

SUPPLEMENTARY TABLES

Supplementary Table 1. Differentially expressed telomere-related gene in LUAD.

TRG	logFC	P value	TRG	logFC	P value	TRG	logFC	P value	TRG	logFC	P value
ANGPT4	-4.85	5.03E-84	KLF2	-2.13	8.47E-37	TDRD10	-1.58	6.32E-09	JUNB	-1.18	1.33E-18
TNNC1	-4.5	3.40E-59	GATA2	-2.11	5.10E-38	AR	-1.58	9.09E-13	CSRP1	-1.18	2.97E-42
ANXA8L1	-4.49	1.01E-41	ALDH1A1	-2.09	1.12E-18	USP2	-1.58	6.29E-17	MYO1C	-1.18	4.83E-38
SH3GL2	-4.47	3.47E-47	PRKCQ	-2.09	4.06E-34	DYDC1	-1.57	5.96E-14	MACF1	-1.16	6.75E-17
GPA33	-4.24	1.66E-52	LGALS1	-2.09	1.32E-44	PHYHD1	-1.56	2.66E-11	TXNIP	-1.16	2.84E-14
FHL1	-4.08	8.23E-76	PLCL1	-2.08	1.57E-50	ELOVL3	-1.56	2.94E-10	ABCC6	-1.16	3.18E-10
FOSB	-3.88	2.17E-29	PNMT	-2.08	3.09E-14	SYNE1	-1.52	9.90E-18	SYDE1	-1.15	1.88E-22
PTPN5	-3.75	1.21E-62	DAW1	-2.05	5.00E-13	CEBPA	-1.51	3.69E-14	EPHX2	-1.15	6.48E-13
PRX	-3.63	9.87E-76	ABCC8	-2.02	1.56E-10	DST	-1.5	1.40E-15	FOXO1	-1.15	3.96E-19
XAGE2	-3.55	1.49E-19	SULT1B1	-2.01	9.92E-19	ABCC9	-1.5	3.51E-18	SMARCA2	-1.14	4.56E-24
ZBTB16	-3.48	5.48E-27	LRCH2	-2	4.94E-25	MITF	-1.5	6.03E-29	TNIP3	-1.13	2.64E-06
PCSK9	-3.34	5.70E-23	WFS1	-1.97	4.31E-55	ARRDC4	-1.48	3.63E-26	PLCD3	-1.13	3.65E-11
ANOS1	-3.34	5.83E-55	PDE1B	-1.97	5.25E-42	DMD	-1.44	7.69E-17	RAPGEF3	-1.13	4.80E-15
FGFR4	-3.32	3.53E-40	KLF6	-1.97	1.16E-52	SYDE2	-1.42	1.10E-18	FOXO4	-1.12	1.73E-29
LRRC18	-3.28	3.47E-32	EGR1	-1.96	9.33E-23	LRRC25	-1.41	1.48E-20	TNIK	-1.12	8.90E-10
IQSEC3	-3.17	4.21E-57	PPP1R17	-1.94	5.38E-27	HOXA7	-1.4	3.25E-14	LRCH1	-1.1	3.99E-31
TAL1	-3.08	5.44E-79	AHNAK	-1.92	2.98E-27	PRKD1	-1.4	2.74E-19	BIN2	-1.1	3.89E-16
TUBB1	-3.07	4.82E-59	FLII	-1.91	5.53E-50	VAMP2	-1.39	7.02E-38	ITGAX	-1.1	8.85E-13
WDR38	-3	1.96E-16	S100A8	-1.9	4.01E-13	ETS1	-1.39	8.29E-27	MSN	-1.09	2.19E-20
PDK4	-2.91	6.85E-38	FBP1	-1.89	2.95E-31	PPM1F	-1.38	5.01E-56	NR2F1	-1.09	3.81E-13
CLIC3	-2.84	1.83E-27	CDK15	-1.87	2.10E-22	RARRES2	-1.38	3.72E-16	NEK7	-1.09	1.01E-30
MYOCD	-2.81	5.94E-27	NLGN4X	-1.86	2.34E-15	TFRC	-1.38	2.93E-21	SLC7A8	-1.07	9.03E-09
KLF4	-2.7	1.44E-42	PRDM16	-1.86	3.60E-11	KAT2B	-1.38	1.73E-32	PRKCB	-1.07	1.57E-11
SNX22	-2.63	1.24E-54	ZFP42	-1.82	1.50E-05	NCBP2L	-1.36	3.87E-13	PAPSS1	-1.07	2.58E-51
CFTR	-2.57	8.81E-15	ADPRH	-1.8	1.32E-61	FGFR3	-1.36	8.27E-07	TLN1	-1.07	1.04E-28
ASPG	-2.57	4.72E-15	CDKN2B	-1.8	2.27E-22	ARHGAP23	-1.35	2.04E-24	OSBPL11	-1.06	9.54E-51
EPAS1	-2.54	1.74E-75	KLF9	-1.79	9.71E-41	TFEC	-1.34	3.79E-14	FOXN3	-1.06	1.89E-25
ALPL	-2.5	3.00E-17	FOS	-1.79	9.86E-18	CHD5	-1.34	4.18E-12	HHATL	-1.06	0.001297
MACROD2	-2.43	3.60E-17	FOXF2	-1.76	1.08E-23	PALM	-1.33	4.47E-17	PLCL2	-1.05	1.88E-15
CFAP58	-2.41	8.33E-27	TCEAL7	-1.75	1.23E-32	LRRC63	-1.29	4.08E-13	ARHGAP20	-1.05	2.34E-06
KCTD16	-2.37	3.92E-33	MYH10	-1.73	3.90E-37	PTPRG	-1.29	6.74E-19	MECOM	-1.05	1.12E-08
PAK5	-2.35	5.93E-25	SLC7A7	-1.73	2.16E-35	THEMIS2	-1.28	1.89E-25	JAK2	-1.04	6.56E-19
GATA6	-2.33	2.44E-36	ETV1	-1.73	2.90E-21	FERMT3	-1.28	1.19E-18	BMP7	-1.04	0.0004118
SOX5	-2.31	9.75E-38	TDRD9	-1.72	4.36E-11	JUN	-1.27	2.13E-20	JAZF1	-1.04	2.08E-21
GATA5	-2.3	1.67E-25	RYR2	-1.72	1.72E-15	IRS4	-1.27	7.17E-09	CREB5	-1.02	1.26E-08
SIRPD	-2.28	3.86E-40	ZEB2	-1.7	2.96E-30	IP6K3	-1.26	0.0001382	TRIM22	-1.02	1.54E-12
KLF17	-2.27	1.97E-36	PLCB4	-1.69	5.54E-12	ARL11	-1.26	8.13E-18	MT1X	-1.01	1.76E-07
DOK2	-2.24	2.48E-39	PLCE1	-1.68	1.12E-30	DOCK2	-1.25	5.16E-16	ARHGEF28	-1	3.55E-08
PDLIM2	-2.23	3.11E-67	ARRB1	-1.67	8.46E-38	NFATC1	-1.24	2.24E-24	BAIAP2L1	1	4.61E-23
DYDC2	-2.22	6.85E-14	AK1	-1.66	4.66E-24	GABRB3	-1.23	0.0007302	BASP1	1.01	1.67E-07
KLF15	-2.22	2.31E-21	TUBB6	-1.66	2.60E-33	CDK14	-1.22	1.01E-17	GMNN	1.01	3.55E-21
GATA1	-2.22	4.06E-36	SLC6A12	-1.65	3.53E-20	MAP3K3	-1.21	2.95E-41	GLDC	1.01	0.0001704
CAMK2A	-2.21	7.08E-41	GNMT	-1.61	7.52E-19	ETS2	-1.2	1.70E-21	PKIB	1.02	7.91E-06
PPARG	-2.18	6.40E-25	UTRN	-1.61	5.33E-32	GATA3	-1.19	1.79E-13	LRRIQ4	1.02	2.56E-05
TBX2	-2.16	1.27E-42	JUND	-1.6	3.43E-36	ANXA1	-1.19	2.22E-09	POC1A	1.02	2.68E-17
MYOM2	-2.15	5.04E-30	ALDH2	-1.59	1.19E-27	CDKL2	-1.19	7.44E-07	CHEK2	1.02	1.07E-20
DSG2	1.02	5.57E-12	PC	1.4	5.39E-26	RMI2	1.87	1.37E-48	IGF2BP1	2.8	1.94E-09
TFAP4	1.03	1.74E-32	MCM2	1.4	4.05E-21	ASF1B	1.89	1.25E-37	CENPF	2.82	4.70E-51
GAP43	1.03	0.0001926	EDN2	1.41	5.29E-06	CHEK1	1.9	1.61E-35	HMGB3	2.84	6.90E-43
DSCC1	1.04	9.30E-13	CHAF1B	1.42	1.12E-36	PACSIN1	1.92	4.90E-20	EXO1	2.86	7.46E-48
ZC3HAV1L	1.05	2.30E-17	RAD54B	1.42	7.61E-26	TDRD5	1.94	8.78E-07	AURKB	2.89	9.61E-46
ATAD5	1.05	2.24E-18	RHPN1	1.44	5.16E-16	AURKA	1.96	2.31E-33	HMGA2	2.97	2.49E-10

GMDS	1.06	4.98E-19	ATAD2	1.45	1.02E-28	ABCY6	1.97	3.49E-31	AKR7A3	2.99	3.42E-17
TTBK1	1.07	1.14E-11	FANCI	1.47	5.84E-34	RHBDL2	1.98	1.41E-29	PCP4	3.05	2.39E-12
RACGAP1	1.07	6.76E-18	CALML6	1.47	2.81E-11	SLC7A11	1.99	1.84E-12	NEK2	3.09	1.17E-52
TDRKH	1.08	1.35E-24	KAT2A	1.48	7.00E-40	BRIP1	2	4.49E-36	CDC20	3.13	1.25E-52
S100A7	1.09	0.0031685	FOXP3	1.49	1.47E-22	EZH2	2.04	5.04E-52	TFAP2A	3.14	2.75E-33
HRG	1.11	5.69E-07	FANCA	1.51	3.76E-36	TRIP13	2.05	3.81E-28	ETV4	3.17	3.14E-53
NME4	1.11	1.48E-19	RCC1	1.51	7.06E-54	CLSPN	2.05	4.51E-35	KIF4A	3.18	1.38E-56
SLC7A9	1.11	2.19E-05	BLM	1.51	1.45E-30	ABCC3	2.07	7.32E-24	TOP2A	3.32	8.46E-63
CCT3	1.11	5.80E-39	ARL14	1.52	9.51E-05	ORC1	2.08	4.67E-35	TUBB3	3.56	2.29E-53
RNF222	1.12	5.33E-07	AVPR1B	1.53	5.07E-09	JSRP1	2.09	6.70E-15	TERT	3.66	3.62E-40
LDHA	1.12	7.61E-33	HGD	1.53	3.51E-05	EME1	2.1	1.89E-36	AKR1B10	3.7	9.98E-11
PRDX4	1.15	3.28E-23	RAD51	1.53	6.05E-25	SLC7A5	2.11	1.22E-28	PITX1	4	1.71E-28
CCNE2	1.15	1.06E-14	PNCK	1.54	5.58E-08	RHBDL1	2.21	1.79E-21	GREM1	4.03	6.81E-36
FANCD2	1.16	3.16E-32	MYCN	1.55	1.04E-06	CCNA2	2.25	4.07E-39			
ABCC2	1.18	0.0009098	IVL	1.55	0.0019983	COCH	2.27	2.45E-16			
MCM6	1.18	9.63E-28	DBNDD1	1.57	1.33E-27	SLC7A10	2.28	3.16E-09			
E2F3	1.18	5.32E-41	LMNB1	1.57	8.93E-37	RECQL4	2.28	1.34E-42			
RUNX2	1.18	2.67E-18	NAT16	1.57	1.75E-11	IGF2BP3	2.36	3.69E-11			
FOXO6	1.19	8.36E-07	ABCC11	1.58	6.70E-16	HMMR	2.36	3.07E-41			
DNMT3B	1.2	5.93E-15	FOXH1	1.6	4.03E-11	CCNB1	2.37	5.42E-47			
UGDH	1.2	2.46E-13	TUBB8	1.6	3.19E-16	MAST1	2.39	9.51E-32			
FANCB	1.21	6.00E-16	PAICS	1.61	3.36E-60	CDCA8	2.4	3.93E-49			
MAGEA4	1.23	0.0076762	DQX1	1.62	3.15E-09	PKMYT1	2.41	3.40E-39			
FEN1	1.25	2.41E-30	DNA2	1.62	1.61E-32	CCNE1	2.42	1.05E-36			
WDHD1	1.26	5.79E-24	PIF1	1.63	4.00E-22	NDC80	2.43	6.48E-42			
MSH5	1.28	6.19E-14	KPNA2	1.64	5.82E-34	RAD54L	2.48	5.27E-43			
CHTF18	1.3	9.10E-20	POLE2	1.64	9.46E-30	ORC6	2.49	2.23E-54			
PLOD2	1.31	1.23E-11	PFKP	1.66	1.08E-24	NCAPG	2.51	1.38E-39			
RFC4	1.31	5.00E-29	UCHL1	1.66	9.45E-07	XRCC2	2.55	1.26E-48			
CALML5	1.31	0.0007595	TUBB2B	1.66	5.35E-07	PLK1	2.56	2.38E-54			
TXNDC17	1.32	2.02E-22	SULT4A1	1.67	8.92E-06	CDC45	2.57	6.69E-44			
GAPDH	1.33	1.06E-29	ECT2	1.71	2.78E-35	FOXM1	2.6	5.06E-43			
PDK1	1.35	2.16E-27	CDC25A	1.72	7.72E-26	S100P	2.61	7.35E-09			
FANCG	1.35	8.06E-24	PAFAH1B3	1.75	1.31E-29	TBX15	2.61	6.56E-19			
RAD51AP1	1.35	1.69E-18	HMGAI	1.81	5.50E-32	MKI67	2.62	5.63E-46			
RASGEF1C	1.35	2.24E-06	MCM4	1.82	2.48E-42	PSAT1	2.68	3.60E-38			
PAX5	1.36	3.93E-07	E2F2	1.84	9.29E-35	SGO1	2.68	3.06E-44			
RPS10	1.38	1.15E-20	CDK1	1.86	1.66E-30	TRIM15	2.71	3.10E-12			

Abbreviations: TRG: telomere-related gene; LUAD: lung adenocarcinoma.

Supplementary Table 2. Significant TRGs in K-M curve and COX regression analysis.

Similar TRG in K-M	P value	Similar TRG in COX	Hazard ratio	P value	Different TRG in K-M	P value	Different TRG in COX	Hazard ratio	P value
ABCC2	0.007	ABCC2	1.1	0	ADPRH	0.018	ANOS1	0.87	0.002
ABCC6	0.017	ABCC6	0.86	0.005	ARL11	0.017	ARHGAP20	0.91	0.032
ABCC8	0.03	ABCC8	0.91	0.007	HMGA1	0.013	AURKA	1.17	0.02
ALDH2	0.004	ALDH2	0.8	0.001	JAK2	0.045	BIN2	0.82	0.008
ARL14	0.037	ARL14	1.1	0.001	JAZF1	0.001	BLM	1.22	0.018
ARRB1	0.048	ARRB1	0.77	0	KPNA2	0.036	CDC25A	1.19	0.013
AURKB	0.024	AURKB	1.11	0.047	LDHA	0.03	EPAS1	0.84	0.031
CCNA2	0.001	CCNA2	1.24	0	PDE1B	0.036	ETV1	0.9	0.037
CCNB1	0.01	CCNB1	1.22	0.003	RASGEF1C	0.014	FANCI	1.26	0.01
CDC20	0.022	CDC20	1.13	0.024	SMARCA2	0.019	FOXN3	0.78	0.02
CDK1	0.003	CDK1	1.22	0.002	UTRN	0.043	GATA1	0.89	0.042
CDKL2	0	CDKL2	0.87	0.001	XRCC2	0.022	GATA2	0.87	0.033
CEBPA	0.015	CEBPA	0.9	0.031			HHATL	0.9	0.009
CENPF	0.04	CENPF	1.14	0.02			HOXA7	1.16	0.011
CFTR	0.017	CFTR	0.91	0.002			ITGAX	0.85	0.017
CHEK1	0.003	CHEK1	1.27	0.001			KLF4	1.13	0.024
CLSPN	0.018	CLSPN	1.16	0.024			LMNB1	1.19	0.035
DMD	0.043	DMD	0.87	0.019			MYOM2	0.9	0.046
DOCK2	0.018	DOCK2	0.85	0.009			NLGN4X	1.09	0.048
DOK2	0.005	DOK2	0.88	0.03			PCP4	0.95	0.022
DSG2	0.032	DSG2	1.21	0.011			PCSK9	1.07	0.023
ECT2	0	ECT2	1.27	0.001			PHYHD1	0.91	0.026
EPHX2	0.049	EPHX2	0.88	0.036			PITX1	1.06	0.047
EXO1	0.003	EXO1	1.19	0.001			PKIB	1.11	0.026
FBP1	0.002	FBP1	0.83	0.002			PKMYT1	1.17	0.012
FEN1	0.025	FEN1	1.28	0.013			PLOD2	1.13	0.024
FLI1	0.022	FLI1	0.84	0.031			RAPGEF3	0.87	0.037
FOXM1	0.002	FOXM1	1.2	0.001			RHPN1	0.89	0.032
FOXO4	0.037	FOXO4	0.79	0.022			SGO1	1.16	0.007
FOXO6	0.007	FOXO6	0.91	0.035			SLC7A11	1.08	0.04
FOXP3	0.004	FOXP3	0.82	0.005			SYDE2	0.84	0.008
GAP43	0.02	GAP43	1.1	0.012			TRIM22	0.84	0.008
GNMT	0.005	GNMT	0.82	0.001			TUBB6	1.17	0.038
HMGA2	0.031	HMGA2	1.06	0.005			WDHD1	1.33	0.001
HMMR	0.001	HMMR	1.25	0					
HRG	0.006	HRG	1.11	0.021					
IGF2BP1	0.043	IGF2BP1	1.09	0					
IGF2BP3	0.032	IGF2BP3	1.07	0.016					
JSRP1	0.048	JSRP1	0.92	0.041					
KAT2B	0	KAT2B	0.82	0.012					
KIF4A	0.032	KIF4A	1.16	0.008					
KLF15	0.009	KLF15	0.87	0.002					
MACF1	0.042	MACF1	0.79	0.009					
MAP3K3	0.023	MAP3K3	0.72	0.001					
MECOM	0.03	MECOM	0.88	0.024					

MKI67	0.001	MKI67	1.15	0.011
NCAPG	0.02	NCAPG	1.17	0.005
NDC80	0.021	NDC80	1.19	0.004
NEK2	0.001	NEK2	1.16	0.005
NFATC1	0.002	NFATC1	0.82	0.006
PAX5	0.013	PAX5	0.89	0.005
PDLIM2	0.015	PDLIM2	0.86	0.042
PFKP	0.006	PFKP	1.15	0.03
PLCD3	0.014	PLCD3	1.32	0
PLCL1	0.006	PLCL1	0.87	0.048
PLCL2	0.008	PLCL2	0.81	0.009
PLK1	0.001	PLK1	1.27	0
PRDM16	0	PRDM16	0.9	0.002
PRKCB	0.006	PRKCB	0.82	0.001
RACGAP1	0.018	RACGAP1	1.22	0.017
RAD51	0.023	RAD51	1.24	0.003
S100P	0.038	S100P	1.07	0.007
SLC7A8	0.002	SLC7A8	0.86	0.008
SNX22	0.011	SNX22	0.82	0.001
SULT4A1	0.029	SULT4A1	0.94	0.027
SYNE1	0.004	SYNE1	0.84	0.002
TDRD10	0.005	TDRD10	0.88	0.001
TFAP2A	0.004	TFAP2A	1.11	0.007
TFEC	0.031	TFEC	0.89	0.045
THEMIS2	0.03	THEMIS2	0.8	0.006
TNIK	0.002	TNIK	0.85	0.003
TRIM15	0.014	TRIM15	1.08	0.003
VAMP2	0.021	VAMP2	0.8	0.021
ZEB2	0.001	ZEB2	0.85	0.027

Abbreviation: TRG: telomere-related gene.