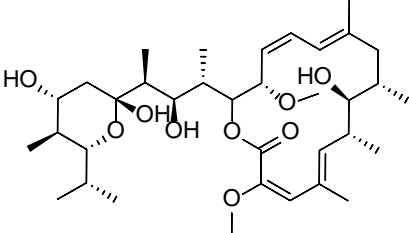


Product data sheet



MedKoo Cat#: 329893 Name: Bafilomycin A1 CAS#: 88899-55-2 Chemical Formula: C ₃₅ H ₅₈ O ₉ Exact Mass: 622.4081 Molecular Weight: 622.84		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Bafilomycin A1, also known as NSC 381866, is a selective, reversible inhibitor of vacuolar H⁺-ATPases (V-ATPases), blocking these proton pumps in mammalian, plant, or fungal cells with an IC₅₀ value in the 4-400 nM range. Bafilomycin A1 triggers proliferative potential of senescent cancer cells in vitro and in NOD/SCID mice. Bafilomycin A1 induces caspase-independent cell death in hepatocellular carcinoma cells via targeting of autophagy and MAPK pathways.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	29.0	46.56
Methanol	5.0	8.03

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.61 mL	8.03 mL	16.06 mL
5 mM	0.32 mL	1.61 mL	3.21 mL
10 mM	0.16 mL	0.80 mL	1.61 mL
50 mM	0.03 mL	0.16 mL	0.32 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Yuan N, Song L, Zhang S, Lin W, Cao Y, Xu F, Fang Y, Wang Z, Zhang H, Li X, Wang Z, Cai J, Wang J, Zhang Y, Mao X, Zhao W, Hu S, Chen S, Wang J. Bafilomycin A1 targets both autophagy and apoptosis pathways in pediatric B-cell acute lymphoblastic leukemia. *Haematologica*. 2015 Mar;100(3):345-56. doi: 10.3324/haematol.2014.113324. Epub 2014 Dec 15. PMID: 25512644; PMCID: PMC4349273.

In vivo study

1. Yuan N, Song L, Zhang S, Lin W, Cao Y, Xu F, Fang Y, Wang Z, Zhang H, Li X, Wang Z, Cai J, Wang J, Zhang Y, Mao X, Zhao W, Hu S, Chen S, Wang J. Bafilomycin A1 targets both autophagy and apoptosis pathways in pediatric B-cell acute lymphoblastic leukemia. *Haematologica*. 2015 Mar;100(3):345-56. doi: 10.3324/haematol.2014.113324. Epub 2014 Dec 15. PMID: 25512644; PMCID: PMC4349273.

7. Bioactivity

Biological target: Bafilomycin A1 is a vacuolar H⁺-ATPase inhibitor with an IC₅₀ of 0.44 nM.

Product data sheet



In vitro activity

697, Nalm-6, RS4;11, NB4, HL-60, K562 and BV173 representing B-ALL (697, Nalm-6, RS4;11), acute myeloid leukemia (NB4, HL-60), and chronic myeloid leukemia (K562, BV173) cells were cultured in the presence of increasing concentrations of bafilomycin A1 (0 nM, 0.5 nM, 1 nM). Cell proliferation was measured using an MTT assay. The results showed that various concentrations of bafilomycin A1 profoundly inhibited the growth of three pediatric B-ALL cell types in culture (Figure 1A). A flow cytometric assay also revealed that bafilomycin A1 effectively inhibited cell division of the three pediatric B-ALL cell lines (Figure 1B).

Reference: Haematologica. 2015 Mar;100(3):345-56. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4349273/>

In vivo activity

To study the effect of bafilomycin A1 in vivo, the ability of the compound to suppress and kill B-ALL cells was examined in the mouse model of pediatric B-ALL. Bafilomycin A1 extended survival in the bafilomycin A1-treated B-ALL mice with advanced disease compared with control mice, as shown by a Kaplan-Meier curve (Figure 4A). The average time from diagnosis to death was 30.9 days for the vehicle-treated disease control mice (range 20–39 days; n=20) versus 37.2 days for the mice treated with 0.1 mg/kg bafilomycin (range 30–46 days; n=15; P<0.001). More significantly, 1 mg/kg bafilomycin A1 increased survival with a median survival of 42.5 days (range 30–48 days; n=15; P<0.001). (Figure 4A).

Reference: Haematologica. 2015 Mar;100(3):345-56. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4349273/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.