3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

2,6-Diaminopurine hemisulfate salt

Product Number **D 3289**
Store at Room Temperature

Product Description

Molecular Formula: $C_5H_6N_6 \bullet ½ H_2SO_4$
Molecular Weight: 199.2
CAS Number: 69369-16-0
Melting Point: 302 °C[1]
λ_{max}: 241 nm, 282 nm (pH 1.9);[1] 247 nm, 280 nm (0.1 M phosphate, pH 7.0)[2]
Extinction Coefficient: E^{mM} = 9.55 (241 nm), 10 (282 nm) (pH 1.9);[1] 7.57 (247 nm), 9.05 (280 nm) (0.1 M phosphate, pH 7.0)[2]
Synonyms: DAP hemisulfate; 2-aminoadenine hemisulfate; 1*H*-purine-2,6-diamine hemisulfate; 2,6-diamino-9*H*-purine hemisulfate[1]

2,6-Diaminopurine is an adenine analogue that is an antagonist of naturally occuring purines.[1] DAP can base pair with thymidine in DNA, and with uracil in RNA, to give three Watson-Crick hydrogen bonds. This alteration in base pairing properties has led to the use of DAP as a structural probe of molecular recognition between ligands and DNA.[2]

DAP has been incorporated into anhydrohexitol nucleosides for the preparation of hexitol nucleic acids, and subsequent hybridization studies with DNA and RNA.[4] Ligase ribozymes that contain DAP and uracil have been prepared by *in vitro* evolution, and have been found to catalyze the template-directed joining of two RNA molecules.[5] A DAP moiety has been incorporated in the synthesis of various L-β-(2S,4S)- and L-α-(2S,4R)-dioxolanyl nucleosides as potential anti-HIV compounds.[6]

The cyanophage S-2L is capable of using DAP in place of adenine in its DNA.[7] *Salmonella typhimurium* is also able to utilize DAP as a purine source.[8]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in formic acid (50 mg/ml), with heat as needed, yielding a clear to hazy, yellow to yellow-green solution.

References

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3. Bailly, C., and Waring, M. J., The use of diaminopurine to investigate structural properties of nucleic acids and molecular recognition between ligands and DNA. Nucleic Acids Res., **26(19)**, 4309-4314 (1998).
4. Boudou, V., et al., Base pairing of anhydrohexitol nucleosides with 2,6-diaminopurine, 5-methylcytosine and uracil asbase moiety. Nucleic Acids Res., **27(6)**, 1450-1456 (1999).
5. Reader, J. S., and Joyce, G. F., A ribozyme composed of only two different nucleotides. Nature, **420(6917)**, 841-844 (2002).
6. Kim, H. O., et al., L-β-(2S,4S)- and L-α-(2S,4R)-dioxolanyl nucleosides as potential anti-HIV agents: asymmetric synthesis and structure-activity relationships. J. Med. Chem., **36(5)**, 519-528 (1993).
7. Kirnos, M. D., et al., 2-aminoadenine is an adenine substituting for a base in S-2L cyanophage DNA. Nature, **270(5635)**, 369-370 (1977).
8. Garber, B. B., and Gots, J. S., Utilization of 2,6-diaminopurine by *Salmonella typhimurium*. J. Bacteriol., **143(2**), 864-871 (1980).

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