

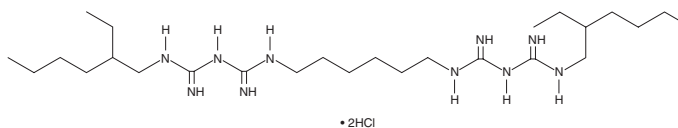
# PRODUCT INFORMATION



## Alexidine (hydrochloride)

Item No. 13876

**CAS Registry No.:** 1715-30-6  
**Formal Name:** N<sup>1</sup>,N<sup>14</sup>-bis(2-ethylhexyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimidamide, dihydrochloride  
**MF:** C<sub>26</sub>H<sub>56</sub>N<sub>10</sub> • 2HCl  
**FW:** 581.7  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 237 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

Alexidine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the alexidine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Alexidine (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. 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 0.50 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.

### Description

Alexidine is an alkyl bis(biguanide) antiseptic which has been used in mouthwashes to eliminate plaque forming microorganisms.<sup>1</sup> It binds to lipopolysaccharide and lipoteichoic acid and inhibits fungal phospholipase B (IC<sub>50</sub> ~250 nM).<sup>2,3</sup> Alexidine also inhibits the mitochondrial phosphatase PTPMT1 (IC<sub>50</sub> = 1.08 μM, *in vitro*) and induces apoptosis in cancer cell lines (ED<sub>50</sub> = 1.8-2.6 μM).<sup>4,5</sup>

### 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).

#### 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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