

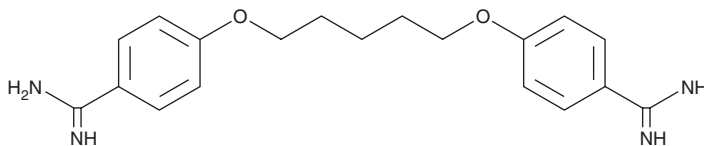
# PRODUCT INFORMATION



## Pentamidine

Item No. 20679

CAS Registry No.:	100-33-4
Formal Name:	4,4'-[1,5-pentanediyloxy]bis-benzenecarboximidamide
Synonym:	NSC 9921
MF:	C <sub>19</sub> H <sub>24</sub> N <sub>4</sub> O <sub>2</sub>
FW:	340.4
Purity:	≥98%
UV/Vis.:	λ <sub>max</sub> : 211, 265 nm
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

Pentamidine is supplied as a crystalline solid. A stock solution may be made by dissolving the pentamidine in the solvent of choice. Pentamidine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of pentamidine in these solvents is approximately 10, 20, and 25 mg/ml, respectively.

Pentamidine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, pentamidine should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Pentamidine has a solubility of approximately 0.33 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Pentamidine is an aromatic diamine antimicrobial agent.<sup>1-3</sup> It is a DNA minor groove binder that binds to A/T rich regions of DNA.<sup>4</sup> Pentamidine is active against *L. mexicana* (IC<sub>50</sub> = 4.532 μg/ml), the *T. b. brucei* strain S427 (IC<sub>50</sub> = 1.1 nM), and *C. neoformans* (MICs = 1.56 and 6.25 μg/ml for the JEC21 and H99 strains, respectively).<sup>1-3</sup> It increases survival in mice infected with *T. b. brucei* when administered at a dose of 10 μmol/kg.<sup>2</sup> Formulations containing pentamidine have been used in the prevention of *P. jirovecii* pneumonia (PJP) in patients infected with HIV.

### References

1. Chan-Bacab, M.J., Hernández-Núñez, E., and Navarrete-Vázquez, G. Nitazoxanide, tizoxanide and a new analogue [4-nitro-N-(5-nitro-1,3-thiazol-2-yl)benzamide; NTB] inhibit the growth of kinetoplastid parasites (*Trypanosoma cruzi* and *Leishmania mexicana*) *in vitro*. *J. Antimicrob. Chemother.* **63(6)**, 1292-1293 (2009).
2. Mathis, A.M., Holman, J.L., Sturk, L.M., *et al.* Accumulation and intracellular distribution of antitrypanosomal diamidine compounds DB75 and DB820 in African trypanosomes. *Antimicrob. Agents Chemother.* **50(6)**, 2185-2191 (2006).
3. Ortiz, S.C., Huang, M., and Hull, C.M. Spore germination as a target for antifungal therapeutics. *Antimicrob. Agents Chemother.* **63(12)**, e00994-e01019 (2019).
4. Edwards, K.J., Jenkins, T.C., and Neidle, S. Crystal structure of a pentamidine-oligonucleotide complex: Implications for DNA-binding properties. *Biochemistry* **31(31)**, 7104-7109 (1992).

#### WARNING

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

#### SAFETY 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.

#### WARRANTY AND LIMITATION OF REMEDY

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