Product Data Sheet

Product Name: Framycetin (Fradiomycin B)
Cat. No.: GC30802

Chemical Properties

Cas. No.	119-04-0		
SMILES	N[C@@H](C[C@H]1N)[C@@]([C@@H]([C@H]1O)O[C@@](O[C@H](CO)[C@H]2O[C@@]([C@@H]([C@@H](O)[C@@H]3O)N)([H])O[C@H]3CN)([H])[C@@H]2O)([H])O[C@H]([C@@H]([C@@H](O)[C@@H]4O)N)O[C@@H]4CN		
Formula	$C_{23}H_{46}N_6O_{13}$	M.Wt	614.64
Solubility	50 mg/mL in Water(Need ultrasonic); 25 mg/mL in DMSO(Need ultrasonic).	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Framycetin (Fradiomycin B)		

Background

Framycetin (Fradiomycin B; Neomycin B) is an aminoglycoside antibiotic. It inhibits hammerhead ribozyme with a Ki of 13.5 μM.

Neomycin B is used clinically to treat hepatic encephalopathy (by reducing ammonium levels in the gut) and enteropathogenic Escherichia coli infections. Neomycin B targets the bacterial and human ribosome and affect translation. Addition of neomycin B, to an HCC cell line selectively inhibits production of the mature miRNA, boosts a downstream protein, and inhibits invasion[2]. Neomycin B interacts with various target RNAs that have no primary sequence homology. This means that the drug binds to a structural rather than a sequence motif of the RNA. Its primary cognate target is the decoding site of the 16S rRNA, but it also binds to the Rev-responsive element in HIV-1, group I introns, and the hammerhead ribozyme, and thus inhibits their biological function[3]. The aminoglycoside antibiotic neomycin B induces misreading of the genetic code

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

during translation and inhibits several ribozymes. The ribosomal target site of neomycin B is the 16 S rRNA 1400 to 1500 region, which has been clearly demonstrated by dissecting this domain from a small RNA of 27 nucleotides. This small subdomain of the 16 S rRNA is protected from chemical modification by neomycin atthe same positions as in the context of the 30 S subunit[4].

[1]. Stage TK, et al. Inhibition of the hammerhead ribozyme by neomycin. RNA. 1995 Mar;1(1):95-101. [2]. Childs-Disney JL, et al. Small Molecule Targeting of a MicroRNA Associated with Hepatocellular Carcinoma. ACS Chem Biol. 2016 Feb 19;11(2):375-80. [3]. Stampfl S, et al. Monovalent ion dependence of neomycin B binding to an RNA aptamer characterized by spectroscopic methods. Chembiochem. 2007 Jul 9;8(10):1137-45. [4]. Hoch I, et al. Antibiotic inhibition of RNA catalysis: neomycin B binds to the catalytic core of the td group I intron displacing essential metal ions. J Mol Biol. 1998 Sep 25;282(3):557-69.

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA