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Scopolamine

Catalog No: tcsc6609

Available Sizes

Size: 100mg

Specifications

CAS No:
51-34-3

Formula:
$C_{17}H_{21}NO_4$

Pathway:
Neuronal Signaling;GPCR/G Protein;Neuronal Signaling;GPCR/G Protein

Target:
mAChR;mAChR;5-HT Receptor;5-HT Receptor

Purity / Grade:
>98%

Solubility:
10 mM in DMSO

Alternative Names:
Hyoscine;Scopine (-)-tropate;Scopine tropate

Observed Molecular Weight:
303.35

Product Description

Scopolamine is a high affinity (nM) **muscarinic** antagonist. **5-HT$_3$** receptor-responses are reversibly inhibited by Scopolamine with an **IC$_{50}$** of 2.09 μM.

IC50 & Target: IC50: 2.09 μM (5-HT$_3$ receptor)[1]

mAChR[1]

In Vitro: Application of Scopolamine to oocytes expressing 5-HT_3 receptors does not elicit a response when applied alone, but causes a concentration-dependent inhibition of the response during a co-application of 2 μM 5-HT. The pIC_{50} value for Scopolamine is 5.68±0.05 (IC_{50}=2.09 μM, n=6) with a Hill Slope of 1.06 ± 0.05. This gave a K_b of 3.23 μM. The same concentration-dependent effect is also seen when Scopolamine is applied during the 5-HT application. To further test for a competitive binding at the 5-HT_3 receptor, the competition of unlabelled Scopolamine is measured with [^{3}H]granisetron, an established high-affinity competitive antagonist at these receptors. Scopolamine displays concentration-dependent competition with 0.6 nM [^{3}H]granisetron (~K_d), yielding an average pK_i of 5.17±0.24 (K_i=6.76 μM, n=3)[1].

In Vivo: In the histopathology study, there is no significant change in the histology of the brain. However, it is observed that there is a reduction in density of cells in the hippocampus of the control mice pretreated with Scopolamine who received only distilled water [2]. Scopolamine administration alone significantly increases the activity of Acetylcholinesterase enzyme (AchE) (7.98±0.065; P1-42) (P[3].