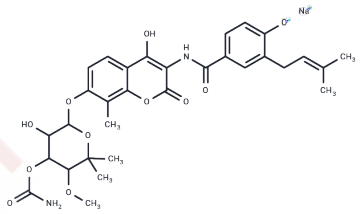
Data Sheet (Cat.No.T0974)

TargetMol

Novobiocin Sodium

Chemical Properties



CAS No. : 1476-53-5

Formula: C31H35N2NaO11

Molecular Weight: 634.61

Appearance: no data available

Storage: store at low temperature
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Novobiocin Sodium (Albamycinsodium) binds to DNA gyrase and blocks adenosine triphosphatase (ATPase) activity. Novobiocin sodium is an antibiotic compound derived from Streptomyces niveus. It has a chemical structure similar to coumarin.
Targets(IC50)	Antibacterial,Antibiotic,ABC Transporter,Autophagy,DNA gyrase,Potassium Channel, Topoisomerase
In vitro	Novobiocin also interacts with Hsp90, altering the affinity of the chaperone for geldanamycin and radicicol and causing in vitro and in vivo depletion of key regulatory Hsp90-dependent kinases including v-Src, Raf-1, and p185(ErbB2). Novobiocin interferes with association of the co-chaperones Hsc70 and p23 with Hsp90. [1] Novobiocin specifically inhibits the maturation of the heme-regulated eIF2alpha kinase (HRI) in a concentration-dependent manner. Novobiocin induces the dissociation of Hsp90 and Cdc37 from immature HRI, while the Hsp90 cochaperones p23, FKBP52, and protein phosphatase 5 remained associated with immature HRI. [2] Novobiocin causes morphological and biochemical changes which lead to induction of cell death exhibiting characteristic features of metazoan apoptosis. [3] Novobiocin, a HSP90 inhibitor, could decrease the expression of SMYD3 and dose dependently inhibit the proliferation and migration of MDA-MB-231 human breast cancer cells. Novobiocin can inhibit the migration of breast cancer cells and such event may involve the downregulation of SMYD3. [4] Novobiocin, an aminocoumarin antibiotic, interferes with heat shock protein 90 and hypoxia inducible factor dependent gene expression and thus compromises cell survival. Novobiocin (500 磛) results in a significant increase of [Ca(2+)]i, decrease of forward scatter, increase of annexin-V-binding and enhances ceramide formation. Novobiocin stimulates eryptosis, an effect at least in part due to entry of extracellular Ca (2+) and formation of ceramide. [5]

Solubility Information

Solubility	DMSO: 40 mg/mL (63.03 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5758 mL	7.8789 mL	15.7577 mL
5 mM	0.3152 mL	1.5758 mL	3.1515 mL
10 mM	0.1576 mL	0.7879 mL	1.5758 mL
50 mM	0.0315 mL	0.1576 mL	0.3152 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.

Reference

Marcu MG, et al. J Biol Chem, 2000, 275(47), 37181-37186.
Yun BG, et al. Biochemistry,2004, 43(25), 8217-8229.
Singh G, et al. Mol Biochem Parasitol,2005, 141(1), 57-69.
Luo XG, et al. IUBMB Life,2010, 62(3), 194-199.
Lupescu A, et al. Cell Physiol Biochem,2014, 33(3), 670-680.