

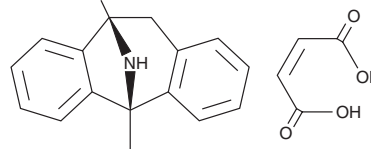
PRODUCT INFORMATION



(-)-MK-801 (maleate)

Item No. 27213

CAS Registry No.: 121917-57-5
Formal Name: (5R,10S)-10,11-dihydro-5-methyl-5H-dibenzo[a,d]
cyclohepten-5,10-imine, (2Z)-2-butenedioate
MF: $C_{16}H_{15}N \cdot C_4H_4O_4$
FW: 337.4
Purity: $\geq 95\%$
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥ 2 years



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

Laboratory Procedures

(-)-MK-801 (maleate) is supplied as a crystalline solid. A stock solution may be made by dissolving the (-)-MK-801 (maleate) in the solvent of choice. (-)-MK-801 (maleate) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of (-)-MK-801 (maleate) in these solvents is approximately 0.5, 20, and 25 mg/ml, respectively.

(-)-MK-801 (maleate) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, (-)-MK-801 (maleate) should first be dissolved in DMF and then diluted with the aqueous buffer of choice. (-)-MK-801 (maleate) has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

(-)-MK-801 is an NMDA receptor antagonist ($K_i = 43$ nM for inhibition of spermine binding) and an isomer of (+)-MK-801 (Item No. 10009019).¹ *In vivo*, (-)-MK-801 blocks generalized seizures in a mouse model of epilepsy ($ED_{50} = 0.85$ mg/kg) and increases horizontal locomotor activity in mice ($ED_{50} = 2.71$ mg/kg).² (-)-MK-801 (0.1 mg/kg) decreases immobility time in the tail suspension and forced swim tests in a mouse model of social defeat stress, indicating antidepressant-like activity.² (-)-MK-801 also inhibits acetylcholinesterase (AChE) with K_i values of 6.2 and 7.9 μM for electric eel and rat brain AChE, respectively.⁴

References

- Berger, M.L., Schweifer, A., Rebernik, P., *et al.* NMDA receptor affinities of 1,2-diphenylethylamine and 1-(1,2-diphenylethyl)piperidine enantiomers and of related compounds. *Bioorg. Med. Chem.* **17**(9), 3456-3462 (2009).
- Dravid, S.M., Erreger, K., Yuan, H., *et al.* Subunit-specific mechanisms and proton sensitivity of NMDA receptor channel block. *J. Physiol.* **581**(Pt. 1), 107-128 (2007).
- Yang, B., Ren, Q., Ma, M., *et al.* Antidepressant effects of (+)-MK-801 and (-)-MK-801 in the social defeat stress model. *Int. J. Neuropsychopharmacol.* **19**(12), pyw080 (2016).
- Galli, A. and Mori, F. Acetylcholinesterase inhibition and protection by dizocilpine (MK-801) enantiomers. *J. Pharm. Pharmacol.* **48**(1), 71-76 (1996).

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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