

Supplementary table 1. Correlation analysis between 13 abnormally expressed circulating lncRNAs and autophagy- and apoptosis-related mRNAs.

mRNA	lncRNA	R	p_value
JUN	LOC338758	0.643690128	0
ATG2B	AC004485.3	-0.714231677	0
CAPN2	AC004485.3	-0.76918051	0
CASP8	AC004485.3	-0.72073522	0
CTSW	AC004485.3	-0.364477733	0
DFFB	AC004485.3	-0.593567757	0
FASLG	AC004485.3	-0.415183409	0
GABARAPL1	AC004485.3	-0.443660749	0
GZMB	AC004485.3	-0.486368377	0
HIF1A	AC004485.3	-0.563083389	0
ITPR3	AC004485.3	-0.656598114	0
LMNA	AC004485.3	-0.502658644	0
MAPK9	AC004485.3	-0.745011154	0
MTMR4	AC004485.3	-0.631630655	0
NGF	AC004485.3	0.662900828	0
PIK3R2	AC004485.3	0.768292974	0
PPP2CA	AC004485.3	-0.650676322	0
PRF1	AC004485.3	-0.516450823	0
PRKACA	AC004485.3	0.561247005	0
RRAGB	AC004485.3	-0.562181803	0
RRAS2	AC004485.3	-0.739352734	0
TP53AIP1	AC004485.3	-0.521547304	0
ATG2B	AC004920.3	-0.688260003	0
CAPN2	AC004920.3	-0.721874207	0
CASP8	AC004920.3	-0.710170788	0
DFFB	AC004920.3	-0.633065095	0
FASLG	AC004920.3	-0.373966601	0
GABARAPL1	AC004920.3	-0.438209719	0
GZMB	AC004920.3	-0.465630346	0
HIF1A	AC004920.3	-0.610751448	0
ITPR3	AC004920.3	-0.752279036	0
LMNA	AC004920.3	-0.439572573	0
MAPK9	AC004920.3	-0.798566976	0
MTMR4	AC004920.3	-0.636697344	0
NGF	AC004920.3	0.724603621	0
PIK3R2	AC004920.3	0.818610525	0
PPP2CA	AC004920.3	-0.669118796	0
PRF1	AC004920.3	-0.498376807	0
PRKACA	AC004920.3	0.612546221	0
RRAGB	AC004920.3	-0.642825546	0
RRAS2	AC004920.3	-0.771131412	0
TP53AIP1	AC004920.3	-0.651868648	0
TUBA8	AC004920.3	0.505828418	0
ATG2B	AJ006998.2	-0.609649519	0
CAPN2	AJ006998.2	-0.592961077	0
CASP8	AJ006998.2	-0.542745004	0
DFFB	AJ006998.2	-0.534157073	0
GZMB	AJ006998.2	-0.420621945	0

HIF1A	AJ006998.2	-0.396528308	0
ITPR3	AJ006998.2	-0.569730595	0
LMNA	AJ006998.2	-0.368073761	0
MAPK9	AJ006998.2	-0.596054248	0
MTMR4	AJ006998.2	-0.61642796	0
NGF	AJ006998.2	0.452186364	0
PIK3R2	AJ006998.2	0.636365577	0
PPP2CA	AJ006998.2	-0.436689452	0
PRF1	AJ006998.2	-0.418019036	0
PRKACA	AJ006998.2	0.405736603	0
RRAGB	AJ006998.2	-0.446148941	0
RRAS2	AJ006998.2	-0.654368264	0
ATG2B	H19	-0.523048677	0
CAPN2	H19	-0.57130901	0
CASP8	H19	-0.523031775	0
DFFB	H19	-0.48440924	0
HIF1A	H19	-0.481877785	0
ITPR3	H19	-0.550040544	0
MAPK9	H19	-0.605167061	0
MTMR4	H19	-0.56230443	0
NGF	H19	0.631124183	0
PIK3R2	H19	0.595441488	0
PPP2CA	H19	-0.558499489	0
PRKACA	H19	0.56258483	0
RRAGB	H19	-0.471630707	0
RRAS2	H19	-0.609785871	0
TP53AIP1	H19	-0.475810625	0
TUBA8	H19	0.565251441	0
ATG2B	RP11-247A12.1	-0.724252526	0
CAPN2	RP11-247A12.1	-0.756851286	0
CASP8	RP11-247A12.1	-0.758297941	0
DFFB	RP11-247A12.1	-0.652251056	0
FASLG	RP11-247A12.1	-0.360574151	0
GABARAPL1	RP11-247A12.1	-0.476498324	0
GZMB	RP11-247A12.1	-0.454048449	0
HIF1A	RP11-247A12.1	-0.609837751	0
ITPR3	RP11-247A12.1	-0.718271301	0
LMNA	RP11-247A12.1	-0.50437172	0
MAPK9	RP11-247A12.1	-0.774473814	0
MTMR4	RP11-247A12.1	-0.710165171	0
NGF	RP11-247A12.1	0.664084346	0
PIK3R2	RP11-247A12.1	0.815409126	0
PPP2CA	RP11-247A12.1	-0.663401742	0
PRF1	RP11-247A12.1	-0.430337299	0
PRKACA	RP11-247A12.1	0.551277296	0
RRAGB	RP11-247A12.1	-0.60776178	0
RRAS2	RP11-247A12.1	-0.799014101	0
TP53AIP1	RP11-247A12.1	-0.526058159	0
TUBA8	RP11-247A12.1	0.395718839	0
ATG2B	RP11-288L9.4	-0.705848887	0
CAPN2	RP11-288L9.4	-0.715825568	0
CASP8	RP11-288L9.4	-0.715740472	0
DFFB	RP11-288L9.4	-0.658287092	0

FASLG	RP11-288L9.4	-0.418381499	0
GABARAPL1	RP11-288L9.4	-0.496516538	0
GZMB	RP11-288L9.4	-0.474409434	0
HIF1A	RP11-288L9.4	-0.611715213	0
ITPR3	RP11-288L9.4	-0.769711436	0
LMNA	RP11-288L9.4	-0.50247981	0
MAPK9	RP11-288L9.4	-0.806351045	0
MTMR4	RP11-288L9.4	-0.696432112	0
NGF	RP11-288L9.4	0.70957459	0
PIK3R2	RP11-288L9.4	0.81513824	0
PPP2CA	RP11-288L9.4	-0.654867579	0
PRF1	RP11-288L9.4	-0.487506303	0
PRKACA	RP11-288L9.4	0.619739302	0
RRAGB	RP11-288L9.4	-0.63730659	0
RRAS2	RP11-288L9.4	-0.810907349	0
TP53AIP1	RP11-288L9.4	-0.607537801	0
TUBA8	RP11-288L9.4	0.509344093	0
ATG2B	RP11-344B5.2	-0.460379141	0
CASP8	RP11-344B5.2	-0.392321913	0
CTSW	RP11-344B5.2	-0.405232341	0
DFFB	RP11-344B5.2	-0.329743898	0
FASLG	RP11-344B5.2	-0.503169988	0
GABARAPL1	RP11-344B5.2	-0.428652988	0
GZMB	RP11-344B5.2	-0.473743061	0
HIF1A	RP11-344B5.2	-0.397383082	0
ITPR3	RP11-344B5.2	-0.56554535	0
LMNA	RP11-344B5.2	-0.460253585	0
MAPK9	RP11-344B5.2	-0.522671108	0
MTMR4	RP11-344B5.2	-0.390090218	0
NGF	RP11-344B5.2	0.344660193	0
PIK3R2	RP11-344B5.2	0.416742812	0
PRF1	RP11-344B5.2	-0.492678377	0
PRKACA	RP11-344B5.2	0.66164537	0
RRAS2	RP11-344B5.2	-0.552714436	0
TNFSF10	RP11-344B5.2	0.496968227	0
TP53AIP1	RP11-344B5.2	-0.461966995	0
ATG2B	RP11-452C8.1	-0.645894435	0
CAPN2	RP11-452C8.1	-0.681581574	0
CASP8	RP11-452C8.1	-0.716682982	0
DFFB	RP11-452C8.1	-0.581870864	0
FASLG	RP11-452C8.1	-0.399460761	0
GABARAPL1	RP11-452C8.1	-0.489316978	0
GZMB	RP11-452C8.1	-0.428522585	0
HIF1A	RP11-452C8.1	-0.669277683	0
ITPR3	RP11-452C8.1	-0.724536901	0
LMNA	RP11-452C8.1	-0.509214945	0
MAPK9	RP11-452C8.1	-0.721031571	0
MTMR4	RP11-452C8.1	-0.712576018	0
NGF	RP11-452C8.1	0.803859033	0
PIK3R2	RP11-452C8.1	0.761516347	0
PPP2CA	RP11-452C8.1	-0.649578067	0
PRF1	RP11-452C8.1	-0.466460217	0
PRKACA	RP11-452C8.1	0.541979954	0

RRAGB	RP11-452C8.1	-0.517992179	0
RRAS2	RP11-452C8.1	-0.72443085	0
TP53AIP1	RP11-452C8.1	-0.645700832	0
TUBA8	RP11-452C8.1	0.440102905	0
ATG2B	RP11-565A3.1	-0.611636319	0
CAPN2	RP11-565A3.1	-0.683781069	0
CASP8	RP11-565A3.1	-0.710291929	0
DFFB	RP11-565A3.1	-0.650107085	0
FASLG	RP11-565A3.1	-0.351164886	0
GABARAPL1	RP11-565A3.1	-0.555179887	0
GZMB	RP11-565A3.1	-0.392944413	0
HIF1A	RP11-565A3.1	-0.70518681	0
ITPR3	RP11-565A3.1	-0.699034454	0
LMNA	RP11-565A3.1	-0.471003829	0
MAPK9	RP11-565A3.1	-0.676422968	0
MTMR4	RP11-565A3.1	-0.673408812	0
NGF	RP11-565A3.1	0.654996891	0
PIK3R2	RP11-565A3.1	0.682182791	0
PPP2CA	RP11-565A3.1	-0.63873464	0
PRF1	RP11-565A3.1	-0.406999018	0
PRKACA	RP11-565A3.1	0.506184337	0
RRAGB	RP11-565A3.1	-0.41712718	0
RRAS2	RP11-565A3.1	-0.675951754	0
TP53AIP1	RP11-565A3.1	-0.49757339	0
TUBA8	RP11-565A3.1	0.39388403	0
ATG2B	RP5-1114G22.2	-0.518240822	0
CAPN2	RP5-1114G22.2	-0.514009117	0
CASP8	RP5-1114G22.2	-0.438199549	0
FASLG	RP5-1114G22.2	-0.372718776	0
GZMB	RP5-1114G22.2	-0.449264027	0
ITPR3	RP5-1114G22.2	-0.453024173	0
MAPK9	RP5-1114G22.2	-0.508561355	0
MTMR4	RP5-1114G22.2	-0.382685837	0
NGF	RP5-1114G22.2	0.77637448	0
PIK3R2	RP5-1114G22.2	0.624109746	0
PPP2CA	RP5-1114G22.2	-0.492166801	0
PRF1	RP5-1114G22.2	-0.457756187	0
PRKACA	RP5-1114G22.2	0.414905801	0
RRAGB	RP5-1114G22.2	-0.489792239	0
RRAS2	RP5-1114G22.2	-0.469266211	0
TP53AIP1	RP5-1114G22.2	-0.474637893	0
TUBA8	RP5-1114G22.2	0.354884809	0
ATG2B	RP5-902P8.10	-0.691715205	0
CAPN2	RP5-902P8.10	-0.712738621	0
CASP8	RP5-902P8.10	-0.687142786	0
DFFB	RP5-902P8.10	-0.596176418	0
FASLG	RP5-902P8.10	-0.416853214	0
GABARAPL1	RP5-902P8.10	-0.447481617	0
GZMB	RP5-902P8.10	-0.467250519	0
HIF1A	RP5-902P8.10	-0.648973781	0
ITPR3	RP5-902P8.10	-0.692270043	0
LMNA	RP5-902P8.10	-0.416636821	0
MAPK9	RP5-902P8.10	-0.741665855	0

MTMR4	RP5-902P8.10	-0.66855444	0
NGF	RP5-902P8.10	0.828633737	0
PIK3R2	RP5-902P8.10	0.764697781	0
PPP2CA	RP5-902P8.10	-0.695533011	0
PRF1	RP5-902P8.10	-0.502474263	0
PRKACA	RP5-902P8.10	0.618962852	0
RRAGB	RP5-902P8.10	-0.567677771	0
RRAS2	RP5-902P8.10	-0.721221996	0
TP53AIP1	RP5-902P8.10	-0.575666442	0
TUBA8	RP5-902P8.10	0.474592708	0
ATG2B	XXbac-B33L19.4	-0.688483755	0
CAPN2	XXbac-B33L19.4	-0.746887695	0
CASP8	XXbac-B33L19.4	-0.768370527	0
DFFB	XXbac-B33L19.4	-0.654523695	0
FASLG	XXbac-B33L19.4	-0.415549776	0
GABARAPL1	XXbac-B33L19.4	-0.546084572	0
GZMB	XXbac-B33L19.4	-0.407151916	0
HIF1A	XXbac-B33L19.4	-0.729191812	0
ITPR3	XXbac-B33L19.4	-0.760657997	0
LMNA	XXbac-B33L19.4	-0.509668707	0
MAPK9	XXbac-B33L19.4	-0.792169063	0
MTMR4	XXbac-B33L19.4	-0.732594202	0
NGF	XXbac-B33L19.4	0.740474684	0
PIK3R2	XXbac-B33L19.4	0.77226299	0
PPP2CA	XXbac-B33L19.4	-0.72674128	0
PRF1	XXbac-B33L19.4	-0.450827048	0
PRKACA	XXbac-B33L19.4	0.631100293	0
RRAGB	XXbac-B33L19.4	-0.561046789	0
RRAS2	XXbac-B33L19.4	-0.791976923	0
TP53AIP1	XXbac-B33L19.4	-0.645175924	0
TUBA8	XXbac-B33L19.4	0.460721822	0
GABARAPL1	H19	-0.321124641	0.01
LMNA	H19	-0.316634238	0.01
PRF1	H19	-0.307135501	0.01
CAPN2	RP11-344B5.2	-0.32796016	0.01
HIF1A	RP5-1114G22.2	-0.324809718	0.01
TUBA8	AC004485.3	0.30297661	0.02
DFFB	RP5-1114G22.2	-0.299083772	0.02
TNFSF10	RP5-902P8.10	0.300581802	0.02
GABARAPL1	AJ006998.2	-0.290637738	0.03
TP53AIP1	AJ006998.2	-0.290818232	0.03
CTSW	RP11-288L9.4	-0.290928273	0.03
TUBA8	RP11-344B5.2	0.291393559	0.03
LMNA	RP5-1114G22.2	-0.291080951	0.03
ITPR3	LOC338758	0.280827516	0.04
PPP2CA	RP11-344B5.2	-0.286342891	0.04
HIF1A	LOC338758	0.274680685	0.06
GZMB	H19	-0.273891597	0.06
CTSW	RP5-902P8.10	-0.272799104	0.06
TNFSF10	XXbac-B33L19.4	0.273809213	0.06
CTSW	AC004920.3	-0.27026871	0.07
TNFSF10	RP11-288L9.4	0.268900958	0.07
LMNA	LOC338758	0.264152448	0.08

TUBA8	AJ006998.2	0.263299357	0.08
CTSW	H19	-0.265829463	0.08
GABARAPL1	LOC338758	0.258847306	0.1
TNFSF10	RP5-1114G22.2	0.254783528	0.11
FASLG	AJ006998.2	-0.253566876	0.12
TNFSF10	AC004485.3	0.24773392	0.14
TP53AIP1	LOC338758	0.242635838	0.17
TNFSF10	AC004920.3	0.237471605	0.21
CTSW	AJ006998.2	-0.236567745	0.21
FASLG	H19	-0.237238376	0.21
CTSW	RP11-247A12.1	-0.235285999	0.21
TNFSF10	RP11-452C8.1	0.23212235	0.21
CTSW	RP11-565A3.1	-0.236376752	0.21
CTSW	RP5-1114G22.2	-0.234569164	0.21
CTSW	XXbac-B33L19.4	-0.235597725	0.21
RRAGB	RP11-344B5.2	-0.220360268	0.32
PPP2CA	LOC338758	0.209757278	0.45
JUN	RP11-344B5.2	-0.208086408	0.46
TNFSF10	RP11-565A3.1	0.203142449	0.53
TNFSF10	RP11-247A12.1	0.200112178	0.57
CTSW	RP11-452C8.1	-0.199444016	0.57
JUN	RP11-565A3.1	-0.197623948	0.58
GABARAPL1	RP5-1114G22.2	-0.192089005	0.67
TNFSF10	H19	0.19035533	0.69
CAPN2	LOC338758	0.185576796	0.77
FASLG	LOC338758	0.184981626	0.77
ATG2B	LOC338758	0.084819043	1
CASP8	LOC338758	0.125887931	1
CTSW	LOC338758	0.022044257	1
DFFB	LOC338758	0.00698208	1
GZMB	LOC338758	0.157876476	1
MAPK9	LOC338758	0.075791863	1
MTMR4	LOC338758	0.111951943	1
NGF	LOC338758	-0.120552217	1
PIK3R2	LOC338758	-0.079015462	1
PRF1	LOC338758	0.079738902	1
PRKACA	LOC338758	-0.02914328	1
RRAGB	LOC338758	0.018118573	1
RRAS2	LOC338758	0.134532976	1
TNFSF10	LOC338758	-0.154210335	1
TUBA8	LOC338758	-0.147302905	1
JUN	AC004485.3	-0.163760948	1
JUN	AC004920.3	-0.081917805	1
JUN	AJ006998.2	-0.145049123	1
TNFSF10	AJ006998.2	0.10523839	1
JUN	H19	-0.122644924	1
JUN	RP11-247A12.1	-0.141830429	1
JUN	RP11-288L9.4	-0.154536275	1
JUN	RP11-452C8.1	-0.165445141	1
JUN	RP5-1114G22.2	-0.078452402	1
JUN	RP5-902P8.10	-0.162091759	1
JUN	XXbac-B33L19.4	-0.165821912	1