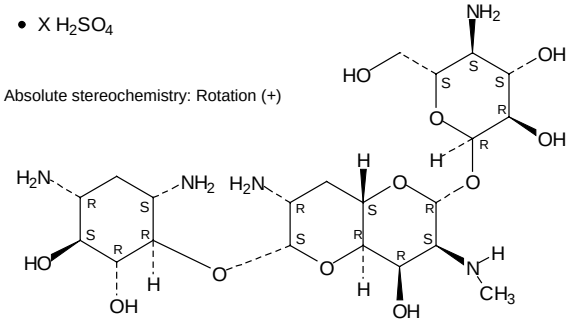
# ProductInformation

**APRAMYCIN SULFATE**
**Sigma Prod. No. A-2024**

**CAS NUMBER:** 65710-07-8

**PHYSICAL PROPERTIES:**

Appearance: Faint yellow powder
Molecular formula: $C_{21}H_{41}N_5O_{11} \bullet x\ H_2SO_4$
Molecular weight: 539.58 (free base)




**DESCRIPTION:**
Apramycin is an aminoglycoside antibiotic produced by a strain of *Streptomyces tenebrarius*. The compound is used as the sulfate in veterinary practice.[1,2]

**STABILITY / STORAGE AS SUPPLIED:**

Store desiccated at 2-8°C.

**SOLUBILITY / SOLUTION STABILITY:**

Aqueous solutions at 25 mg/mL are faint yellow. No solution stability data are currently available.

**APPLICATIONS:**

1. An oral composition of 20 g apramycin sulfate, 1 g pyridoxal HCl, 10 g sodium alginate, 10 g glycine and about 30 powdered apples were fed to calves and swine in order to treat diarrhea. Pyridoxal HCl was added to enhance the bactericidal activity of apramycin sulfate.[3]

2. Under the Federal Food, Drug and Cosmetics Act, feed containing 150 g apramycin per ton may be used to control colibacillosis.[4]

3. Apramycin is a potent inhibitor of protein synthesis in bacteria *in vivo* and *in vitro*. To a limited extent, it induces translation errors in cell-free systems from *Escherichia coli* supplemented with poly(U). Apramycin also inhibits the translocation step of protein synthesis *in vivo* (e.g., in protoplasts of *Bacillus megaterium*), and *in vitro* (e.g., in cell-free systems from *E. coli*). This may be the drug's primary inhibitory effect. [5]

**APPLICATIONS:** (continued)

4. Apramycin sulfate is an aminocyclitol antibiotic whose antibacterial activity has been tested in comparison with neomycin and streptomycin. Of the strains tested, 99% were sensitive to apramycin sulfate, compared to 93% for neomycin and 48% for streptomycin. *In vitro* resistance development to apramycin sulfate was gradual. [5]

**REFERENCES:**

1. *Martindale: The Extra Pharmacopeia*, 30th ed., edited by J. E. F. Reynolds, p. 118 (1993).
2. *Merck Index*, 11th ed., edited by S. Budavari, p. 119, No. 780 (1989).
3. L. Antal, et.al., *Hung. Teljes HU,* 61474 A2 930128, 9 pages (Hungarian), application no. 91-2351 910712.
4. *Fed. Regist.,* 47(71), 15770-15771, April 13 (1982).
5. R. Ryden and B. J. Moore, *J. Antimicrob. Chemother.,* 3(6), 609-613 (1977).