Tropicamide
Item No. 16606

CAS Registry No.: 1508-75-4
Formal Name: N-ethyl-α-(hydroxymethyl)-
N-(4-pyridinylmethyl)-benzeneacetamide
Synonym: Ro 1-7683
MF: C₁₇H₂₀N₂O₂
FW: 284.4
Purity: ≥98%
UV/Vis.: λmax: 256 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

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

Tropicamide is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tropicamide should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Tropicamide has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Muscarinic receptors are G protein-coupled acetylcholine receptors that play diverse roles. Five subtypes (M₁-5) have been identified, which preferentially couple to various effector systems based on their G protein interaction.¹,² Tropicamide is a muscarinic acetylcholine receptor (mACHR) antagonist (pKᵢ = 7.2 in chicken heart) that displays 3-fold selectivity for M₄.¹,³,⁴ When applied as eye drops, it produces temporary mydriasis (pupil dilation; EC₅₀ = 6 µg/ml) and cycloplegia (ciliary muscle paralysis; EC₅₀ = 25 µg/ml).³ Tropicamide has been used to probe mACHR activity in a mouse model of fragile X syndrome.⁵

References