

Autophagy Modulators

Inhibitors

A23187	Increase in cytosolic Ca ^{2+1,2} Also activates ²⁸	10-2284
AICAR	Decreases Class III PI3K/Beclin binding ³	10-1092
Anisomycin	p38 MAPK activator ⁴	10-2056
Autogramin-2	Inhibits autophagy via targeting GRAMD1A ⁵⁸	10-4439
Bafilomycin A	V-ATPase inhibitor ^{5,6}	10-2060
BAY K8644	L-type Ca ²⁺ agonist ⁷	10-4518
Cepharanthine	Autophagosome-lysosome fusion inhibition ⁵⁹	10-5074
Chloroquine phosphate	Increases lysosomal pH ^{8,9}	10-2473
Cycloheximide	Protein synthesis inhibition/mTORC1 activation ¹⁰	10-1117
Forskolin	Adenylyl cyclase inhibitor ⁷	10-2073
Hydroxychloroquine sulfate	Increases lysosomal pH ⁸	10-1379
ISO-1	MIF inhibitor ¹¹	10-1185
LY-294002	PI3K inhibitor ¹²⁻¹⁴	10-2150
Manzamine A	Inhibits autophagy on pancreatic cancer cells	10-2675
3-Methyladenine	PI3K inhibitor ¹⁴	10-2686
Nocodazole	Autophagosome-lysosome fusion inhibition ¹⁵	10-2387
Pifithrin μ	HSP70 Inhibitor ¹⁶	10-1180
Rolipram	PDE4 inhibitor (increases cAMP) ⁷	10-1079
Salubrinal	ER stress inhibitor ^{17,18}	10-4517
Spautin-1	USP10/13 inhibitor ^{19,20}	10-1367
Taxol	Vps34/autophagosome maturation inhibition ²¹	10-2095
Thapsigargin	Autophagosome/lysosome fusion inhibition ^{22,2} Has also been shown to be an activator. ²⁸	10-2105
Vinblastine sulfate	Autophagosome/lysosome fusion inhibition ²³	10-2050
Wortmannin	PI3K inhibitor ¹²⁻¹⁴	10-2115
Xanthohumol	VCP/autophagosome maturation inhibition ²⁴	10-1188

Activators

17-AAG	HSP90 inhibitor ²⁵	10-1097
Amiodarone	Ca ²⁺ blocker/mTORC1 inhibition ²⁶	10-2468
Apicidin	HDAC inhibitor ²⁷	10-2057
AR7	Activates chaperone-mediated autophagy ⁵⁷	10-5515
Brefeldin A	Has been shown to both activate ²⁸ and inhibit ²⁹	10-1071
C-2 ceramide	Akt suppressor/enhances Beclin 1 expression ³⁰	10-1181
Capsaicin	p38 activation and ERK deactivation ³¹	10-2298
Dexamethasone	Increase of PML ³² /mitochondrial fragmentation ³³	10-1134
Dorsomorphin	Downregulation of Akt/mTOR pathway ³⁴	10-1029
Etoposide	AMPK activation ³⁵ Bcl-2 dissociation ³⁶	10-1123
FK866	NAD depletion ³⁷	10-1109
Geldanamycin	HSP90 inhibitor ^{38,39}	10-1084
Imatinib	Downregulation of Bcr-Abl ⁴⁰	10-1060
Itraconazole	Inhibits trafficking of cholesterol	10-2033
Metformin	STAT3 downregulation ⁴¹ AMPK activation ⁴²	10-2469
MG-132	Proteasome inhibitor ^{43,44}	10-1309
Minoxidil	K ⁺ ATP channel opener ⁴⁵	10-1214
Niclosamide	mTORC1 inhibitor ²⁶	10-2474
Niguldipine	Ca ²⁺ channel blocker ^{7,46}	10-1215
Nimodipine	Ca ²⁺ channel blocker ^{7,46}	10-1321
Nitrendipine	Ca ²⁺ channel blocker ^{7,46}	10-1216
NVP-BE2235	mTOR inhibitor ^{47,48}	10-2153
Pifithrin α	p53 inhibitor ⁴⁹	10-2480
Pimozide	5-HT and dopamine receptor antagonist ⁴⁶	10-2780
Rapamycin	mTORC1 inhibitor ^{50,7}	10-1104
Rottlerin	mTORC1 inhibitor ²⁶	10-1341
SB-216763	GSK-3 inhibitor ^{51,52}	10-2338
SMER-28	Enhancer of autophagy ⁵³	10-1287
Sodium Valproate	Decreases IP3 levels ⁵⁴	10-1009
Tamoxifen	Increases ceramide levels ^{55,56}	10-1256
Tunicamycin	ER stress ²⁸	10-2111
Verapamil	Ca ²⁺ channel blocker ⁷	10-1111

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