

PRODUCT INFORMATION



Scopolamine

Item No. 40307

CAS Registry No.: 51-34-3

Formal Name: α S-(hydroxymethyl)-benzeneacetic acid,
(1 α ,2 β ,4 β ,5 α ,7 β)-9-methyl-3-oxa-9-
azatricyclo[3.3.1.0^{2,4}]non-7-yl ester

Synonym: Hyoscine

MF: C₁₇H₂₁NO₄

FW: 303.4

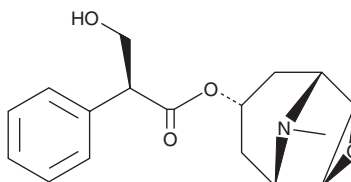
Purity: $\geq 98\%$

Supplied as: A low-melting solid

Storage: -20°C

Stability: ≥ 4 years

Item Origin: Plant/*Datura*



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

Laboratory Procedures

Scopolamine is supplied as a low-melting solid. A stock solution may be made by dissolving the scopolamine in the solvent of choice, which should be purged with an inert gas. Scopolamine is soluble (≥ 10 mg/ml) in organic solvents such as ethanol and DMSO.

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 scopolamine can be prepared by directly dissolving the low-melting solid in aqueous buffers. Scopolamine is sparingly soluble (1-10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

Scopolamine is an alkaloid that has been found in *D. stramonium* and has diverse biological activities.¹⁻⁶ It is an antagonist of muscarinic acetylcholine receptors (mAChRs; K_is = 0.19, 1.41, and 0.18 nM for the rat M₁, M₂, and M₃ receptors, respectively).² Scopolamine reduces acetylcholine-induced contractions in isolated guinea pig ileum (IC₅₀ = 8.1 nM).³ It inhibits tremors induced by the mAChR agonist oxotremorine (Item No. 35707) in mice (ED₅₀ = 0.23 mg/kg). Scopolamine increases fine motor activity counts and ambulatory activity in rats in a home-cage activity test (ED₅₀ = 0.12 mg/kg for both).⁴ It has been used to induce learning deficiencies or amnesia in animal models.^{5,6} Formulations containing scopolamine have been used in the treatment of motion sickness and postoperative nausea and vomiting. This product is also available as an analytical reference standard (Item No. 14108).

References

1. Ma, L., Gu, R., Tang, L., *et al.* *Toxins (Basel)* **7**(1), 138-155 (2015).
2. Lazareno, S., Buckley, N.J., and Roberts, F.F. *Mol. Pharmacol.* **38**(6), 805-815 (1990).
3. Fjalland, B., Christensen, A.V., and Hyttel, J. *Naunyn. Schmiedeberg's Arch. Pharmacol.* **301**(1), 5-9 (1977).
4. Sipos, M.L., Burchnell, V., and Galbicka, G. *Psychopharmacology* **147**(3), 250-256 (1999).
5. Bratt, A.M., Kelly, M.E., Domeney, A.M., *et al.* *Pharmacol. Biochem. Behav.* **53**(3), 713-721 (1996).
6. Ano, Y., Kutsukake, T., Sasaki, T., *et al.* *J. Agric. Food Chem.* **67**(29), 8160-8167 (2019).

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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