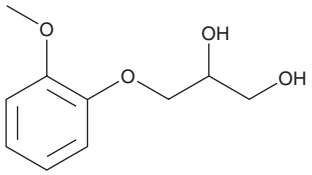
PRODUCT INFORMATION

Guaifenesin

Item No. 21250

CAS Registry No.:	93-14-1
Formal Name:	3-(2-methoxyphenoxy)-1,2-propanediol
Synonyms:	MY-301, NSC 62112, SL 90, XL90
MF:	$C_{10}H_{14}O_4$
FW:	198.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 226, 274 nm
Supplied as:	A crystalline solid
Storage:	Room temperature
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Guaifenesin is supplied as a crystalline solid. A stock solution may be made by dissolving the guaifenesin in the solvent of choice. Guaifenesin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of guaifenesin in ethanol is approximately 15 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of guaifenesin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of guaifenesin in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Guaifenesin is an expectorant.[1] It inhibits production of mucin 5AC (MUC5AC), reduces mucus viscosity and elasticity, and increases the mucociliary transport rate of endogenous particles in primary human tracheobronchial epithelial cells in a concentration-dependent manner.[2] Guaifenesin (50 mg/kg, p.o.) increases phenol red secretion, a marker of expectorant activity, in rats.[3] Formulations containing guaifenesin have been used as expectorants in the treatment of the common cold and chronic bronchitis.

References

1. Seagrave, J., Albrecht, H.H., Hill, D.B., *et al.* Effects of guaifenesin, N-acetylcysteine, and ambroxol on MUC5AC and mucociliary transport in primary differentiated human tracheal-bronchial cells. *Respir. Res.* **13**, 98 (2012).
2. Seagrave, J., Albrecht, H., Park, Y.S., *et al.* Effect of guaifenesin on mucin production, rheology, and mucociliary transport in differentiated human airway epithelial cells. *Exp. Lung Res.* **37(10)**, 606-614 (2011).
3. Kagan, L., Lavy, E., and Hoffman, A. Effect of mode of administration on guaifenesin pharmacokinetics and expectorant action in the rat model. *Pulm. Pharmacol. Ther.* **22(3)**, 260-265 (2009).

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