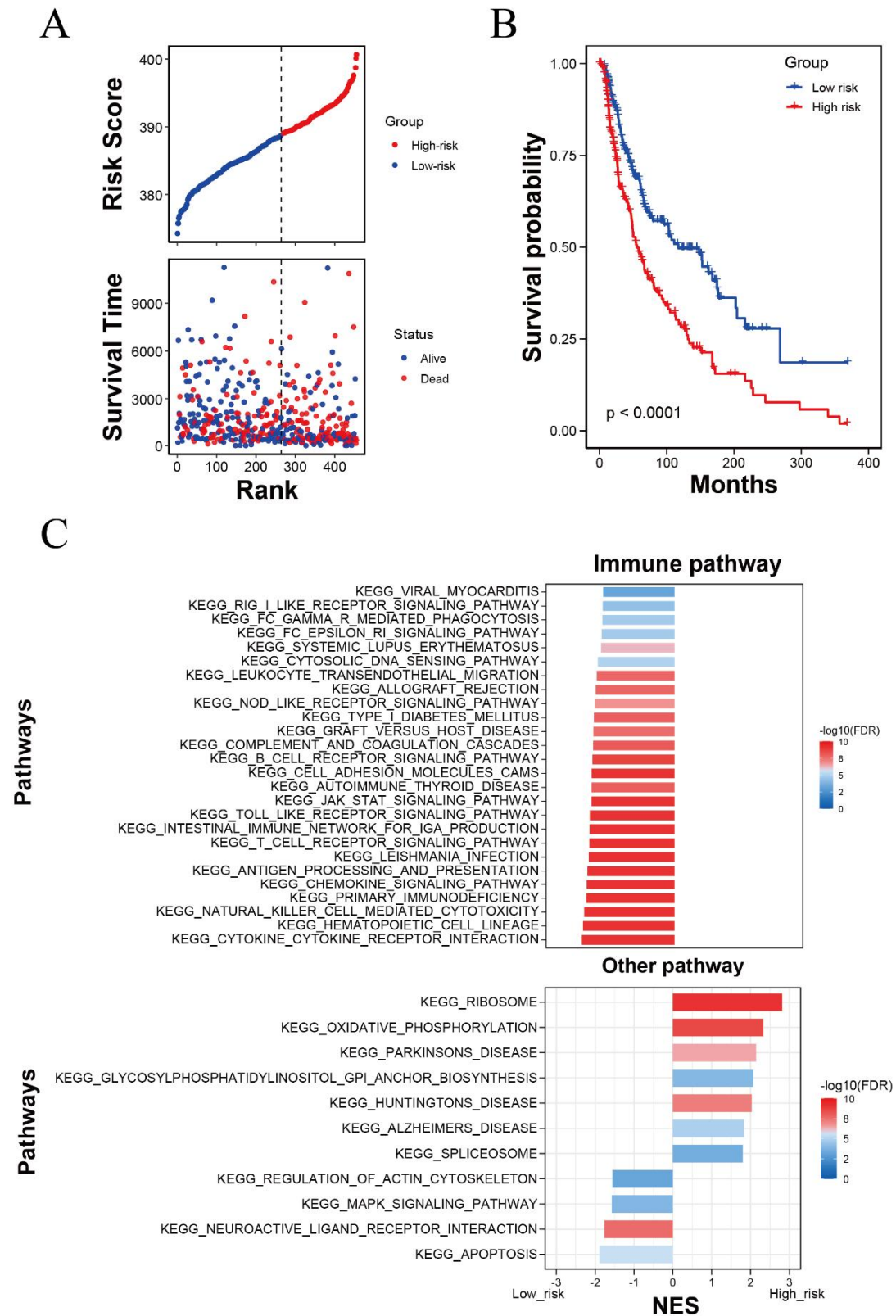
A



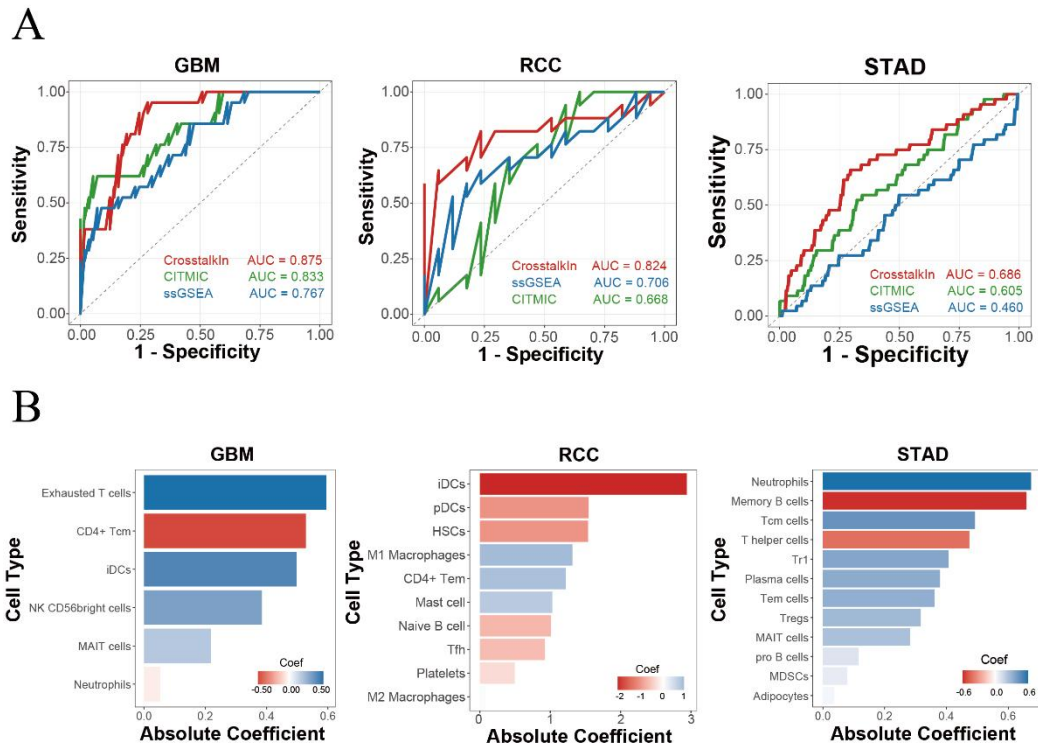
B



Supplementary Figure S1 | Survival prediction in melanoma. A The survival-associated cell types across CrosstalkIn and other deconvolution methods. B-D Time-dependent ROC curves of the survival prediction.



Supplementary Figure S2 | Survival risk analysis in melanoma. A Kaplan–Meier curves of high- and low-risk groups. **B** Stratification of patients and corresponding survival outcomes. **C** Pathway enrichment analysis by GSEA.



Supplementary Figure S3 | Immunotherapy Response Analysis in GBM, RCC, and STAD. A ROC curves of immunotherapy response prediction. **B** Regression coefficients of key cell types.

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	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
effector CD4+ T cells	0.1087	0.1037	0.1013	0.1106	0.1190	0.1190	0.1376	0.1449	0.1572	0.1576	0.1656
effector CD8+ T cells	0.5084	0.5101	0.5102	0.5219	0.5018	0.4533	0.4171	0.3508	0.2800	0.1918	0.1220
B-cells	0.5089	0.5201	0.5255	0.5290	0.5456	0.5507	0.5642	0.5712	0.5475	0.5030	0.3713
CD4+ T-cells	0.5270	0.5209	0.5182	0.5091	0.5014	0.4853	0.4677	0.4546	0.4290	0.3796	0.3037
CD4+ Tcm	0.3631	0.3471	0.3386	0.3326	0.3305	0.3181	0.3070	0.2846	0.2585	0.2218	0.1871
CD4+ Tem	0.0178	0.0223	0.0460	0.0515	0.0562	0.3181	0.0729	0.0862	0.1095	0.1359	0.1540
CD8+ T-cells	0.5677	0.5868	0.6103	0.6258	0.6382	0.6507	0.6747	0.6952	0.7220	0.7447	0.7717
CD8+ Tcm	0.1994	0.2079	0.2157	0.2130	0.2097	0.2052	0.1980	0.1920	0.1904	0.1827	0.1806
CD8+ Tem	0.5311	0.5416	0.5361	0.5561	0.5558	0.5600	0.5574	0.5581	0.5527	0.5459	0.5532
Memory B-cells	0.2510	0.2665	0.2749	0.2968	0.3020	0.2967	0.2890	0.2747	0.2618	0.2127	0.1897
Monocytes	0.4277	0.4135	0.3899	0.3701	0.3411	0.2995	0.2637	0.2277	0.1697	0.1483	0.1300
naive B-cells	0.5019	0.5046	0.5019	0.5117	0.5230	0.5393	0.5474	0.5468	0.5439	0.5329	0.4679
CD4+ naive T-cells	0.4410	0.4308	0.4240	0.4192	0.4064	0.3913	0.3805	0.3595	0.3084	0.2753	0.1919
CD8+ naive T-cells	0.5216	0.5352	0.5357	0.5423	0.5409	0.5418	0.5319	0.5145	0.4939	0.4283	0.2646
NK cells	0.1333	0.1156	0.0987	0.0813	0.0656	0.0439	0.0440	0.0361	0.0413	0.0215	0.0560
Plasma cells	0.1522	0.1081	0.0802	0.0113	-0.0268	-0.0427	-0.0464	-0.0689	-0.0924	-0.1040	-0.1047
pro B-cells	-0.0182	-0.0112	0.0025	0.0093	0.0121	0.0394	0.0574	0.0769	0.0755	0.0892	0.0914
T cells	0.7159	0.7178	0.7149	0.7174	0.7181	0.7145	0.7017	0.6907	0.6856	0.6708	0.6599
Tgd cells	0.0743	0.1073	0.1177	0.1155	0.1392	0.1442	0.1655	0.1863	0.1930	0.2349	0.2434
Tregs	-0.0163	-0.0091	-0.0074	-0.0102	-0.0062	0.0090	0.0162	0.0199	0.0274	0.0435	0.0133
average	0.3258	0.3270	0.3267	0.3257	0.3237	0.3319	0.3174	0.3101	0.2977	0.2808	0.2506

Supplementary Figure S4 | Analysis of the impact of varied fusion weights β via Spearman correlations.