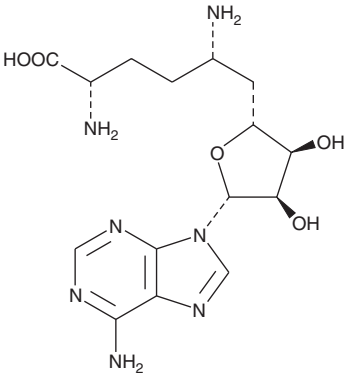
PRODUCT INFORMATION

Sinefungin

Item No. 13829

CAS Registry No.: 58944-73-3
Formal Name: 6,9-diamino-1-(6-amino-9H-purin-9-yl)-1,5,6,7,8,9-hexadeoxy-D-glycero-α-L-talo-decofuranuronic acid
Synonyms: A 9145, Antibiotic A 9145, Antibiotic 32232RP, RP 32232
MF: $C_{15}H_{23}N_7O_5$
FW: 381.4
Purity: ≥95%
UV/Vis.: λ_{max}: 260 nm
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Bacterium/*Streptomyces* sp.



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

Laboratory Procedures

Sinefungin is supplied as a solid. A stock solution may be made by dissolving the sinefungin in water. The solubility of sinefungin in water is approximately 20 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Sinefungin is a nucleoside structurally related to S-adenosylhomocysteine (Item No. 13603) and S-adenosylmethionine (Item No. 13956) that was originally isolated from *Streptomyces*.[1-2] While it has limited use as an antibiotic due to its high *in vivo* toxicity, sinefungin has proved useful as a non-selective inhibitor of SET domain-containing methyltransferases in the study of epigenetic regulation (IC_{50} values range from 0.1-20 μM).[3-7]

References

1. Nolan, L.L. Molecular target of the antileishmanial action of sinefungin. *Antimicrob. Agents Chemother.* **31(10)**, 1542-1548 (1987).
2. Maguire, M.P., Feldman, P.L., and Rapoport, H. Stereoselective synthesis and absolute stereochemistry of sinefungin. *J. Org. Chem.* **55(3)**, 948-955 (1990).
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4. Bissinger, E.-M., Heinke, R., Sippl, W., *et al*. Targeting epigenetic modifiers: Inhibitors of histone methyltransferases. *Med. Chem. Commun.* (2010).
5. Horiuchi, K.Y., Eason, M.M., Ferry, J.J., *et al*. Assay development for histone methyltransferases. *Assay Drug Dev. Technol.* **11(4)**, 227-236 (2013).
6. Copeland, R.A., Solomon, M.E., and Richon, V.M. Protein methyltransferases as a target class for drug discovery. *Nat. Rev. Drug Discov.* **8**, 724-732 (2009).
7. Schluckebier, G., Kozak, M., Bleimling, N., *et al*. Differential binding of *S*-adenosylmethionine *S*-adenosylhomocysteine and sinefungin to the adenine-specific DNA methyltransferase M. *Taql. J. Mol. Biol.* **265**, 56-67 (1997).

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