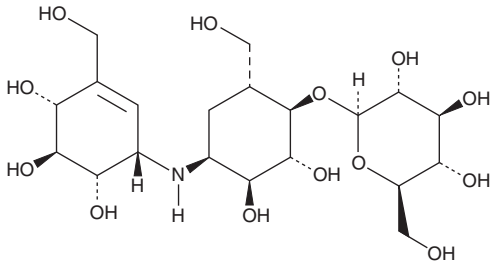
PRODUCT INFORMATION

Validamycin A

Item No. 15326

CAS Registry No.:	37248-47-8
Formal Name:	1,5,6-trideoxy-4-O-β-D-glucopyranosyl-5-(hydroxymethyl)-1-[[(1S,4R,5S,6S)-4,5,6-trihydroxy-3-(hydroxymethyl)-2-cyclohexen-1-yl]amino]-D-chiro-inositol
Synonym:	Validacin
MF:	$C_{20}H_{35}NO_{13}$
FW:	497.5
Purity:	≥60%
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

Validamycin A is supplied as a crystalline solid. A stock solution may be made by dissolving the validamycin A in the solvent of choice, which should be purged with an inert gas. Validamycin A is soluble in the organic solvent DMSO at a concentration of approximately 2 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of validamycin A can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of validamycin A in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Validamycin A is a fungicidal agent used to protect rice plants against sheath blight caused by the pathogenic fungus, *R. solani*, due to its ability to inhibit trehalase, a trehalose-hydrolizing enzyme (K_i = 1.9 nM; IC_{50} = 0.7 µM).[1] It is also effective against the growth and sporulation of *R. cerealis*, *F. culmorum*, and other fungi.[2] This compound has also been used to study trehalase activity and trehalose biosynthesis.[3]

References

1. Asano, N., Yamaguchi, T., Kameda, Y., *et al.* Effect of validamycins on glycohydrolases of *Rhizoctonia solani*. *J. Antibiot. (Tokyo)* **40(4)**, 526-532 (1987).
2. Robson, G.D., Kuhn, P.J., and Trinci, A.P. Effects of validamycin A on the morphology, growth and sporulation of *Rhizoctonia cerealis*, *Fusarium culmorum* and other fungi. *J. Gen. Microbiol.* **134(12)**, 3187-3194 (1988).
3. Goddijn, O.J., Verwoerd, T.C., Voogd, E., *et al.* Inhibition of trehalase activity enhances trehalose accumulation in transgenic plants. *Plant Physiol.* **113(1)**, 181-190 (1997).

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