

## Product Data Sheet

Product Name: Framycetin sulfate

Cat. No.: GC64757

### Chemical Properties

Cas. No. 4146-30-9

Formula C<sub>23</sub>H<sub>52</sub>N<sub>6</sub>O<sub>25</sub>S<sub>3</sub>

M.Wt 908.88

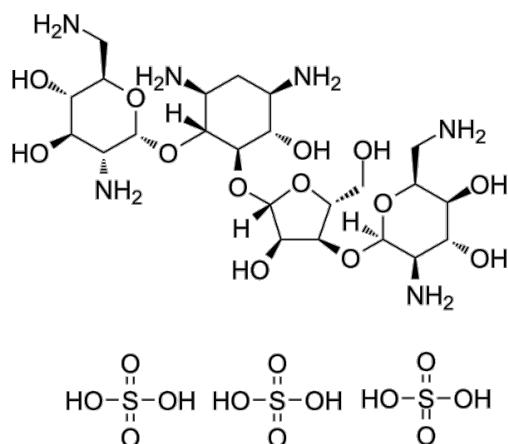
Solubility Water : 250 mg/mL (275.06 mM;  
Need ultrasonic)

Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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



### Background

Framycetin sulfate (Neomycin B sulfate), an aminoglycoside antibiotic, is a potent RNase P cleavage activity inhibitor with a  $K_i$  of 35  $\mu$ M. Framycetin sulfate competes for specific divalent metal ion

**Caution: Product has not been fully validated for medical applications. For research use only.**

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binding sites in RNase P RNA. Framycetin sulfate inhibits hammerhead ribozyme with a  $K_i$  of 13.5  $\mu$ M. Framycetin sulfate, a 5"-azido neomycin B precursor, binds the Drosha site in miR-525 and is used for hepatic encephalopathy and enteropathogenic E. coli infections[1][2].

The inhibition of RNase P RNA cleavage by Framycetin sulfate (Neomycin Bsulfate; Fradiomycin Bsulfate) is sensitive to pH and an increase in pH suppresses the inhibition in other systems[1]. Framycetin sulfate targets the bacterial and human ribosome and affect translation. 5"-azido neomycin B and Framycetin sulfate selectively inhibit production of the mature miRNA, boosts a downstream protein, and inhibits invasion in HCC cell line[2]. Framycetin sulfate 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]. Framycetin sulfate induces misreading of the genetic code during translation and inhibits several ribozymes. The ribosomal target site is the 16 S rRNA 1400 to 1500 region[4].

[1]. N E Mikkelsen, et al. Inhibition of RNase P RNA Cleavage by Aminoglycosides. Proc Natl Acad Sci U S A. 1999 May 25;96(11):6155-60.

[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.

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