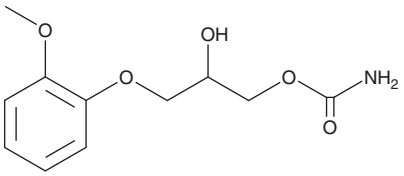
PRODUCT INFORMATION

Methocarbamol

Item No. 23870

CAS Registry No.:	532-03-6
Formal Name:	3-(2-methoxyphenoxy)-1,2-propanediol, 1-carbamate
Synonyms:	AHR 85, Guaiacol Glyceryl Ether Carbamate, Guaiphenesin Carbamate, NSC 170960
MF:	$C_{11}H_{15}NO_5$
FW:	241.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 230, 273 nm
Supplied as:	A crystalline solid
Storage:	4°C
Stability:	≥4 years



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

Laboratory Procedures

Methocarbamol is supplied as a crystalline solid. A stock solution may be made by dissolving the methocarbamol in the solvent of choice. Methocarbamol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of methocarbamol in these solvents is approximately 14, 16, and 33 mg/ml, respectively.

Methocarbamol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, methocarbamol should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Methocarbamol has a solubility of approximately 0.03 mg/ml in a 1:30 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Methocarbamol is an orally bioavailable skeletal muscle relaxant.[1] *In vivo*, methocarbamol inhibits the ability of mice to remain on a vertical ladder for 1 minute (ED_{50} = 15 mg/kg) and decreases forelimb grip strength by 35.9% when administered at a dose of 500 mg/kg.[1,2] It abolishes femoral nerve-stimulated polysynaptic reflex contractions of the cat tibialis anterior muscle and prolongs the mean refractory period of directly or indirectly stimulated skeletal muscle when administered at a dose of 200 mg/kg.[3] Methocarbamol also selectively inhibits human carbonic anhydrase (CA) isoform I over CAII (IC_{50}s = 70 and ~80,000 µM, respectively).[4] Formulations containing methocarbamol have been used to treat skeletal muscle spasms.

References

1. Cymbalist, M.A. and Shapero, M. A comparative study of the effect of some centrally acting skeletal muscle relaxants in mice. *J. Pharm. Pharmacol.* **26(2)**, 109-112 (1974).
2. Nevins, M.E., Nash, S.A., and Beardsley, P.M. Quantitative grip strength assessment as a means of evaluating muscle relaxation in mice. *Psychopharmacology (Berl)* **110(1-2)**, 92-86 (1993).
3. Crankshaw, D.P. and Raper, C. Some studies on peripheral actions of mephenesin, methocarbamol and diazepam. *Br. J. Pharmacol.* **34(3)**, 579-590 (1968).
4. Parr, J.S. and Khalifah, R.G. Inhibition of carbonic anhydrases I and II by N-unsubstituted carbamate esters. *J. Biol. Chem.* **267(35)**, 25044-25050 (1992).

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