

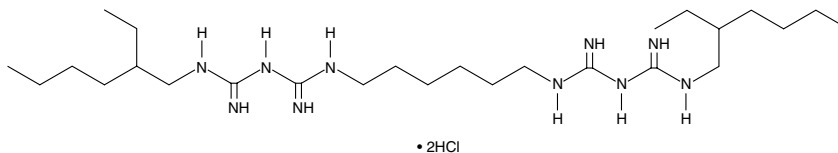
Product Information



Alexidine (hydrochloride)

Item No. 13876

CAS Registry No.: 1715-30-6
Formal Name: N¹,N¹⁴-bis(2-ethylhexyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediiimidamide, dihydrochloride
MF: C₂₆H₅₆N₁₀ • 2HCl
FW: 581.7
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 237 nm



Laboratory Procedures

For long term storage, we suggest that alexidine (hydrochloride) be stored as supplied at -20°C. It should be stable for at least two years.

Alexidine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the alexidine (hydrochloride) in the solvent of choice. Alexidine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of alexidine (hydrochloride) in these solvents is approximately 11, 16, and 5 mg/ml, respectively.

Alexidine (hydrochloride) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, alexidine (hydrochloride) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Alexidine (hydrochloride) has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Alexidine is an alkyl bis(biguanide) antiseptic which has been used in mouthwashes to eliminate plaque forming microorganisms.¹ It binds to lipopolysaccharide and lipoteichoic acid and inhibits fungal phospholipase B (IC₅₀ ~ 250 nM).^{2,3} Alexidine also inhibits the mitochondrial phosphatase PTPMT1 (IC₅₀ = 1.08 μM, *in vitro*) and induces apoptosis in cancer cell lines (ED₅₀ = 1.8-2.6 μM).^{4,5}

References

1. Coburn, R.A., Baker, P.J., Evans, R.T., *et al.* *In vitro* antiplaque properties of a series of alkyl bis(biguanides). *J. Med. Chem.* **21(8)**, 828-829 (1978).
2. Zorko, M. and Jerala, R. Alexidine and chlorhexidine bind to lipopolysaccharide and lipoteichoic acid and prevent cell activation by antibiotics. *J. Antimicrob. Chemother.* **62**, 730-737 (2008).
3. Ganendren, R., Widmer, F., Singhal, V., *et al.* *In vitro* antifungal activities of inhibitors of phospholipases from the fungal pathogen *Cryptococcus neoformans*. *Antimicrob. Agents Chemother.* **48(5)**, 1561-1569 (2004).
4. Doughty-Shenton, D., Joseph, J.D., Zhang, J., *et al.* Pharmacological targeting of the mitochondrial phosphatase PTPMT1. *J. Pharmacol. Exp. Ther.* **333(2)**, 584-592 (2010).
5. Yip, K.W., Ito, E., Mao, X., *et al.* Potential use of alexidine dihydrochloride as an apoptosis-promoting anticancer agent. *Mol. Cancer Ther.* **5(9)**, 2234-2240 (2006).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/13876

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent *via* email to your institution.

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