

Certificate of Analysis

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Product Name: (+)-MK 801 maleate

Catalog No.: 0924

Batch No.: 13

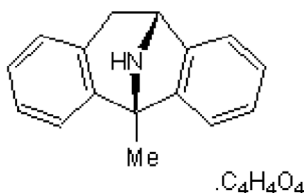
CAS Number: 77086-22-7

EC Number: 278-614-5

IUPAC Name: (5*S*,10*R*)-(+)-5-Methyl-10,11-dihydro-5*H*-dibenzo[*a,d*]cyclohepten-5,10-imine maleate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	C ₁₆ H ₁₅ N.C ₄ H ₄ O ₄
Batch Molecular Weight:	337.37
Physical Appearance:	White solid
Solubility:	water to 10 mM with gentle warming DMSO to 100 mM
Storage:	Store at RT
Batch Molecular Structure:	



2. ANALYTICAL DATA

HPLC:	Shows 100% purity
Chiral HPLC:	Shows 99.7% purity
¹H NMR:	Consistent with structure
Mass Spectrum:	Consistent with structure
Optical Rotation:	[α] _D = +114.9 (Concentration = 1, Solvent = Methanol)
Microanalysis:	

	Carbon	Hydrogen	Nitrogen
Theoretical	71.2	5.68	4.15
Found	71.23	5.62	4.21

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

(+)-MK 801 maleate is a high affinity ($K_i = 37.2$ nM), selective and non-competitive NMDA receptor antagonist. (+)-MK 801 maleate acts by binding to a site located within the NMDA associated ion channel and thus prevents Ca^{2+} flux. It is an effective anti-ischemic agent in several animal models. (+)-MK 801 maleate increases motor activity in rat models. (+)-MK 801 maleate inhibits proliferation and increases apoptosis in hippocampal neural stem cells (NSCs). (+)-MK 801 maleate induces schizophrenia-like symptoms in rodents. (-)-enantiomer also available.

Physical and Chemical Properties:

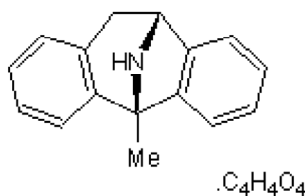
Batch Molecular Formula: $C_{16}H_{15}N.C_4H_4O_4$

Batch Molecular Weight: 337.37

Physical Appearance: White solid

Minimum Purity: $\geq 99\%$

Batch Molecular Structure:



References:

Ding et al (2018) Effect of NMDA on proliferation and apoptosis in hippocampal neural stem cells treated with MK-801. *Exp.Ther.Med.* **16** 1137. PMID: 30116364.

Carey et al (1998) Effects of dizocilpine (MK-801) on motor activity and memory. *Psychopharmacology* **137** 241. PMID: 9683001.

Zajaczkowski et al (1997) Uncompetitive NMDA receptor antagonists attenuate NMDA-induced impairment of passive avoidance learning and LTP. *Neuropharmacology* **36** 961. PMID: 9257940.

Storage: Store at RT

Solubility & Usage Info:

water to 10 mM with gentle warming
DMSO to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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