

**Table S1 The list of mitophagy-related genes**

<b>Id</b>
AMBRA1
ARFIP2
ATF4
ATG12
ATG13
ATG14
ATG2A
ATG2B
ATG3
ATG4B
ATG4D
ATG5
ATG7
ATG9A
ATG9B
ATP13A2
ATP5IF1
BCL2L1
BECN

BECN1
BNIP3
BNIP3L
CAMKK2
CDC37
CERS1
CISD2
PTGS2
CSNK2A
CSNK2A1
CSNK2A2
CSNK2B
CTSK
CTTN
DNM1L
EIF2AK3
FBXL4
FBXO7
FBXW7
FIS1
FOXO3

FUNDC1
FUNDC2
FZD5
GABARAP
GABARAPL1
GABARAPL2
GABARAPL3
GBA
GSK3A
HAX1
HDAC6
HIF1A
HK2
HRAS
HTRA2
HTT
HUWE1
JNK
JUN
KRAS
LRBA

MAP1LC
MAP1LC3A
MAP1LC3B
MAP1LC3B2
MAP1LC3C
MARK2
MFN1
MFN2
MITF
MRAS
MTERF3
MUL1
NRAS
OGT
OPTN
PARK2
PARK7
PARL
PGAM5
PHB2
PINK1

PRKN
RAB7A
RAB7B
RB1CC1
RELA
RETREG1
RHOT1
RHOT2
RIMOC1
RNF41
RP-L40e
RPS27A
RP-S27Ae
RRAS
RRAS2
SLC25A4
SLC25A46
SLC25A5
SNX30
SNX7
SP1

SPATA18
SPATA33
SQSTM1
SRC
SREBF1
SREBF2
TAFAZZIN
TBK1
TFE3
TIGAR
TOMM20
TOMM22
TOMM40
TOMM5
TOMM6
TOMM7
TOMM70
TP53
TSC2
TSPO
UBA52

UBB
UBC
ULK1
ULK2
USP30
USP36
VDAC1
VPS13C
VPS13D
WDR45
WDR45B
WIPI1
WIPI2

**Table S2. The list of primer sequences**

<b>01</b>	MRAS FORWARD	GGAAGATCACCAGGGAGC
<b>02</b>	MRAS REVERSE	ACGAGGTCATGGAAGGCTT
<b>03</b>	RAB7B FORWARD	ATGTGGTGCAAGCGTTTGA
<b>04</b>	RAB7B REVERSE	CTTGACTGGTCTGGCGAGA
<b>05</b>	RETREG1 FORWARD	CTGTTCTGGTTCCTTGCATT
<b>06</b>	RETREG1 REVERSE	TTCACTGAGGCTTCTCCACA

**Table S3. The results of the Cmap dataset**

<b>Score</b>	<b>ID</b>	<b>Name</b>	<b>Description</b>	<b>MOA</b>
-98.01	BRD-K80527266	triacsin-c	Adrenergic receptor antagonist	Adrenergic receptor antagonist
-98.03	BRD-U44618005	WH-4023	SRC inhibitor	SRC inhibitor
-98.03	BRD-K83322645	L-693403	Sigma receptor agonist	Sigma receptor agonist, Sigma receptor antagonist
-98.06	BRD-A35338386	NECA	Adenosine receptor agonist	Adenosine receptor agonist
-98.13	BRD-A23290232	westcort	Glucocorticoid receptor agonist	Glucocorticoid receptor agonist
-98.2	BRD-A18043272	phensuximide	Succinimide antiepileptic	Succinimide antiepileptic
-98.24	BRD-K99451608	lopinavir	HIV protease inhibitor	HIV protease inhibitor
-98.27	BRD-K76810206	nicergoline	Adrenergic receptor antagonist	Adrenergic receptor antagonist
-98.27	BRD-A92537424	danazol	Estrogen receptor antagonist	Estrogen receptor antagonist, Progesterone receptor agonist
-98.31	BRD-U97083655	teicoplanin	Bacterial cell wall synthesis inhibitor	Bacterial cell wall synthesis inhibitor
-98.36	BRD-K96670504	lonidamine	Glucokinase inhibitor	Glucokinase inhibitor
-98.38	BRD-K74514084	pazopanib	KIT inhibitor	KIT inhibitor, PDGFR receptor inhibitor, VEGFR inhibitor
-98.38	BRD-A55815733	phylloquinone	Vitamin K	Vitamin K, Gamma carboxylase enzyme
-98.41	BRD-K73838513	cinacalcet	Calcium channel activator	Calcium channel activator
-98.53	BRD-A53952395	prilocaine	Local anesthetic	Local anesthetic
-98.56	BRD-K59633790	VU-0420363-1	SARS coronavirus 3C-like protease inhibitor	SARS coronavirus 3C-like protease inhibitor
-98.66	BRD-K26015241	ODQ	Guanylyl cyclase inhibitor	Guanylyl cyclase inhibitor



-98.7	BRD-A91555231	norepinephrine	Adrenergic receptor agonist	Adrenergic receptor agonist
-98.71	BRD-K83963101	MLN-8054	Aurora kinase inhibitor	Aurora kinase inhibitor, Mitotic inhibitor, Protein kinase inhibitor
-98.73	BRD-K47943470	tyrphostin-51	EGFR inhibitor	EGFR inhibitor
-98.75	BRD-K77641333	naphazoline	Adrenergic receptor agonist	Adrenergic receptor agonist
-98.77	BRD-K84085265	CG-930	JNK inhibitor	JNK inhibitor
-98.81	BRD-A09472452	flecainide	Sodium channel blocker	Sodium channel blocker
-98.83	BRD-K62363391	dapsone	Bacterial antifolate	Bacterial antifolate
-98.87	BRD-A14985772	ascorbyl-palmitate	antioxidant	antioxidant
-98.87	BRD-K48722833	iloperidone	Dopamine receptor antagonist	Dopamine receptor antagonist, Serotonin receptor antagonist
-98.87	BRD-K97509413	coumestrol	Estrogen receptor agonist	Estrogen receptor agonist
-98.89	BRD-K68095457	palmitoylethanolamide	Cannabinoid receptor agonist	Cannabinoid receptor agonist
-98.91	BRD-K90885812	propantheline	Acetylcholine receptor antagonist	Acetylcholine receptor antagonist
-98.94	BRD-K04146668	GW-441756	Growth factor receptor inhibitor	Growth factor receptor inhibitor
-98.97	BRD-K08703257	3-amino-benzamide	PARP inhibitor	PARP inhibitor
-99.01	BRD-K90864987	cobalt(II)-chloride	HSP inducer	HSP inducer
-99.01	BRD-K54790157	trioxsalen	DNA synthesis inhibitor	DNA synthesis inhibitor
-99.05	BRD-K01624546	docosatrienoic-acid	LTB4 inhibitor	LTB4 inhibitor
-99.06	BRD-K01902415	pirinixic-acid	PPAR receptor agonist	PPAR receptor agonist
-99.06	BRD-K80738081	resveratrol	Cytochrome P450 inhibitor	Cytochrome P450 inhibitor, SIRT activator

-99.08	BRD-K49456190	prima-1-met	thioredoxin inhibitor	thioredoxin inhibitor
-99.08	BRD-K00675675	CL-82198	Metalloproteinase inhibitor	Metalloproteinase inhibitor
-99.12	BRD-A49172652	lansoprazole	ATPase inhibitor	ATPase inhibitor
-99.14	BRD-K09436313	prostaglandin	Prostanoid receptor antagonist	Prostanoid receptor antagonist
-99.19	BRD-K33204703	AG-370	PDGFR receptor inhibitor	PDGFR receptor inhibitor
-99.26	BRD-K63195589	tipifarnib	Farnesyltransferase inhibitor	Farnesyltransferase inhibitor
-99.3	BRD-K67445247	fluorofamide	Urease inhibitor	Urease inhibitor
-99.31	BRD-K70241288	L-692585	Growth hormone releasing peptide ligand agonist	Growth hormone releasing peptide ligand agonist
-99.33	BRD-K06234293	LY-364947	TGF beta receptor inhibitor	TGF beta receptor inhibitor, p38 MAPK inhibitor
-99.37	BRD-K32795028	1-benzylimidazole	Thromboxane synthase inhibitor	Thromboxane synthase inhibitor
-99.37	BRD-K59650319	YM-298198	Glutamate receptor antagonist	Glutamate receptor antagonist
-99.4	BRD-K43164539	cholic-acid	Bile acid	Bile acid
-99.44	BRD-K46068882	eugenitol	Bacterial quorum sensing inhibitor	Bacterial quorum sensing inhibitor, Chromone, Monoamine oxidase inhibitor, Androgen receptor antagonist
-99.47	BRD-K19525698	ozagrel	Thromboxane synthase inhibitor	Thromboxane synthase inhibitor
-99.47	BRD-A44008656	doxylamine	Histamine receptor antagonist	Histamine receptor antagonist
-99.47	BRD-K48692744	NU-1025	PARP inhibitor	PARP inhibitor, DNA dependent protein kinase inhibitor
-99.58	BRD-K64785675	TG100-115	-666	-666
-99.58	BRD-K01192156	tyrphostin-AG-112	Protein tyrosine kinase inhibitor	Protein tyrosine kinase inhibitor
-99.58	BRD-K60770992	pergolide	Dopamine receptor agonist	Dopamine receptor agonist

-99.58	BRD-A31800922	procyclidine	Acetylcholine receptor antagonist	Acetylcholine receptor antagonist
-99.58	BRD-K05673000	dicloxacillin	Bacterial cell wall synthesis inhibitor	Bacterial cell wall synthesis inhibitor
-99.58	BRD-K76205745	losartan	Angiotensin receptor antagonist	Angiotensin receptor antagonist
-99.61	BRD-A74500471	ethambutol	Bacterial cell wall synthesis inhibitor	Bacterial cell wall synthesis inhibitor
-99.61	BRD-K03670461	tyrphostin-AG-82	EGFR inhibitor	EGFR inhibitor
-99.61	BRD-K05395900	nicotine	Acetylcholine receptor agonist	Acetylcholine receptor agonist
-99.64	BRD-K14643723	4-(2-Amino-ethyl)-benzenesulfonamide	carbonic anhydrase inhibitor	carbonic anhydrase inhibitor
-99.65	BRD-K17349619	HLI-373	MDM inhibitor	MDM inhibitor
-99.65	BRD-A34255068	rolipram	Phosphodiesterase inhibitor	Phosphodiesterase inhibitor, Interleukin receptor antagonist
-99.67	BRD-A22143024	estropipate	Estrogen receptor agonist	Estrogen receptor agonist
-99.68	BRD-K33483813	actarit	Interleukin receptor agonist	Interleukin receptor agonist
-99.68	BRD-K08273968	griseofulvin	Tubulin inhibitor	Tubulin inhibitor
-99.72	BRD-K91696562	orantinib	FGFR inhibitor	FGFR inhibitor, VEGFR inhibitor, PDGFR receptor inhibitor
-99.72	BRD-K57926513	tyrphostin-AG-1295	PDGFR receptor inhibitor	PDGFR receptor inhibitor
-99.72	BRD-A06390036	hydroquinidine	Antiarrhythmic	Antiarrhythmic
-99.72	BRD-A48809242	IB-MECA	Adenosine receptor agonist	Adenosine receptor agonist
-99.72	BRD-A80793822	pemoline	Dopamine receptor agonist	Dopamine receptor agonist
-99.72	BRD-K98426715	tubacin	HDAC inhibitor	HDAC inhibitor
-99.72	BRD-K19416115	sitagliptin	Dipeptidyl peptidase inhibitor	Dipeptidyl peptidase inhibitor

-99.75	BRD-K37130656	rivaroxaban	Coagulation inhibitor	Coagulation inhibitor
-99.75	BRD-K08924299	palonosetron	Serotonin receptor antagonist	Serotonin receptor antagonist
-99.75	BRD-K55703048	latrepirdine	Glutamate receptor antagonist	Glutamate receptor antagonist
-99.75	BRD-K48923948	BMS-641988	Androgen receptor antagonist	Androgen receptor antagonist
-99.75	BRD-K54314721	zolmitriptan	Serotonin receptor agonist	Serotonin receptor agonist
-99.75	BRD-K09859624	methantheline	Acetylcholine receptor antagonist	Acetylcholine receptor antagonist
-99.75	BRD-A24228527	ofloxacin	Bacterial DNA gyrase inhibitor	Bacterial DNA gyrase inhibitor
-99.79	BRD-K50720187	flupirtine	Glutamate receptor antagonist	Glutamate receptor antagonist
-99.79	BRD-K30570479	VU-0400195-3	Glutamate receptor modulator	Glutamate receptor modulator
-99.79	BRD-A73680854	PT-630	Dipeptidyl peptidase inhibitor	Dipeptidyl peptidase inhibitor
-99.79	BRD-K93095519	SJ-172550	MDM inhibitor	MDM inhibitor
-99.8	BRD-K97181089	amiloride	Sodium channel blocker	Sodium channel blocker
-99.82	BRD-K32107296	temozolomide	DNA alkylating agent	DNA alkylating agent
-99.82	BRD-A17428743	BW-723C86	Serotonin receptor agonist	Serotonin receptor agonist
-99.86	BRD-K37720887	SB-525334	TGF beta receptor inhibitor	TGF beta receptor inhibitor
-99.93	BRD-K01779529	fluoropyruvate	Pyruvate dehydrogenase kinase inhibitor	Pyruvate dehydrogenase kinase inhibitor
-100	BRD-A09533288	verapamil	Calcium channel blocker	Calcium channel blocker
-98.06	BRD-A01787639	naftopidil	Adrenergic receptor antagonist	Adrenergic receptor antagonist
-98.06	BRD-K17868609	BRL-54443	Serotonin receptor agonist	Serotonin receptor agonist
-98.17	BRD-K43764301	dexketoprofen	Cyclooxygenase inhibitor	Cyclooxygenase inhibitor

-98.17	BRD-K08547377	irinotecan	Topoisomerase inhibitor	Topoisomerase inhibitor
-98.24	BRD-K55677650	CO-101244	Ionotropic glutamate receptor antagonist	Ionotropic glutamate receptor antagonist
-98.27	BRD-A48237631	mitomycin-c	DNA alkylating agent	DNA alkylating agent, DNA inhibitor, DNA synthesis inhibitor
-98.29	BRD-A59808129	guggulsterone	Cholesterol inhibitor	Cholesterol inhibitor, Estrogen receptor agonist, FXR antagonist, IKK inhibitor, Pregnane X receptor agonist, Progesterone receptor agonist
-98.32	BRD-K53913732	SB-408124	Orexin receptor antagonist	Orexin receptor antagonist
-98.41	BRD-K48722833	iloperidone	Dopamine receptor antagonist	Dopamine receptor antagonist, Serotonin receptor antagonist
-98.45	BRD-K17823458	danoprevir	HCV inhibitor	HCV inhibitor
-98.47	BRD-K60476892	YC-1	Guanylyl cyclase activator	Guanylyl cyclase activator
-98.56	BRD-K91623615	ABT-751	Tubulin inhibitor	Tubulin inhibitor
-98.63	BRD-M30523314	vinorelbine	Tubulin inhibitor	Tubulin inhibitor
-98.63	BRD-M07438658	lapatinib	EGFR inhibitor	EGFR inhibitor, ErbB2 inhibitor
-98.66	BRD-A75552914	isoxicam	Cyclooxygenase inhibitor	Cyclooxygenase inhibitor
-98.73	BRD-A90515964	guaifenesin	Expectorant	Expectorant
-98.77	BRD-A65280694	molindone	Dopamine receptor antagonist	Dopamine receptor antagonist
-98.84	BRD-K52751261	TAK-715	p38 MAPK inhibitor	p38 MAPK inhibitor
-98.87	BRD-K96354014	nifedipine	Calcium channel blocker	Calcium channel blocker
-98.89	BRD-K95655893	MAZ-51	VEGFR inhibitor	VEGFR inhibitor

-98.91	BRD-A61858259	CAY-10415	Insulin sensitizer	Insulin sensitizer
-98.98	BRD-K89687904	PKCbeta-inhibitor	PKC inhibitor	PKC inhibitor
-99	BRD-K39569857	avrainvillamide-analog-3	nucleophosmin inhibitor	nucleophosmin inhibitor
-99	BRD-K87932577	CDK1-5-inhibitor	CDK inhibitor	CDK inhibitor, Glycogen synthase kinase inhibitor
-99.01	BRD-K77625572	etomoxir	Carnitine palmitoyltransferase inhibitor	Carnitine palmitoyltransferase inhibitor
-99.01	BRD-K73824630	skatole	Thrombin inhibitor	Thrombin inhibitor
-99.01	BRD-K99411983	lumicolchicine	Colchicine isomer, non-binder of microtubules	Colchicine isomer, non-binder of microtubules
-99.04	BRD-K62012036	acitretin	Retinoid receptor agonist	Retinoid receptor agonist
-99.08	BRD-K43330982	JTE-013	Lysophospholipid receptor antagonist	Lysophospholipid receptor antagonist
-99.15	BRD-K70881766	solanine	Acetylcholinesterase inhibitor	Acetylcholinesterase inhibitor
-99.19	BRD-K84085265	CG-930	JNK inhibitor	JNK inhibitor
-99.19	BRD-K01555864	dibenzoylmethane	Antineoplastic	Antineoplastic
-99.23	BRD-K11905747	spectinomycin	Bacterial 30S ribosomal subunit inhibitor	Bacterial 30S ribosomal subunit inhibitor
-99.26	BRD-K89210380	biotin	Vitamin B	Vitamin B
-99.33	BRD-K83837640	JNJ-26854165	HDAC inhibitor	HDAC inhibitor
-99.4	BRD-A65013509	oxybutynin	Acetylcholine receptor antagonist	Acetylcholine receptor antagonist
-99.44	BRD-K37516142	idebenone	Calcium channel modulator	Calcium channel modulator
-99.51	BRD-K54708045	nTZDpa	PPAR receptor agonist	PPAR receptor agonist
-99.51	BRD-K89348303	ramipril	ACE inhibitor	ACE inhibitor

-99.58	BRD-K32107296	temozolomide	DNA alkylating agent	DNA alkylating agent
-99.61	BRD-K59184148	SB-216763	Glycogen synthase kinase inhibitor	Glycogen synthase kinase inhibitor
-99.65	BRD-A80017228	bendroflumethiazide	Sodium/potassium/chloride transporter inhibitor	Sodium/potassium/chloride transporter inhibitor
-99.68	BRD-A77299732	salubrinal	Eukaryotic translation initiation factor inhibitor	Eukaryotic translation initiation factor inhibitor
-99.68	BRD-K93176058	AC-55649	Retinoid receptor agonist	Retinoid receptor agonist
-99.74	BRD-K98521173	desoxycortone	Mineralocorticoid receptor agonist	Mineralocorticoid receptor agonist
-99.79	BRD-M47937986	cefatrizine	Bacterial cell wall synthesis inhibitor	Bacterial cell wall synthesis inhibitor
-99.81	BRD-K55591206	epigallocatechin	Nitric oxide synthase inhibitor	Nitric oxide synthase inhibitor, Bacterial DNA gyrase inhibitor
-99.82	BRD-K51941867	LM-1685	Cyclooxygenase inhibitor	Cyclooxygenase inhibitor
-99.86	BRD-K94830329	ataluren	CFTR channel agonist	CFTR channel agonist, Dystrophin stimulant
-99.87	BRD-A34255068	rolipram	Phosphodiesterase inhibitor	Phosphodiesterase inhibitor, Interleukin receptor antagonist
-99.89	BRD-K35128472	2-aminopurine	Serine/threonine kinase inhibitor	Serine/threonine kinase inhibitor
-99.89	BRD-A67438293	treprostinil	Prostacyclin analog	Prostacyclin analog
-99.89	BRD-K00317371	RITA	MDM inhibitor	MDM inhibitor
-99.93	BRD-A80960055	celastrol	Anti-inflammatory	Anti-inflammatory, Antioxidant, NFkB pathway inhibitor, HSP inhibitor, Topoisomerase inhibitor