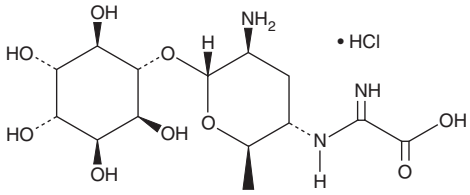
PRODUCT INFORMATION

Kasugamycin (hydrochloride)

Item No. 15322

CAS Registry No.: 19408-46-9
Formal Name: 3-O-[2-amino-4-[(carboxyiminomethyl)amino]-2,3,4,6-tetradeoxy-α-D-arabino-hexopyranosyl]-D-chiro-inositol, monohydrochloride
MF: $C_{14}H_{25}N_3O_9 \bullet HCl$
FW: 415.8
Purity: ≥70%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Kasugamycin (hydrochloride) is supplied as a crystalline solid. Aqueous solutions of kasugamycin (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of kasugamycin (hydrochloride) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Kasugamycin is an aminoglycoside that has been found in *S. kasugaensis* and has diverse biological activities.[1-3] It is active against *S. dysenteriae*, [1] Kasugamycin (1 kg/ha) reduces the severity of rice sheath blight induced by the plant pathogenic fungi *R. solani* and *C. janseana*-induced rice narrow brown leaf spot, as well as increases rice yield.[2] It also inhibits acidic mammalian chitinase (CHIA), also known as AMCase, with an IC_{50} value of 4.13 µM. Kasugamycin (12.5, 25, 50, or 100 mg/kg every other day) decreases lung collagen levels in a mouse model of pulmonary fibrosis induced by the glycopeptide antitumor antibiotic bleomycin (Item No. 13877).[3] Formulations containing kasugamycin have been used as fungicides in agriculture.

References

1. Hamada, M., Hashimoto, T., Takahashi, T., *et al.* Antimicrobial activity of kasugamycin. *J. Antibiot. (Tokyo)* **18,** 104-106 (1965).
2. Uppala, S. and Zhou, X.G. Field efficacy of fungicides for management of sheath blight and narrow brown leaf spot of rice. *Crop Prot.* **104,** 72-77 (2018).
3. Lee, J.-H., Lee, C.-M., Lee, J.H., *et al.* Kasugamycin is a novel chitinase 1 inhibitor with strong antifibrotic effects on pulmonary fibrosis. *Am. J. Respir. Cell Mol. Biol.* **67(3),** 309-319 (2022).

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