

Downregulation of ST6GAL2 correlates to liver inflammation and predicts adverse prognosis in hepatocellular carcinoma

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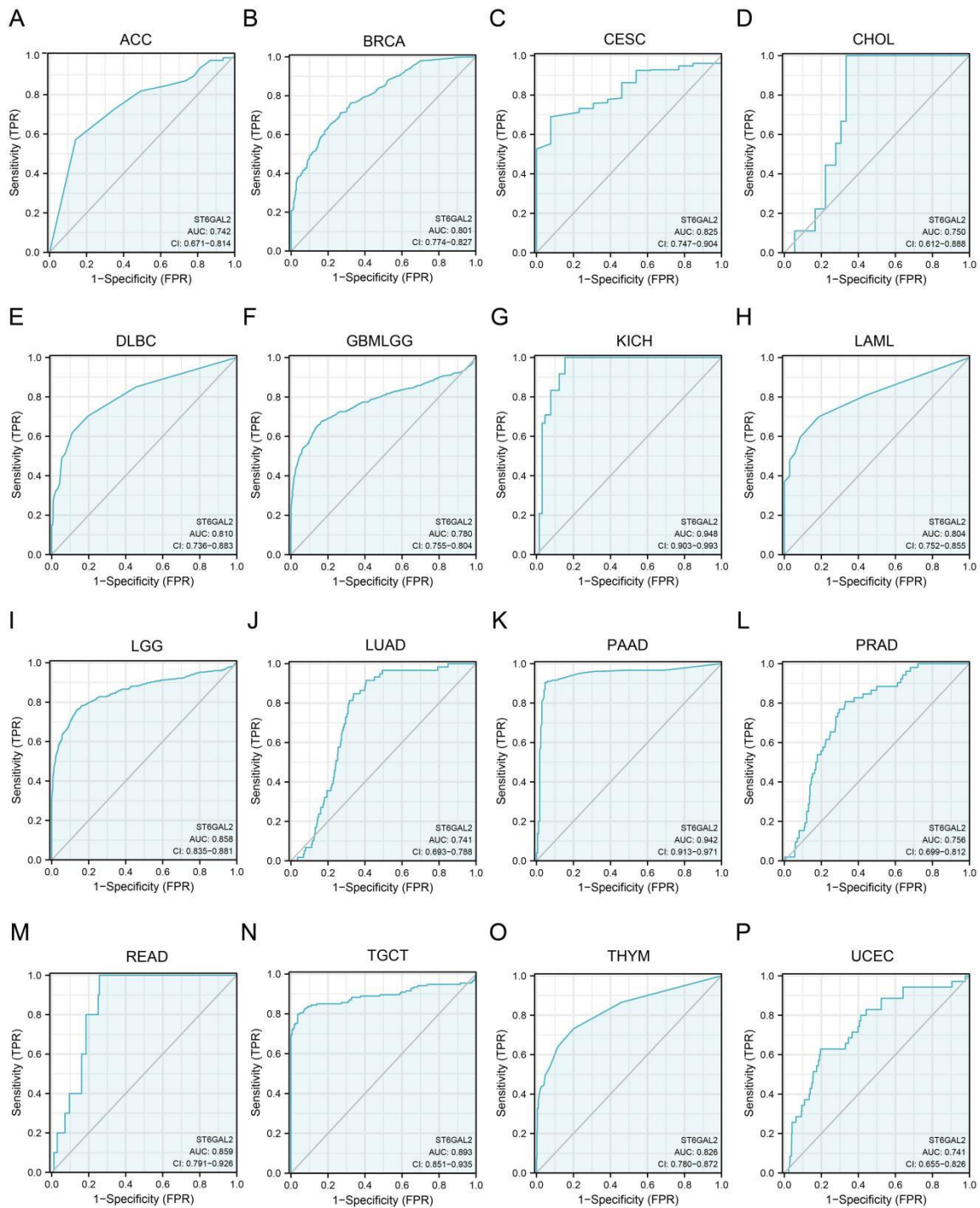


Figure S1. (A-P) The receiver operating characteristic curve analysis of STG6GAL2 expression in adrenocortical carcinoma (**ACC, A**), breast invasive carcinoma (**BRCA, B**), cervical squamous cell carcinoma and endocervical adenocarcinoma (**CESC, C**), cholangiocarcinoma (**CESC, D**), lymphoid neoplasm diffuse large B-cell lymphoma

(DLBC, E), lower grade glioma and glioblastoma (GBMLGG, F), kidney chromophobe (KICH, G), acute myeloid leukemia (LAML, H), lower grade glioma (LGG, I), lung adenocarcinoma (LUAD, J), pancreatic adenocarcinoma (PAAD, K), prostate adenocarcinoma (PRAD, L), rectum adenocarcinoma (READ, M), testicular germ cell tumors (TCCT, N), thymoma (THYM, O), and uterine corpus endometrial carcinoma (UCEC, P).

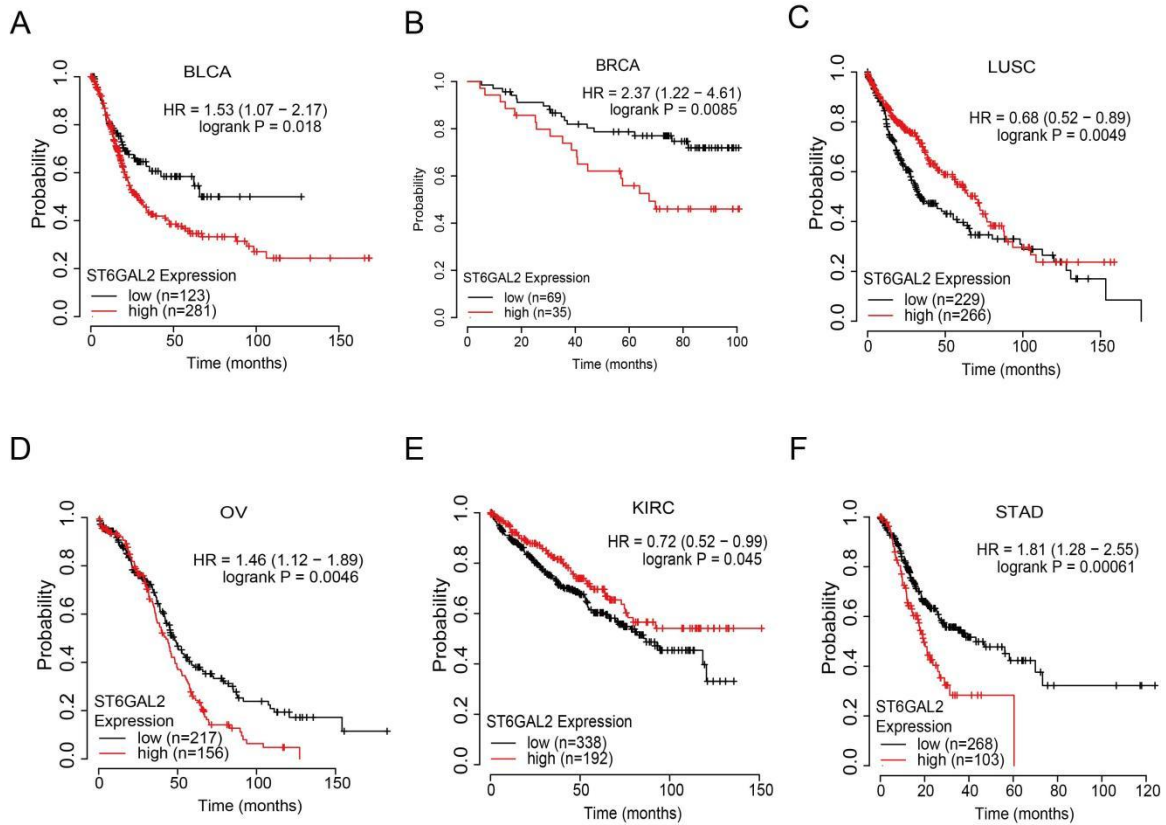
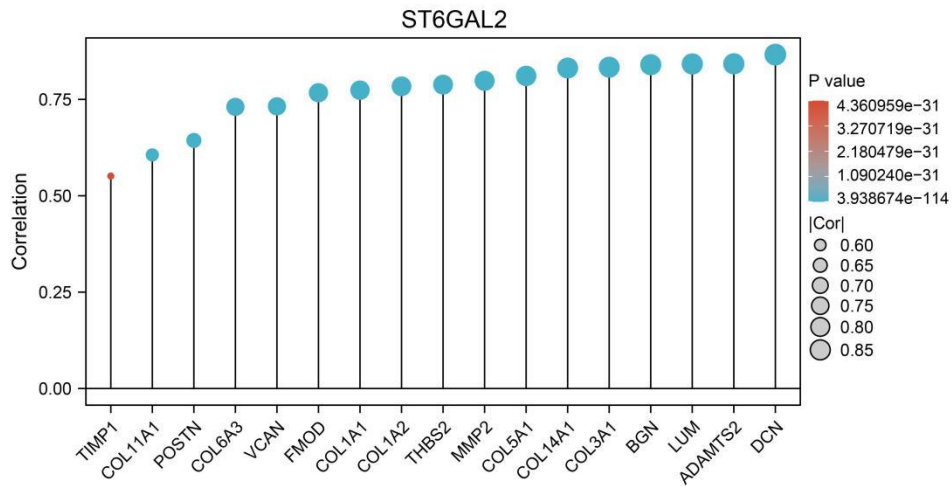


Figure S2. (A-F) The overall survival analysis of ST6GAL2 expression in bladder urothelial carcinoma (BLCA, A), breast invasive carcinoma (BRCA, B), lung squamous cell carcinoma (LUSC, C), ovarian serous cystadenocarcinoma (OV, D), kidney renal clear cell carcinoma (KIRC, E), and stomach adenocarcinoma (STAD, F).

A



B

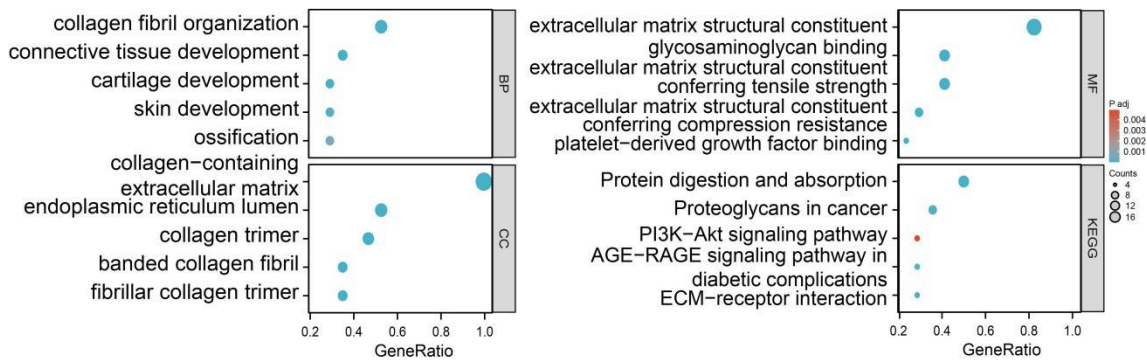


Figure S3. Further studies targeting hub genes. **(A)** Association between ST6GAL2 and all 17 hub genes; **(B)** The enrichment analysis results of 17 hub genes.

Table S1| Correlation analysis between ST6GAL2 and gene markers of immune cells in TIMER

Description	Gene markers	HCC			
		None		Purity	
		Cor	P	Cor	P
B cell	CD19	0.254	***	0.146	**
	CD79A	0.354	***	0.202	***
T cell(general)	CD3D	0.214	***	0.061	0.2582
	CD3E	0.356	***	0.188	***
	CD2	0.329	***	0.170	**
CD8+ T cell	CD8A	0.313	***	0.181	***
	CD8B	0.200	***	0.059	0.2779
Treg	FOXP3	0.223	***	0.149	***
	CCR8	0.338	***	0.255	***
	TGFB1	0.548	***	0.457	***
TFH	CD4	0.388	***	0.282	***
	CXCL13	0.132	*	0.031	0.5722
	MME	-0.007	0.8998	-0.009	0.8741
	BCL6	0.020	0.7066	0.027	0.6148
Dendritic cell	HLA-DPB1	0.381	***	0.230	***
	HLA-DRA	0.354	***	0.199	***
	HLA-DPA1	0.370	***	0.224	***
	CD1C	0.464	***	0.348	***
	NRP1	0.395	***	0.368	***
	ITGAX	0.354	***	0.211	***
	CD163	0.306	***	0.143	**
Macrophages	CD68	0.209	***	0.036	0.5015
	MRC1	0.246	***	0.145	**
	MSR1	0.400	***	0.306	***
	MARCO	0.351	***	0.217	***
	TPSB2	0.335	***	0.246	***
	TPSAB1	0.340	***	0.251	***
Mast cells	CPA3	0.386	***	0.326	***
	MS4A2	0.364	***	0.281	***
	HDC	0.125	*	0.026	0.6319
Neutrophils	CEACAM8	0.052	0.3155	0.013	0.8151
	ITGAM	0.333	***	0.231	***
	CCR7	0.411	***	0.250	***
	KIR2DL1	0.028	0.5940	-0.006	0.9065
	KIR2DL3	0.123	*	0.048	0.3709
Natural killer cell	KIR2DL4	0.043	0.4060	-0.036	0.5035
	KIR3DL1	0.107	*	0.061	0.2594
	KIR3DL2	0.164	**	0.091	0.0907
	KIR3DL3	-0.009	0.8588	-0.026	0.6243
	KIR2DS4	0.036	0.4943	0.038	0.4861

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.

Table S2| Correlation analysis between ST6GAL2 and gene markers of different types of T cells in TIMER.

Description	Gene markers	HCC			
		None		Purity	
		Cor	P	Cor	P
Th1	TBX21	0.224	***	0.064	0.2367
	STAT4	0.343	***	0.272	***
	STAT1	0.275	***	0.219	***
	TNF	0.287	***	0.148	**
	IFNG	0.106	**	-0.001	0.9876
Th1-like	HAVCR2	0.371	***	0.216	***
	CXCR3	0.288	***	0.141	**
	BHLHE40	0.304	***	0.311	***
	CD4	0.388	***	0.282	***
Th2	STAT6	0.223	***	0.240	***
	STAT5A	0.295	***	0.234	***
Resting Treg	IL2RA	0.268	***	0.096	0.0743
Effector Treg T-cell	TNFRSF9	0.199	***	0.136	*
	CX3CR1	0.395	***	0.346	***
Effector T-cell	FGFBP2	-0.010	0.8481	-0.043	0.4208
	FCGR3A	0.282	***	0.163	**
	CCR7	0.411	***	0.250	***
Naïve T-cell	SELL	0.331	***	0.221	***
	DUSP4	0.473	***	0.376	***
	GZMK	0.326	***	0.160	**
Effector memory T-cell	GZMA	0.244	***	0.093	0.0860
	CD69	0.447	***	0.317	***
	CXCR6	0.323	***	0.159	**
Resident memory T-cell	MYADM	0.495	***	0.469	***
	IL7R	0.509	***	0.399	***
memory T-cell	LAG3	0.105	*	0.007	0.8992
	CXCL13	0.132	*	0.031	0.5722
Exhausted T-cell	LAYN	0.408	***	0.330	***

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.