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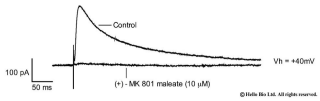
DATASHEET

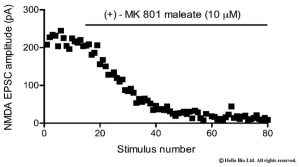
(+)-MK 801 maleate

Product overview

Name	(+)-MK 801 maleate
Cat No	HB0004
Alternative names	Dizocilpine maleate, Dizocilpine
Biological action	Antagonist
Purity	>98%
Customer comments	*We are using MK801 in our research. We are very satisfied with the quality of this product.* **Verified customer, UCSD** *(+)-MK 801 maleate does what it should! It is a very good product, delivered very rapidly.* **Verified customer, Research University Paris** *...our first order with Hello Bio, has been satisfactory. The (+)-MK 801 Maleate has arrived in only some days and it was in perfect conditions.* **Verified customer, Universidad de La Laguna**
Description	Potent, selective, non-competitive NMDA receptor antagonist

Images





Biological Data

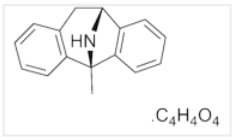
Biological description	Potent, selective and non-competitive NMDA receptor antagonist (K_d = 37.2 nM). Approx 10-fold more potent than (-)-MK 801 maleate. Prevents calcium ion influx and long term potentiation induction. Shows anticonvulsant and neuroprotective properties.
Application notes	The NMDA receptor antagonist (+)-MK 801 is use-dependent and blocks NMDARs in their open conformation. (+)-MK 801 from Hello Bio fully abolishes evoked NMDAR currents at 10 µM rapidly upon repeated stimulations (see Fig 1 above). At concentrations of 50 µM a more rapid receptor blockade was observed. **#Protocol 1: Evoked NMDA receptor currents** • Whole cell voltage clamp recordings were obtained from layer V neurons of the mouse prelimbic cortex brain slice. • NMDA currents were evoked via a stimulating electrode placed in layers II/III and evoked by a single square (150 µs) pulse every 10 sec at a stimulus intensity that gave a reliable NMDA

current.
- Neurons were held at +40 mV to relieve NMDA currents from their voltage-dependent Mg^{2+} block.
- NMDA currents were continually stimulated and recorded in response to continual bath applications of (+)-MK 801 until NMDA currents were completely abolished.
- All NMDAR recordings were made in the presence of $GABA_A$-R and AMPAR antagonists.

Solubility & Handling

Solubility overview	Soluble in water (25mM, gentle warming) and in DMSO (100mM)
Storage instructions	Room temperature
Storage of solutions	Prepare and use solutions on the same day if possible. Store solutions at -20°C for up to one month if storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.
Shipping Conditions	Stable for ambient temperature shipping. Follow storage instructions on receipt.
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	(5*S*,10*R*)-(+)-5-Methyl-10,11-dihydro-5*H*-dibenzo[*a*,*d*]cyclohepten-5,10-imine maleate
Molecular Weight	337.37
Chemical structure	
Molecular Formula	$C_{16}H_{15}N.C_4H_4O_4$
CAS Number	77086-22-7
PubChem identifier	6420042
SMILES	C[C@@]12C3=CC=CC=C3C[C@@H](N1)C4=CC=CC=C24.C(=C\C(=O)O)\C(=O)O
Source	Synthetic
InChi	InChI=1S/C16H15N.C4H4O4/c1-16-13-8-4-2-6-11(13)10-15(17-16)12-7-3-5-9-14(12)16;5-3(6)1-2-4(7)8/h2-9,15,17H,10H2,1H3;1-2H,(H,5,6)(H,7,8)/b;2-1-/t15-,16+;/m1./s1
InChiKey	QLTXKCWMEZIHBJ-PJGJYSAQSA-N
MDL number	MFCD00082465
Appearance	White solid

References

Effects of MK-801 stereoisomers on schedule-controlled behavior in rats.

Genovese RF *et al* (1991) Psychopharmacology (Berl) 105(4)
PubMedID 1771215

The effects of dizocilpine maleate (MK-801), an antagonist of the N-methyl-D-aspartate receptor, on neurologic recovery and histopathology following complete cerebral ischemia in primates.

Lanier WL *et al* (1990) J Cereb Blood Flow Metab 10(2)
PubMedID 2154509

MK-801 blocks NMDA receptor-mediated synaptic transmission and long term potentiation in rat hippocampal slices.

Coan EJ *et al* (1987) Neurosci Lett 80(1)
PubMedID 2821457

The anticonvulsant MK-801 is a potent N-methyl-D-aspartate antagonist.

Wong EH *et al* (1986) Proc Natl Acad Sci U S A 83(18)
PubMedID 3529096