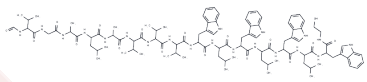
Data Sheet (Cat.No.T36439)

TargetMol

Gramicidin A

Chemical Properties



CAS No. : 11029-61-1

Formula: C99H140N20O17

Molecular Weight: 1882.29

Storage: Store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Gramicidin A is a peptide antibiotic isolated from B. brevis.Gramicidin A is a highly hydrophobic channel-forming ion carrier that forms monovalent cation-permeable channels in artificial membranes.Gramicidin A induces the degradation of hypoxia-inducible factor 1 alpha (HIF-1 alpha) and reduces the growth of a mouse xenograft model of human renal cell carcinoma. Gramicidin A has antibacterial, antimalarial and hemolytic activities.
Targets(IC50)	HIF/HIF Prolyl-Hydroxylase,Antibacterial,HIF,Antibiotic,Parasite
In vitro	Gramicidin A (0.1 nM-10 μM; 72 h) reduces the viability of RCC cell lines and affects cell viability comparable to Monensin.[2] Gramicidin A (1 and 10 μM, 48 or 72 h) induces nonapoptotic cell death in RCC cells.[2] Gramicidin A (0-10 μM, 24 h) depletes cellular energy and induces metabolic dysfunction in RCC cells.[2] Gramicidin A (0-1 μM, 24-72 h) reduces HIF-1α and HIF-2α protein expression and reduces HIF transcriptional activity and target gene expression (24 h).[3]
In vivo	Gramicidin A (0.11 mg/kg; intratumoral injection; 2 weeks; 14 days) inhibits the growth of RCC tumor xenografts with an average tumor mass reduction of approximately 40% without significant toxicity.[2] Gramicidin A (0.22 mg/kg; intratumoral injection; 3 weeks; 26 days) inhibits the growth and angiogenesis of VHL-expressing RCC tumor xenografts.[3]

Solubility Information

Solubility	DMSO: Soluble H2O: Slightly soluble Ethanol: Soluble (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.5313 mL	2.6563 mL	5.3127 mL
5 mM	0.1063 mL	0.5313 mL	1.0625 mL
10 mM	0.0531 mL	0.2656 mL	0.5313 mL
50 mM	0.0106 mL	0.0531 mL	0.1063 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Takada Y, et al. Discovery of gramicidin A analogues with altered activities by multidimensional screening of a one-bead-one-compound library. Nat Commun. 2020;11(1):4935.
David JM, et al. Gramicidin A induces metabolic dysfunction and energy depletion leading to cell death in renal cell carcinoma cells. Mol Cancer Ther. 2013;12(11):2296-2307.
David JM, et al. Gramicidin A blocks tumor growth and angiogenesis through inhibition of hypoxia-inducible factor in renal cell carcinoma. Mol Cancer Ther. 2014;13(4):788-799.