

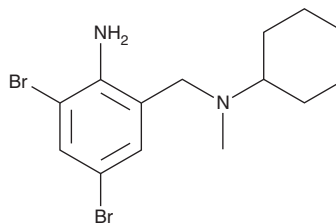
# PRODUCT INFORMATION



## Bromhexine

Item No. 37900

**CAS Registry No.:** 3572-43-8  
**Formal Name:** 2-amino-3,5-dibromo-N-cyclohexyl-N-methyl-benzenemethanamine  
**Synonym:** NA 274  
**MF:** C<sub>14</sub>H<sub>20</sub>Br<sub>2</sub>N<sub>2</sub>  
**FW:** 379.1  
**Purity:** ≥98%  
**Supplied as:** A 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

Bromhexine is supplied as a solid. A stock solution may be made by dissolving the bromhexine in the solvent of choice, which should be purged with an inert gas. Bromhexine is soluble (≥10 mg/ml) in ethanol and DMSO.

### Description

Bromhexine is a mucolytic agent.<sup>1</sup> It also inhibits transmembrane serine protease 2 (TMPRSS2; IC<sub>50</sub> = 0.75 μM) and is selective for TMPRSS2 over hepsin, matriptase, trypsin, and thrombin (IC<sub>50</sub>s = 35, 58, >100, and >100 μM, respectively).<sup>2</sup> Bromhexine increases the amplitude and frequency of ciliary beating but does not affect the intracellular electrical activity of isolated dog tracheal mucus membrane preparations.<sup>3</sup> It decreases shear viscosity and increases instantaneous shear compliance of tracheal mucus in minipigs when administered at a dose of 2 mg/kg.<sup>1</sup> Bromhexine (30 mg/kg) also decreases lung and liver metastasis but increases primary tumor size in a transgenic autochthonous mouse model for prostate cancer (TRAMP).<sup>2</sup> Formulations containing bromhexine have previously been used in the treatment of keratoconjunctivitis sicca in patients with Sjögren's syndrome.

### References

1. Martin, G.P., Loveday, B.E., and Mrriott, C. The effect of bromhexine hydrochloride on the viscoelastic properties of mucus from the mini-pig. *Eur. Respir. J.* **3**(4), 392-396 (1990).
2. Lucas, J.M., Heinlein, C., Kim, T., et al. The androgen-regulated protease TMPRSS2 activates a proteolytic cascade involving components of the tumor microenvironment and promotes prostate cancer metastasis. *Cancer Discov.* **4**(11), 1310-1325 (2014).
3. Yanaura, S., Imamura, N., and Misawa, M. Effects of expectorants on the canine tracheal ciliated cells. *Jpn. J. Pharmacol.* **31**(6), 957-965 (1981).

#### 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.

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