

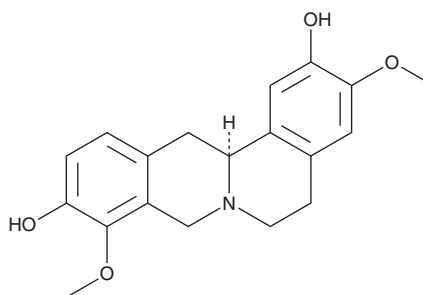
PRODUCT INFORMATION



(-)-Stepholidine

Item No. 26612

CAS Registry No.: 16562-13-3
Formal Name: (13aS)-5,8,13,13a-tetrahydro-3,9-dimethoxy-6H-dibenzo[a,g]quinolizine-2,10-diol
MF: C₁₉H₂₁NO₄
FW: 327.4
Purity: ≥95%
UV/Vis.: λ_{max}: 242, 279 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

(-)-Stepholidine is supplied as a crystalline solid. A stock solution may be made by dissolving the (-)-stepholidine in the solvent of choice, which should be purged with an inert gas. (-)-Stepholidine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of (-)-stepholidine in ethanol is approximately 1.1 mg/ml and approximately 5 mg/ml in DMSO and DMF.

(-)-Stepholidine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (-)-stepholidine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. (-)-Stepholidine has a solubility of approximately 0.14 mg/ml in a 1:6 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

(-)-Stepholidine is a dopamine receptor antagonist and a partial agonist of the serotonin (5-HT) receptor subtype 5-HT_{1A}.¹⁻³ (-)-Stepholidine binds to dopamine D₁, D₂, D₃, D₄, and D₅ receptors (K_is = 5.1, 11.6, 24, 1,450, and 5.8 nM, respectively) as well as 5-HT_{1A}, 5-HT_{2B}, α_{2C}-adrenergic receptors (α_{2C}-ARs), and sigma-2 (σ₂) receptors in a radioligand binding assay (K_is = 143, 226, 215, and 53 nM, respectively).¹ It inhibits dopamine-induced cAMP accumulation in HEK293 cells expressing dopamine D₁, D₂, and D₅ receptors with IC₅₀ values of 20.5, 128, and 27 nM, respectively. (-)-Stepholidine inhibits forskolin-induced cAMP production in CHO cells expressing rat 5-HT_{1A} receptors (EC₅₀ = 1.2 μM).² *In vivo*, (-)-stepholidine (1 mg/kg, i.v.) increases dopamine neuron firing rates, the number of spikes in bursts, and the amplitude of slow oscillations by 20, 155, and 126%, respectively, in the rat ventral tegmental area (VTA), effects that can be blocked by the 5-HT_{1A} antagonist WAY-100635 (Item No. 14599).³ Pretreatment with (-)-stepholidine inhibits amphetamine- and phencyclidine-induced locomotor activity in rats (ED₅₀s = 2.4 and 6.5 mg/kg, respectively).⁴

References

1. Meade, J.A., Free, R.B., Miller, N.R., et al. *Psychopharmacology* **232**(5), 917-630 (2015).
2. Mo, J., Zhang, H., Yu, L.-P., et al. *Neurobiol. Aging* **31**(6), 926-936 (2010).
3. Gao, M., Chu, H.-Y., Jin, G.-Z., et al. *Synapse* **65**(5), 379-387 (2011).
4. Natesan, S., Reckless, G.E., Barlow, K.B.L., et al. *Psychopharmacology* **199**(2), 275-289 (2008).

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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