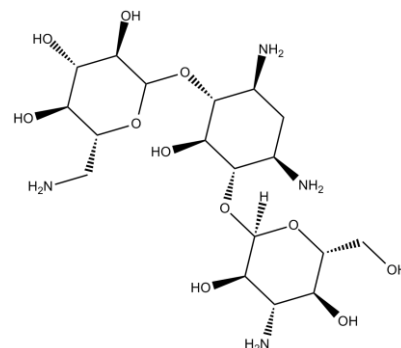


## Product Data Sheet

### Chemical Properties

<b>Product Name:</b>	Kanamycin A
<b>Cas No.:</b>	59-01-8
<b>M.Wt:</b>	484.5
<b>Formula:</b>	C <sub>18</sub> H <sub>36</sub> N <sub>4</sub> O <sub>11</sub>



<b>Chemical Name:</b>	O-3-amino-3-deoxy- α -D-glucopyranosyl-(1→6)-O-[6-amino-6-deoxy- α -D-glucopyranosyl-(1→4)]-2-deoxy-D-streptamine
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<b>Canonical SMILES:</b>	<chem>N[C@H]([C@H]1O)[C@H](O)[C@@H](CO)O[C@]1([H])O[C@H]([C@H]2O)[C@H](N)C[C@H](N)[C@H]2OC3O[C@H](CN)[C@@H](O)[C@H](O)[C@H]3O</chem>
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<b>Solubility:</b>	Soluble in DMSO
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<b>Storage:</b>	Store at -20°C
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<b>General tips:</b>	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.
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<b>Shopping Condition:</b>	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request
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### Biological Activity

<b>Targets :</b>	Microbiology & Virology
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<b>Pathways:</b>	Antibiotic
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#### Description:

Kanamycin A is a broad spectrum antibiotic.

Kanamycin A was first isolated in 1957 by Hamao Umezawa from the bacterium *Streptomyces*

kanamyceticus.

**In vitro:** In previous study, kanamycin A was found to block a single cycle of translocation on the poly[U]-ribosome, carrying N-acetyl-diPhe-tRNA on the acceptor site and deacylated tRNA at the donor site. The GTPase reaction, catalyzed by EF-G and ribosomes, was not significantly affected by kanamycin A. The results with kanamycin A differed from those obtained with fusidic acid, suggesting that the mechanism of translocation inhibition might be different [1].

**In vivo:** Twelve male Lister hooded rats were conditioned to discriminate an 8 kHz tone and were subsequently injected subcutaneously with kanamycin A for 28 days. Results showed that only one rat was unaffected by the kanamycin A. The onset of hearing impairment generally occurred during the fourth week of kanamycin dosage although the earliest onset was towards the end of the second week. In most animals the hearing impairment progressed after kanamycin A was stopped and in one rat there was a latency between the end of drug dosage and onset of hearing impairment [2].

**Clinical trial:** Kanamycin A is an antibiotic used to treat severe bacterial infections and tuberculosis. It is not a first line treatment. Kanamycin A is recommended for short-term use only [3].

**Reference:**

[1] Misumi, M. and Tanaka, N. Mechanism of inhibition of translocation by kanamycin and viomycin: A comparative study with fusidic acid. *Biochemical and Biophysical Research Communications* 92(2), 647-654 (1980).

[2] Harpur ES, D'Arcy PF. The quantification of kanamycin ototoxicity in the rat using conditioned tone discrimination. *J Pharm Pharmacol.* 1975 Dec;27(12):907-13.

[3] [https://en.wikipedia.org/wiki/Kanamycin\\_A](https://en.wikipedia.org/wiki/Kanamycin_A)

## Caution

**FOR RESEARCH PURPOSES ONLY.**

**NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

*Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Short-term storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.*

**ApexBio Technology**

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