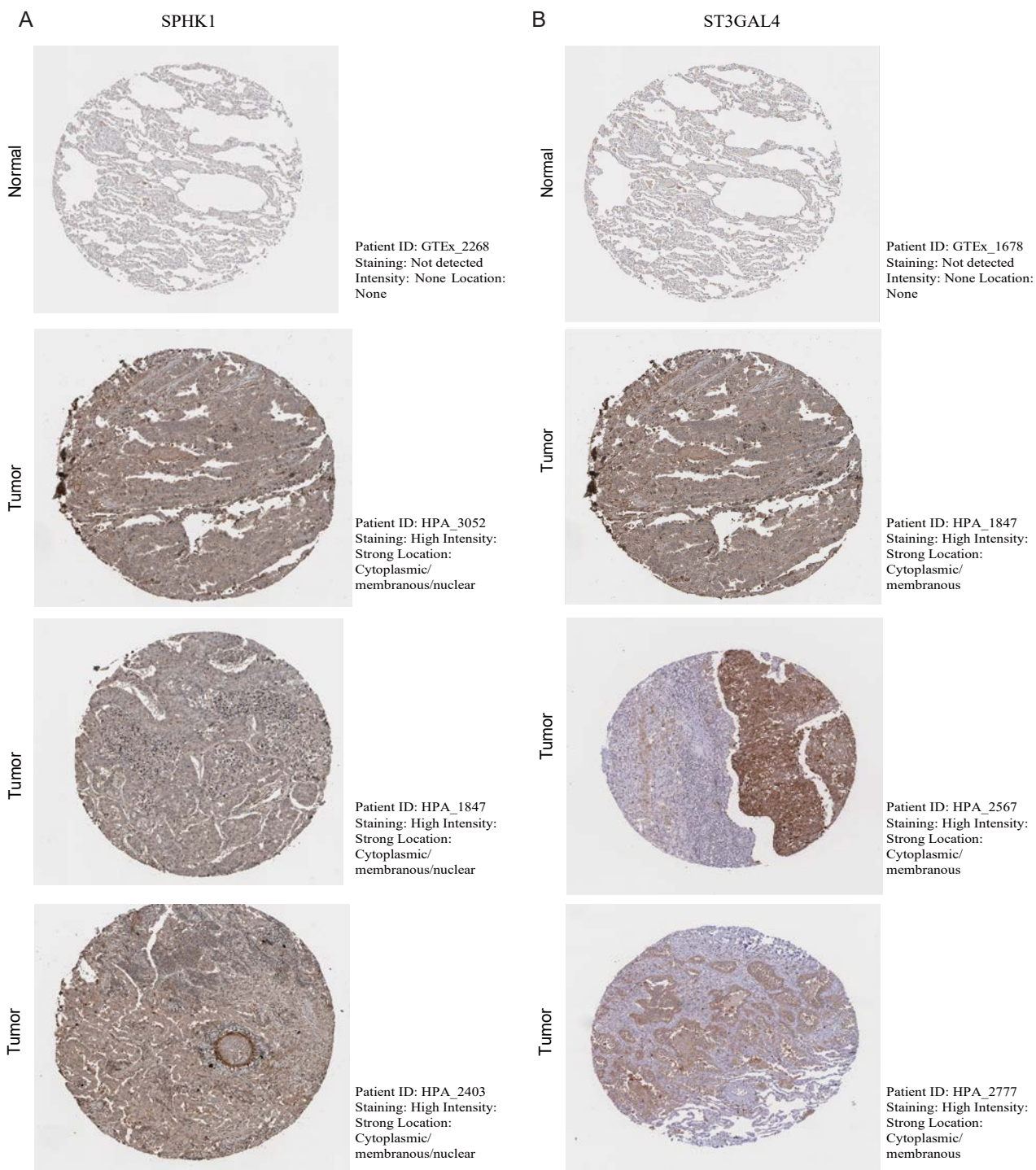




Verification of identified LMRG signature (SPHK1/ST3GAL4) in protein expression level using the Human Protein Atlas (HPA, <https://www.proteinatlas.org/>) database.

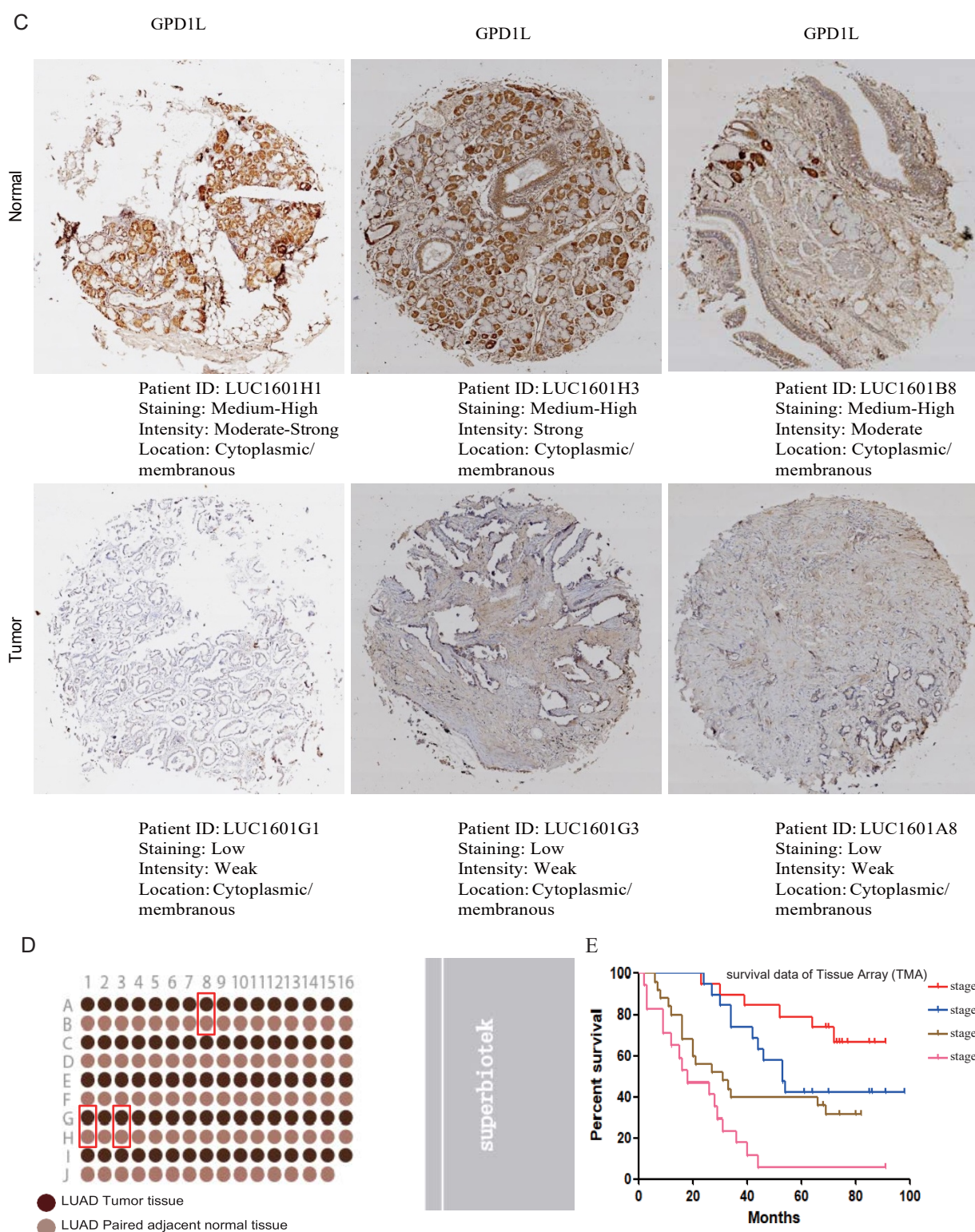


Figure S1 Verification of identified LMRG signature (GPD1L) in protein expression level by IHC analyses on a commercial tissue microarray (TMA) of LUAD (Cat #LUC1601, Shanghai Zhuohao Medical Science and Technology Co. Ltd.) (<https://www.proteinatlas.org/ENSG00000176170-SPHK1/cancer/lung+cancer#img>).

Table S1 RNA-Seq data and statistical analyses for 21-differential expression genes from TCGA database

	AveExpr	t	PValue	adj.PVal	B	logFC
21_DEGs						
<i>GLA</i>	4.518085151	15.99523125	4.09640666	4.92E-05	0.009306128	1.74272825
<i>CHKA</i>	-2.30597804	10.14179057	-3.51115756	0.000488211	0.046135986	-0.253610135
<i>SPTLC2</i>	-1.55060289	10.57017911	-3.18129273	0.001561022	0.098344383	-1.250677285
<i>GPD1L</i>	-2.72473117	14.68046025	-2.99047643	0.002928352	0.119257184	-1.784553554
<i>ALDH1B1</i>	2.8798922	14.6613991	2.967209901	0.003154952	0.119257184	-1.847482865
<i>B4GALT2</i>	2.295863715	18.02370103	2.801016218	0.005299554	0.148776115	-2.283220656
<i>SPHK1</i>	1.012794176	4.062592604	2.552565108	0.011001314	0.231027601	-2.889328347
<i>B3GNT3</i>	5.417914701	22.51836702	2.479618477	0.013493941	0.239387084	-3.05691525
<i>GBA</i>	1.873790668	18.89787698	2.46804016	0.013932582	0.239387084	-3.083080645
<i>SPTLC1</i>	1.165045841	14.97977818	2.365577007	0.018397951	0.28104096	-3.309434342
<i>GNPAT</i>	1.520163551	22.0910689	2.346986271	0.01933086	0.28104096	-3.349500855
<i>CDS1</i>	-1.17375229	11.46734017	-2.24274012	0.025368533	0.311684914	-3.568451842
<i>SGPP2</i>	4.28929618	26.87012641	2.240840261	0.025492283	0.311684914	-3.572351983
<i>PLPP1</i>	-2.78588766	15.10809763	-2.17026994	0.030475336	0.311684914	-3.714931903
<i>PLA2G7</i>	-1.78702984	8.817561652	-2.1237425	0.03420174	0.311684914	-3.806492144
<i>ST3GAL1</i>	-2.12540028	12.24948469	-2.10486648	0.035821359	0.311684914	-3.843083365
<i>NAGA</i>	1.399410646	19.23784807	2.072945845	0.038709586	0.311684914	-3.904232794
<i>LYPLA1</i>	4.469893209	25.42309674	2.017260405	0.044223665	0.311684914	-4.008712713
<i>ST3GAL4</i>	1.531948362	8.758449335	2.0059744	0.045418781	0.311684914	-4.029547704
<i>LPL</i>	-3.5272428	12.1536159	-1.98071514	0.048192802	0.311684914	-4.075762518
<i>ACHE</i>	-1.5820332	5.167613823	-1.96946265	0.049473796	0.311684914	-4.096165022
12_UP_DEGS						
<i>GLA</i>	4.518085151	15.99523125	4.09640666	4.92E-05	0.009306128	1.74272825
<i>ALDH1B1</i>	2.8798922	14.6613991	2.967209901	0.003154952	0.119257184	-1.847482865
<i>B4GALT2</i>	2.295863715	18.02370103	2.801016218	0.005299554	0.148776115	-2.283220656
<i>SPHK1</i>	1.012794176	4.062592604	2.552565108	0.011001314	0.231027601	-2.889328347
<i>B3GNT3</i>	5.417914701	22.51836702	2.479618477	0.013493941	0.239387084	-3.05691525
<i>GBA</i>	1.873790668	18.89787698	2.46804016	0.013932582	0.239387084	-3.083080645
<i>SPTLC1</i>	1.165045841	14.97977818	2.365577007	0.018397951	0.28104096	-3.309434342
<i>GNPAT</i>	1.520163551	22.0910689	2.346986271	0.01933086	0.28104096	-3.349500855
<i>SGPP2</i>	4.28929618	26.87012641	2.240840261	0.025492283	0.311684914	-3.572351983
<i>NAGA</i>	1.399410646	19.23784807	2.072945845	0.038709586	0.311684914	-3.904232794
<i>LYPLA1</i>	4.469893209	25.42309674	2.017260405	0.044223665	0.311684914	-4.008712713
<i>ST3GAL4</i>	1.531948362	8.758449335	2.0059744	0.045418781	0.311684914	-4.029547704
9_DOWN_DEGs						
<i>CHKA</i>	-2.30597804	10.14179057	-3.51115756	0.000488211	0.046135986	-0.253610135
<i>SPTLC2</i>	-1.55060289	10.57017911	-3.18129273	0.001561022	0.098344383	-1.250677285
<i>GPD1L</i>	-2.72473117	14.68046025	-2.99047643	0.002928352	0.119257184	-1.784553554
<i>CDS1</i>	-1.17375229	11.46734017	-2.24274012	0.025368533	0.311684914	-3.568451842
<i>PLPP1</i>	-2.78588766	15.10809763	-2.17026994	0.030475336	0.311684914	-3.714931903
<i>PLA2G7</i>	-1.78702984	8.817561652	-2.1237425	0.03420174	0.311684914	-3.806492144
<i>ST3GAL1</i>	-2.12540028	12.24948469	-2.10486648	0.035821359	0.311684914	-3.843083365
<i>LPL</i>	-3.5272428	12.1536159	-1.98071514	0.048192802	0.311684914	-4.075762518
<i>ACHE</i>	-1.5820332	5.167613823	-1.96946265	0.049473796	0.311684914	-4.096165022

Table S2 Association between GPD1L expression and patients' clinical parameters

Clinical parameters	Case	GPD1L expression		χ^2	P value
		Low	High		
Gender					
Male	38	28	10	1.144	0.285
Female	37	23	14		
Age					
≤60 years	43	27	16	1.257	0.262
>60 years	32	24	8		
Tumor location					
Right	44	27	17	2.155	0.142
Left	31	24	7		
Tumor size					
≤3 cm	51	18	33	6.482	0.011
>3 cm	24	16	8		
N stage					
N0	36	20	16	4.616	0.032
N1-2	38	30	8		
M stage					
M0	64	45	19	1.072	0.304
M1	11	6	5		
TNM stage					
I + II	39	22	17	5.015	0.025
III + IV	36	29	7		
OS status					
Alive	29	13	16	11.668	0.001
Dead	46	38	8		
Pathological grade					
I	2	0	2	6.311	0.111
I-II	5	4	1		
II	31	19	12		
II-III	23	17	6		
III	14	11	3		