



LKT Laboratories, Inc.

Neomycin Sulfate

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Product Information

Product ID N1755

CAS No. 1405-10-3

Chemical Name

Synonym

Formula $C_{23}H_{46}N_6O_{13} \cdot H_2SO_4$

Formula Wt. 908.9

Melting Point

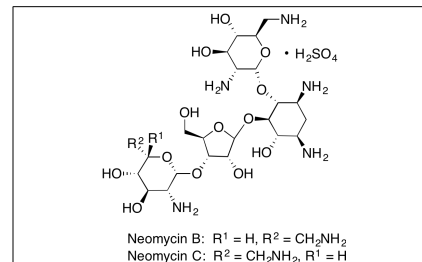
Purity $\geq 98\%$

Solubility Soluble in water (1 g/mL).

Store Temp Ambient

Ship Temp Ambient

Description Neomycin is a polycationic aminoglycoside antibiotic that exhibits antibacterial and neuromodulatory activities; it was originally found in species of *Streptomyces*. Neomycin binds to 23S rRNA, constraining tRNA in the P-site, inhibiting translocation and ribosomal recycling; together, this results in inhibition of protein synthesis. Neomycin B binds and inhibits bacterial RNase P and bacterial T box antiterminator RNA. Neomycin B inhibits mammalian RNA splicing as well. Neomycin also noncompetitively inhibits cation channels, including P2X receptors and transient receptor potential vanilloid receptor 1 (TRPV1) channels. Additionally, this compound inhibits Ca^{2+} influx, preventing presynaptic release of acetylcholine and norepinephrine in feline superior cervical ganglia.



Bulk quantities available upon request

Product ID	Size
N1755	1 g
N1755	5 g
N1755	10 g
N1755	25 g
N1755	100 g

References Wang L, Pulk A, Wasserman MR, et al. Allosteric control of the ribosome by small-molecule antibiotics. *Nat Struct Mol Biol.* 2012 Sep;19(9):957-63. PMID: 22902368.

Bongartz EV, Rettinger J, Hausmann R. Aminoglycoside block of P2X2 receptors heterologously expressed in *Xenopus laevis* oocytes. *Purinergic Signal.* 2010 Dec;6(4):393-403. PMID: 21437010.

Aukema KG, Chohan KK, Plourde GL, et al. Small molecule inhibitors of yeast pre-mRNA splicing. *ACS Chem Biol.* 2009 Sep 18;4(9):759-68. PMID: 19634919.

Anupam R, Denapoli L, Muchenditsi A, et al. Identification of neomycin B-binding site in T box antiterminator model RNA. *Bioorg Med Chem.* 2008 Apr 15;16(8):4466-70. PMID: 18329274.

Kawamoto SA, Sudhakar CG, Hatfield CL, et al. Studies on the mechanism of inhibition of bacterial ribonuclease P by aminoglycoside derivatives. *Nucleic Acids Res.* 2008 Feb;36(2):697-704. PMID: 18084035.

Raisinghani M, Premkumar LS. Block of native and cloned vanilloid receptor 1 (TRPV1) by aminoglycoside antibiotics. *Pain.* 2005 Jan;113(1-2):123-33. PMID: 15621372.

Wright JM, Collier B. The effects of neomycin upon transmitter release and action. *J Pharmacol Exp Ther.* 1977 Mar;200(3):576-87. PMID: 191590.

Caution: This product is intended for laboratory and research use only. It is not for human or drug use.