

## SUPPLEMENTARY TABLES

Supplementary Table 1. The correlation between ALG3 expression and TMB in pan-cancer.

Gene1	cor	p-value
BRCA	0.307	3.59E-24
LUAD	0.305	3.18E-12
LGG	0.26	3.24E-09
PAAD	0.445	4.72E-09
STAD	0.273	1.15E-07
HNSC	0.208	3.76E-06
LIHC	0.185	0.000987
COAD	-0.165	0.00194
SKCM	0.143	0.001964
KIRC	0.164	0.001965
BLCA	0.151	0.002388
SARC	0.179	0.006826
PRAD	0.1	0.028153
ESCA	-0.16	0.048336
THCA	-0.088	0.052552
UVM	0.215	0.055839
OV	-0.105	0.096102
CHOL	0.268	0.119015
ACC	0.173	0.128777
LUSC	0.066	0.154993
CESC	-0.113	0.17105
GBM	0.097	0.236941
UCEC	-0.051	0.250991
KIRP	0.065	0.284375
DLBC	-0.179	0.288619
MESO	0.115	0.306662
PCPG	-0.07	0.357375
KICH	0.087	0.4956
THYM	-0.048	0.606539
LAML	-0.038	0.698572
TGCT	0.024	0.791313
UCS	0.034	0.80003
READ	0.007	0.941038

**Supplementary Table 2. The correlation between ALG3 expression and MSI in pan-cancer.**

<b>Gene1</b>	<b>cor</b>	<b>p-value</b>
READ	-0.42	8.16E-08
KIRC	0.234	1.46E-05
LGG	-0.155	0.000444
LIHC	0.158	0.00234
STAD	0.148	0.00406
BLCA	0.133	0.007216
LUSC	0.113	0.011966
COAD	-0.101	0.036907
THYM	-0.125	0.173987
LUAD	0.058	0.186825
ACC	-0.136	0.232332
SKCM	-0.052	0.257731
UVM	-0.116	0.30445
BRCA	0.027	0.373871
UCEC	-0.038	0.378115
UCS	-0.115	0.394086
THCA	-0.031	0.495778
PCPG	-0.046	0.536034
GBM	0.048	0.555702
PRAD	-0.024	0.587681
LAML	-0.042	0.658811
ESCA	-0.03	0.706082
CHOL	-0.06	0.732751
KICH	-0.042	0.741147
HNSC	0.015	0.745897
SARC	0.02	0.747498
MESO	0.026	0.813552
DLBC	-0.022	0.880927
PAAD	-0.01	0.891779
KIRP	0.006	0.914698
OV	0.005	0.927708
CESC	-0.001	0.991612
TGCT	0	0.996691

**Supplementary Table 3. Association between ALG3 expression level and drug sensitivity.**

Compound	RNAtype	RNAmolecule	Omics	Source	T. stat	T. fdr	Chi. stat	Chi. fdr	Pearson. stat	Pearson. fdr	Spearman. stat	Spearman. fdr
PD-0325901	mRNA	ALG3	Expression	CCLE	-	-	-	-	-	-	-0.17213	0.035053
1,6-bis[4-(4-aminophenoxy)phenyl]diamantane	mRNA	ALG3	Expression	CellMiner	-	-	-	-	0.46380728	0.009709555	-	-
antineoplastic-131513	mRNA	ALG3	Expression	CellMiner	-	-	-	-	-	-	0.501695	0.0174
Benzethonium Chloride	mRNA	ALG3	Expression	CellMiner	-	-	-	-	-	-	0.408645	0.023312
indole-2,3-dione, 3-[(o-nitrophenyl)hydrazone]	mRNA	ALG3	Expression	CellMiner	-	-	-	-	-	-	-0.53322	0.002584
sb-590885-aad	mRNA	ALG3	Expression	CellMiner	-	-	-	-	0.4544494	0.007762472	0.431296	0.042454
sempervirine, nitrate, dihydrate	mRNA	ALG3	Expression	CellMiner	-	-	-	-	-	-	0.381832	0.034496
BX-912	mRNA	ALG3	Expression	GDSC	-	-	-	-	-	-	0.090154	0.010141
BX795	mRNA	ALG3	Expression	GDSC	-	-	-	-	-	-	0.085795	0.028814
CI-1040	mRNA	ALG3	Expression	GDSC	-	-	-	-	-0.12166483	0.001256026	-0.11084	0.003883
FH535	mRNA	ALG3	Expression	GDSC	-	-	-	-	-	-	-0.0935	0.03232
Genentech Cpd 10	mRNA	ALG3	Expression	GDSC	-	-	-	-	-	-	0.078334	0.029732
GSK429286A	mRNA	ALG3	Expression	GDSC	-	-	-	-	-	-	0.083435	0.017294
GW-2580	mRNA	ALG3	Expression	GDSC	-	-	-	-	-	-	0.07488	0.038217
Olaparib	mRNA	ALG3	Expression	GDSC	-	-	-	-	-	-	0.081806	0.036641
Selumetinib	mRNA	ALG3	Expression	GDSC	-	-	-	-	-0.1133474	0.001614548	-0.1253	0.00041
Tivozanib	mRNA	ALG3	Expression	GDSC	-	-	-	-	-	-	0.08174	0.019842
Trametinib	mRNA	ALG3	Expression	GDSC	-	-	-	-	-0.1248489	0.000340464	-0.12708	0.000241
UNC1215	mRNA	ALG3	Expression	GDSC	-	-	-	-	-	-	0.07031	0.047079
VX-11e	mRNA	ALG3	Expression	GDSC	-	-	-	-	-0.1036142	0.005889225	-0.10918	0.002903