SUPPLEMENTARY TABLES

Supplementary Table 1. *C12orf75* expression in cancerous versus normal tissue in ONCOMINE.

Cancer Site	Cancer Type	*P* Value	Sample Size	Fold Change	Up/Down Regulated Gene Rank	Reference (PMID)
Cervical	Cervical Cancer	1.22E-09	20	5.543	368 (2%)	17510386
Colorectal	Colon Carcinoma	2.36E-08	5	2.962	479 (3%)	20957034
	Colon Adenoma	8.79E-06	5	1.8	861 (5%)	20957034
Esophageal	Esophageal Squamous Cell Carcinoma	9.13E-14	51	2.423	596 (4%)	21385931
Head and Neck	Tongue Carcinoma	2.68E-07	15	4.791	199 (2%)	17510386
	Oropharyngeal Carcinoma	2.96E-05	6	5.965	361 (2%)	17510386
	Oral Cavity Carcinoma	1.83E-04	4	6.719	411 (3%)	17510386
	Floor of the Mouth Carcinoma	5.45E-04	5	7.062	1698 (9%)	17510386
	Oral Cavity Squamous Cell Carcinoma	6.59E-13	57	2.582	428 (3%)	21853135
	Thyroid Gland Papillary Carcinoma	2.69E-04	9	1.74	532 (3%)	16365291
Kidney	Chromophobe Renal Cell Carcinoma	7.02E-06	4	9.054	28 (1%)	19445733
	Renal Oncocytoma	2.66E-05	4	9.057	155 (1%)	19445733
	Papillary Renal Cell Carcinoma	7.24E-05	19	3.332	484 (3%)	19445733
Leukemia	T-Cell Acute Lymphoblastic Leukemia	2.98E-08	10	3.713	227 (3%)	17410184
	B-Cell Acute Lymphoblastic Leukemia	2.00E-12	86	2.787	283 (3%)	17410184
	T-Cell Acute Lymphoblastic Leukemia	4.23E-30	174	2.379	718 (4%)	20406941
	Pro-B Acute Lymphoblastic Leukemia	5.46E-19	70	2.343	1075 (6%)	20406941
	Chronic Myelogenous Leukemia	2.90E-13	76	−1.654	337 (2%)	20406941
Liver	Hepatocellular Carcinoma	4.88E-07	35	3.019	367 (2%)	17393520
Lymphoma	Germinal Center B-Cell-Like Diffuse Large B-Cell Lymphoma	8.54E-04	16	−1.786	251 (9%)	10676951
Myeloma	Monoclonal Gammopathy of Undetermined Significance	4.87E-07	44	−2.004	265 (2%)	17023574
Melanoma	Skin Squamous Cell Carcinoma	2.20E-04	11	3.278	917 (5%)	18442402
Seminoma	Mixed Germ Cell Tumor	1.01E-07	41	−2.284	1681 (10%)	16424014
Ovarian	Ovarian Clear Cell Adenocarcinoma	7.22E-04	7	4.867	285 (2%)	15161682
Prostate	Prostate Carcinoma	1.28E-15	62	−2.285	75 (1%)	14711987
	Prostate Carcinoma	6.78E-04	13	−3.022	547 (3%)	19737960

Supplementary Table 2. Prognostic analysis of *C12orf75* expression for overall survival in the clinicopathologic features of TCGA-BLCA.

Variable	Group A vs. Group B				Univariate Cox		Multivariate Cox	
	Group A	Total No. Patients (%)	Group B	Total No. Patients (%)	HR (95% CI)	P	HR (95% CI)	p
C12orf75	High Group	203 (50%)	Low Group	203 (50%)	1.39 (1.04–1.87)	0.027	2.28 (1.13–4.58)	0.021
Age	≥60	356 (78%)	<60	98 (22%)	1.96 (1.28–3.02)	0.002	1.59 (0.54–4.72)	0.403
Extracapsular Extension Status	Focal	38 (68%)	Extensive	18 (32%)	1.15 (0.5–2.63)	0.749		
Clinical T	T 3–4	63 (32%)	T 1-2	132 (68%)	1.44 (0.9–2.31)	0.127		
Diagnosis Subtype	Papillary	141 (31%)	On-Papillary	307 (69%)	0.69 (0.49–0.98)	0.035	1.46 (0.66–3.22)	0.349
Disease Extracapsular Extension	YES	77 (44%)	NO	97 (56%)	1.29 (0.83–2.01)	0.255		
Gleason Score	>7	32 (35%)	≤6	60 (65%)	0.89 (0.46–1.74)	0.74		
Lymphovascular Invasion	YES	170 (55%)	NO	139 (45%)	2.33 (1.6–3.39)	<0.001	2.3 (0.98–5.39)	0.056
Histologic Grade	High	429 (95%)	Low	21 (5%)	2.95 (0.73–11.93)	0.111		
Lymphonodus Positive	Positive	134 (40%)	Negative	198 (60%)	2.02 (1.46–2.81)	<0.001	1.39 (0.62–3.12)	0.42
Pathologic M	M1	11 (5%)	MO	220 (95%)	1.08 (0.73–1.6)	0.7		
Pathologic T	T3-4	288 (69%)	T1-2	132 (31%)	3.22 (1.54–6.73)	0.001	1.37 (0.38–4.93)	0.632
Gender	Male	330 (73%)	Female	124 (27%)	1.28 (0.68–2.43)	0.44		
Race	Asian	44 (11%)	White	366 (89%)	0.86 (0.62–1.19)	0.353		
Tumor Stage	Stage III-IV	311 (69%)	Stage I-II	141 (31%)	0.62 (0.31–1.21)	0.156		
BMI	≥25	223 (58%)	<25	161 (42%)	2.26 (1.56–3.27)	<0.001	0.95 (0.14–6.47)	0.961
Number Pack Years Smoked	>30	118 (47%)	≤30	132 (53%)	1.03 (0.74–1.43)	0.87		

P value for two-sided Wald test; Abbreviations: HR: hazard ratio; CI: confidence interval; BMI: Body Mass Index.

Supplementary Table 3. Prognostic analysis of *C12orf75* expression for overall survival in the clinicopathologic features of TCGA- LIHC.

Variable	Group A vs. Group B				Univariate Cox		Multivariate Cox	
	Group A	Total No. Patients (%)	Group B	Total No. Patients (%)	HR (95% CI)	*p*	HR (95% CI)	*p*
C12orf75	High Group	184 (50%)	Low Group	184 (50%)	1.83 (1.29–2.6)	0.001	1.87 (1.19–2.96)	0.007
Adjacent Tissue Inflammation Extent	YES	146 (47%)	NO	162 (53%)	1.15 (0.71–1.87)	0.564		
Age	≥60	270 (58%)	<60	198 (42%)	1.19 (0.84–1.69)	0.327		
Albumin	<3.5g/dl	87 (23%)	≥3.5g/dl	291 (77%)	1.12 (0.69–1.83)	0.651		
Child-Pugh Classification	B+C(1)	33 (11%)	A	271 (89%)	1.64 (0.81–3.33)	0.164		
Creatinine	>1.2mg/dl	57 (15%)	≤1.2mg/dl	327 (85%)	0.89 (0.5–1.6)	0.699		
Fetoprotein	≥200ng/ml	96 (27%)	<200ng/ml	259 (73%)	1.1 (0.69–1.75)	0.691		
Fibrosis Ishak Score	1~6	167 (58%)	0	119 (42%)	0.74 (0.45–1.22)	0.238		
Neoplasm Histologic Grade	G3-4	166 (36%)	G1-2	295 (64%)	1.11 (0.78–1.59)	0.557		
Pathologic M	M1	6 (2%)	M0	337 (98%)	3.96 (1.24–12.58)	0.012	3.54 (1.03–12.14)	0.044
Pathologic N	N1	6 (2%)	N0	312 (98%)	2 (0.49–8.17)	0.323		
Pathologic T	T3-4	123 (26%)	T1-2	343 (74%)	2.56 (1.8–3.64)	<0.001	1.68 (0.23–12.39)	0.611
Platelet	<150	89 (23%)	≥150	302 (77%)	0.94 (0.57–1.53)	0.797		
Family Cancer History	YES	162 (40%)	NO	248 (60%)	1.19 (0.82–1.72)	0.352		
Vascular Tumor	YES	134 (33%)	NO	270 (67%)	1.32 (0.87–2)	0.188		
Gender	Male	309 (66%)	Female	160 (34%)	0.8 (0.56–1.14)	0.219		
Race	Asian	171 (40%)	White	257 (60%)	0.76 (0.52–1.1)	0.143		
Tumor Stage	Stage III-IV	116 (27%)	Stage I-II	319 (73%)	2.46 (1.7–3.57)	<0.001	1.05 (0.14–7.77)	0.958
BMI	≥25	208 (50%)	<25	209 (50%)	0.81 (0.56–1.18)	0.28		
Weight of Samples	>160g	229 (49%)	≤160g	240 (51%)	3.21 (2.23–4.62)	<0.001	3.59 (2.19–5.87)	<0.001

P value for two-sided Wald test; Abbreviations: HR: hazard ratio; CI: confidence interval; BMI: Body Mass Index.

Supplementary Table 4. Prognostic analysis of *C12orf75* expression for overall survival in the clinicopathologic features of TCGA- UVM.

Variable	Group A vs. Group B				Univariate Cox		Multivariate Cox	
	Group A	Total No. Patients (%)	Group B	Total No. Patients (%)	HR (95% CI)	p	HR (95% CI)	p
C12orf75	High Group	40 (50%)	Low Group	40 (50%)	7.08 (2.6–19.25)	<0.001	5.88 (1.94–17.8)	0.002
Age	≥60	44 (55%)	<60	36 (45%)	1.84 (0.79–4.27)	0.151		
Clinical T	T4	38 (49%)	T2-3	40 (51%)	2.42 (0.96–6.06)	0.052		
Clinical Stage	Stage III-IV	44 (55%)	Stage II	36 (45%)	1.72 (0.7–4.19)	0.229		
Extrascleral Extension	YES	7 (9%)	NO	68 (91%)	4.64 (1.5–14.37)	0.003	2.02 (0.62–6.57)	0.242
Pathologic T	T4	34 (42%)	T2-3	46 (58%)	1.74 (0.76–3.99)	0.187		
Radiation Therapy	YES	8 (12%)	NO	58 (88%)	2.71 (0.68–10.87)	0.143		
Tumor Basal Diameter	≥17	40 (51%)	<17	39 (49%)	2.49 (1–6.18)	0.043	2.97 (0.75–11.75)	0.121
Tumor Shape	Mushroom	13 (27%)	Dome	36 (73%)	0.58 (0.16–2.06)	0.392		
Gender	Male	45 (56%)	Female	35 (44%)	1.54 (0.65–3.65)	0.321		
Tumor Stage	Stage III-IV	40 (51%)	Stage I-II	39 (49%)	1.5 (0.63–3.58)	0.356		
BMI	≥25	36 (68%)	<25	17 (32%)	1.17 (0.37–3.68)	0.789		
Weight of Samples	>40	37 (48%)	≤40	40 (52%)	1.11 (0.47–2.61)	0.812		

P value for two-sided Wald test; Abbreviations: HR: hazard ratio; CI: confidence interval; BMI: Body Mass Index.

Supplementary Table 5. Prognostic analysis of *C12orf75* expression for overall survival in the clinicopathologic features of TCGA- KIRP.

Variable	Group A vs. Group B				Univariate Cox		Multivariate Cox	
	Group A	Total No. Patients (%)	Group B	Total No. Patients (%)	HR (95% CI)	*p*	HR (95% CI)	*p*
C12orf75	High Group	143 (50%)	Low Group	143 (50%)	0.52 (0.28–0.97)	0.036	0.3 (0.11–0.82)	0.019
Age	≥60	224 (59%)	<60	154 (41%)	1.04 (0.56–1.94)	0.888		
Clinical T	T3-4	57 (21%)	T1-2	210 (79%)	4.66 (2.28–9.53)	<0.001	1.53 (0.44–5.4)	0.507
Hemoglobin	Low	128 (48%)	Normal	141 (52%)	4.4 (1.88–10.26)	<0.001	2.59 (1.04–6.46)	0.041
Lactate Dehydrogenase	Elevated	11 (23%)	Normal	36 (77%)	1.88 (0.36–9.77)	0.443		
Laterality	Right	168 (44%)	Left	210 (56%)	0.74 (0.39–1.38)	0.342		
Pathologic T	T3-4	91 (24%)	T1-2	286 (76%)	5.07 (2.76–9.3)	<0.001	2.73 (0.77–9.65)	0.118
Serum Calcium	Low + Elevated	68 (29%)	Normal	169 (71%)	1.66 (0.75–3.66)	0.205		
White Cell Count	Low + Elevated	72 (27%)	Normal	196 (73%)	1.44 (0.67–3.09)	0.353		
Gender	Male	282 (74%)	Female	99 (26%)	0.63 (0.33–1.21)	0.164		
Race	Black	75 (21%)	White	277 (79%)	0.92 (0.41–2.09)	0.853		
BMI	≥25	208 (76%)	<25	67 (24%)	0.71 (0.32–1.55)	0.39		
Pack Years Smoked	≥24	43 (49%)	<24	45 (51%)	3.38 (0.71–16.06)	0.104		
Initial Weight	>170	101 (49%)	≤170	107 (51%)	0.81 (0.36–1.83)	0.615		
Longest Dimension	>1.7	36 (21%)	≤1.7	137 (79%)	0.79 (0.26–2.37)	0.672		

P value for two-sided Wald test; Abbreviations: HR: hazard ratio; CI: confidence interval; BMI: Body Mass Index.

Supplementary Table 6. Analysis of correlations expression between *C12orf75* and Gene Markers of Immune Cells in MESO, UCS, and UVM by TIMER.

Cell type	Gene marker	MESO (*n* = 87)		UCS (*n* = 57)		UVM (*n* = 80)	
		Cor	*p*	Cor	*p*	Cor	*p*
B cell	CD19	0.136	0.353	0.102	0.354	0.233	*
	MS4A1	0.078	0.591	0.183	0.591	0.281	**
	CD38	0.140	0.353	0.339	0.354	0.419	***
CD8+ T Cell	CD8A	0.278	0.075	0.215	0.076	0.565	***
	CD8B	0.232	0.096	0.149	0.097	0.582	***
Tfh	CXCR5	0.104	0.473	−0.092	0.474	0.382	***
	ICOS	0.092	0.473	0.224	0.474	0.561	***
	BCL6	0.344	*	−0.137	*	0.252	*
Th1	IL12RB2	0.178	0.258	0.092	0.259	−0.485	***
	IL27RA	0.137	0.415	0.354	0.415	0.573	***
	TBX21	0.039	0.669	0.177	0.67	0.434	***
Th2	CCR3	0.111	0.415	0.102	0.415	0.375	***
	STAT6	−0.165	0.272	0.355	0.273	0.457	***
	GATA3	0.137	0.342	0.130	0.343	0.531	***
Th9	TGFBR2	0.265	0.080	0.185	0.08	0.243	*
	IRF4	0.071	0.591	−0.153	0.591	−0.003	0.655
	TNF	0.036	0.598	0.161	0.598	0.531	***
Th17	IL21R	0.235	0.090	−0.055	0.091	0.524	***
	IL23R	0.009	0.821	0.057	0.821	0.304	**
	STAT3	0.086	0.591	−0.041	0.591	0.599	***
Th22	CCR10	0.086	0.706	−0.295	0.706	0.311	**
	AHR	0.390	*	0.279	*	0.513	***
Treg	FOXP3	0.148	0.393	0.234	0.393	0.398	***
	CCR8	0.212	0.258	0.264	0.259	0.343	***
	IL2RA	0.107	0.591	0.166	0.591	0.408	***
T cell exhaustion	PDCD1	0.032	0.677	0.051	0.677	0.618	***
	CTLA4	0.061	0.591	0.155	0.591	0.482	***
Macrophage	CD68	0.083	0.591	0.173	0.591	0.244	*
	ITGAM	0.238	0.090	0.035	0.091	0.440	***
M1	NOS2	0.060	0.805	−0.119	0.806	0.258	**
	ROS1	0.288	0.050	−0.041	0.05	−0.178	0.187
M2	ARG1	−0.060	0.805	0.064	0.806	0.049	0.438
	MRC1	0.036	0.926	0.163	0.926	0.362	***
TAM	HLA-G	−0.134	0.591	0.425	0.591	0.404	***
	CD80	0.010	0.985	0.055	0.986	0.284	**
	CD86	0.155	0.346	0.121	0.347	0.586	***
Monocyte	CD14	0.134	0.353	0.170	0.354	0.552	***
	FCGR3A	0.168	0.298	0.066	0.298	0.532	***
NK	XCL1	0.171	0.258	0.037	0.259	0.391	***
	KIR3DL1	0.123	0.353	0.262	0.354	0.258	**
	CD7	0.146	0.320	0.139	0.321	0.599	***
Neutrophil	FUT4	0.488	***	−0.029	***	0.303	**
	MPO	−0.059	0.926	−0.129	0.926	0.016	0.991
DC	CD1C	0.035	0.926	0.047	0.926	0.214	*
	THBD	0.203	0.180	−0.145	0.181	0.390	***

Cor value of Spearman's correlation. *p* values were corrected using the Benjamini-Hochberg method. $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

Supplementary Table 7. DNA Methylation Analysis of *C12orf75* in pan-cancer by DNMIVD.

		DNMIVD			
Disease	**Gene Symbol**	**Pearson *r***	**Pearson *p* value**	**Spearman *r***	**Spearman *p* value**
BLCA	C12orf75	−0.181	0.000	−0.162	0.001
BRCA	C12orf75	−0.153	0.000	0.004	0.903
CESC	C12orf75	−0.035	0.535	0.011	0.847
CHOL	C12orf75	−0.072	0.640	−0.158	0.299
COAD	C12orf75	0.002	0.975	−0.032	0.566
ESCA	C12orf75	−0.207	0.007	−0.078	0.311
GBM	C12orf75	0.040	0.753	−0.013	0.917
HNSC	C12orf75	−0.006	0.883	0.071	0.104
KIRC	C12orf75	−0.049	0.363	−0.048	0.377
KIRP	C12orf75	0.132	0.023	0.151	0.009
LIHC	C12orf75	−0.119	0.016	−0.153	0.002
LUAD	C12orf75	−0.259	9.8e-9	−0.229	4.548e-7
LUSC	C12orf75	−0.151	0.003	−0.131	0.011
PAAD	C12orf75	−0.070	0.346	−0.119	0.111
PCPG	C12orf75	−0.040	0.591	−0.006	0.930
PRAD	C12orf75	0.038	0.380	0.043	0.319
READ	C12orf75	−0.125	0.212	−0.169	0.092
SARC	C12orf75	0.102	0.098	0.107	0.084
SKCM	C12orf75	−0.051	0.270	0.020	0.672
STAD	C12orf75	−0.183	0.001	−0.078	0.156
THCA	C12orf75	−0.118	0.005	−0.103	0.015
THYM	C12orf75	0.122	0.181	0.084	0.362