Small Molecules

Bafilomycin A1

Inhibits autophagy and vacuolar H+-ATPase (V-ATPase)

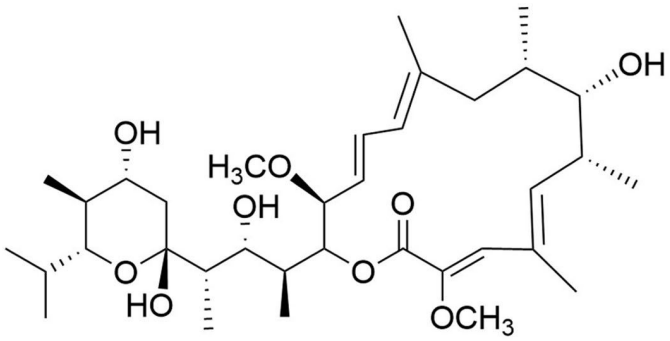
Catalog # 74242

500 µg

STEMCELL™ TECHNOLOGIES
Scientists Helping Scientists™ | WWW.STEMCELL.COM
TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713
INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM
FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

Product Description

Bafilomycin A1 is a macrolide antibiotic drug and autophagy inhibitor. It prevents the acidification of autophagosomes via the inhibition of vacuolar H+-ATPase (V-ATPase; Klionsky et al.).

Molecular Name:	Bafilomycin A1
Alternative Names:	NSC 381866
CAS Number:	88899-55-2
Chemical Formula:	$C_{35}H_{58}O_9$
Molecular Weight:	622.8 g/mol
Purity:	≥ 95%
Chemical Name:	(5E,7R,8S,9S,11E,13E,15S,16R)-16-[(2S,3R,4S)-4-[(2R,4R,5S,6R)-2,4-dihydroxy-5-methyl-6-(propan-2-yl)oxan-2-yl]-3-hydroxypentan-2-yl]-8-hydroxy-3,15-dimethoxy-5,7,9,11-tetramethyl-1-oxacyclohexadeca-3,5,11,13-tetraen-2-one
Structure:	

Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 8 mM · Absolute ethanol ≤ 8 mM For example, to prepare a 5 mM stock solution in DMSO, resuspend 0.5 mg in 161 µL of DMSO. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

MAINTENANCE AND SELF-RENEWAL
· Inhibits the proteolytic degradation associated with autophagy in human mesenchymal stem cells (Oliver et al.).
CANCER RESEARCH
· At low concentrations, it inhibits autophagy and promotes apoptotic cell death in pediatric B cell acute lymphoblastic leukemia (B-ALL) cells (Yuan et al.).

References

Klionsky DJ et al. (2008) Does bafilomycin A 1 block the fusion of autophagosomes with lysosomes? Autophagy 4(7): 849–50.
Oliver L et al. (2012) Basal autophagy decreased during the differentiation of human adult mesenchymal stem cells. Stem Cells Dev 21(15): 2779–88.
Yuan N et al. (2015) Bafilomycin A1 targets both autophagy and apoptosis pathways in pediatric B-cell acute lymphoblastic leukemia. Haematologica 100(3): 345–56.

Related Small Molecules

For a complete list of small molecules available from STEMCELL Technologies, visit www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

This product is hazardous. Please refer to the Safety Data Sheet (SDS).