PRODUCT INFORMATION



1-Deoxynojirimycin

Item No. 21500

CAS Registry No.:	19130-96-2	
Formal Name:	2R-(hydroxymethyl)-3R,4R,5S-piperidinetriol	
Synonyms:	BAY-h-5955, D-1-Deoxynojirimycin, 1-DNJ, 1-dNM, Moranoline	HONNH
MF:	$C_6H_{13}NO_4$	ОН
FW:	163.2	HO
Purity:	≥95%	
Supplied as:	A crystalline solid	OH
Storage:	-20°C	
Stability:	≥4 years	
Information represents	the product specifications. Batch specific analytical results	s are provided on each certificate of analysis.

Laboratory Procedures

1-Deoxynojirimycin (1-DNJ) is supplied as a crystalline solid. A stock solution may be made by dissolving the 1-dNM in the solvent of choice, which should be purged with an inert gas. 1-dNM is soluble in the organic solvent DMSO at a concentration of approximately 10 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 1-dNM can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 1-dNM in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

1-DNJ is an iminosugar that has been found in M. alba (mulberry) leaves and has diverse biological activities.¹⁻⁶ It inhibits the activities of α - and β -glucosidase (IC₅₀s = 35 and 71 μ M, respectively).² 1-DNJ (5 mM) reduces the formation of N-linked complex oligosaccharides in IEC-6 cells.³ It inhibits HIV-1 envelope-mediated membrane fusion in CEM cells when used at a concentration of 2 mM.⁴ 1-DNJ (1-100 µg/ml) reduces the invasion and migration of B16/F10 mouse melanoma cells.⁵ It improves glucose and insulin tolerance in db/db mice when administered intravenously at doses ranging from 20 to 80 mg/kg per day for four weeks.⁶

References

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- 2. Ahuja-Casarín, A.I., Merino-Montiel, P., Vega-Baez, J.L., et al. J. Enzyme Inhib. Med. Chem. 36(1), 138-146 (2021).
- 3. Codelli, J.A., Baskin, J.M., Agard, N.J., et al. J. Am. Chem. Soc. 130(34), 11486-11493 (2008).
- 4. Papandréou, M.-J., Barbouche, R., Guieu, R., et al. Mol Pharmacol. 61(1), 186-193 (2002).
- 5. Wang, R.-J., Yang, C.-H., and Hu, M.-L. J. Agric. Food Chem. 58(16), 8988-8993 (2010).
- 6. Liu, Q., Li, X., Li, C., et al. Molecules 20(12), 21700-21714 (2015).

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFFTY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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