Specification

Apramycin Sulfate *BioChemica* A7682

Physical Description:	Solid
Product Code:	A7682
Product Name:	Apramycin Sulfate *BioChemica*
Specifications:	Assay (calc. on dried subst.): min. 550 U/mg Solubility (1 %; H_2O): clear Sulfated ash: max. 1.0 % Loss on drying: max. 14 %
Hazard pictograms	
WGK:	3
Storage:	2-8°C protected from light
Signal Word:	Danger
GHS Symbols:	GHS07 GHS08
H Phrases:	H315 H319 H360D
P Phrases:	P201 P305+P351+P338 P308+P313
Molecular Formula:	$C_{21}H_{41}N_5O_{11}$
M:	637.66 g/mol

AppliChem GmbH
Ottoweg 4 • D-64291 Darmstadt • Phone +49 6151 9357 0 • Fax +49 6151 9357 11 • **info.de@itwreagents.com** • **www.itwreagents.com**
CEO Joan Roget • Commerzbank Darmstadt • Bank 508 800 50 • Account 0186989900 IBAN DE24 5088 0050 0186 9899 00 • Swiftcode DRESDEFF508 • Finanzamt Darmstadt 07 228 16476 • Register court Darmstadt HRB Nr. 7340

Specification

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CAS:	65710-07-8
EINECS:	265-890-7
CS:	29419000

Comment

Apramycin is a aminocyclitol antibiotic and component of the nebramycin complex of *Streptomyces tenebrarius*. It is similar to the aminoglycoside antibiotics, but differs that much that it is not inactivated by aminoglycoside-inactivating enzymes. Apramycin is a strong inhibitor of the bacterial protein synthesis. It inhibits the translocation step in protein synthesis and leads to translation errors (1,2). Therefore, Apramycin interacts with the A-site-specific bases of the 16S rRNA. Under normal conditions, tRNA-molecules would bind at this site (2).In practice, Apramycin sulfate is used as a selection marker in cloning. The working concentration is 25 or 50 µg/ml (3-6). Stock solutions of the watersoluble substance are prepared as 1 mg/ml to 50 mg/ml and stored at -20°C.

Bibliography

(1)Perzynski, S. *et al.* (1979) *Eur. J. Biochem.* **99**, 623-628Effects of Apramycin, a Novel Aminoglycoside Antibiotic on Bacterial Protein Synthesis.(2)Woodcock, J. *et al.* (1991) *EMBO J.* **10**, 3099-3103Interaction of antibiotics with A- and P-site-specific bases in 16S ribosomal RNA.(3)Gehring, A.M. *et al.* (2001) *J. Bacteriol.* **183**, 5991-5996RNA Polymerase Sigma Factor That Blocks Morphological Differentiation by *Streptomyces coelicolor*.(4)Healy, F.G. *et al.* (2002) *J. Bacteriol.* **184**, 2019-2029Involvement of a Cytochrome P450 Monooxygenase in Thaxtomin A Biosynthesis.(5)Zhang, X. *et al.* (2003) *Appl. Environ. Microbiol.* **69**, 2201-2208Interstrain Inhibition in the Sweet Potato Pathogen *Streptomyces ipomoeae*.(6)Kodani, S. *et al.* (2004) *Proc. Natl. Acad. Sci. USA* **101**, 11448-11453The SapB morphogen is a lantibiotic-like peptide derived from the product of the developmental gene *ramS* in *Streptomyces coelicolor*.

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