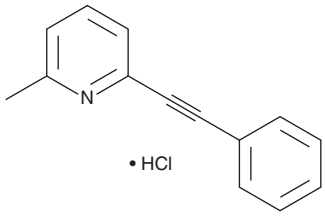
PRODUCT INFORMATION

MPEP (hydrochloride)

Item No. 14536

CAS Registry No.:	219911-35-0
Formal Name:	2-methyl-6-(2-phenylethynyl)-pyridine, monohydrochloride
MF:	$C_{14}H_{11}N \bullet HCl$
FW:	229.7
Purity:	≥98%
UV/Vis.:	λ_{max}: 270, 303, 331 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

MPEP (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the MPEP (hydrochloride) in the solvent of choice, which should be purged with an inert gas. MPEP (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of MPEP (hydrochloride) in these solvents is approximately 30 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of MPEP (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of MPEP (hydrochloride) in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Glutamate, the major excitatory neurotransmitter in the brain, acts on both ionotropic and metabotropic glutamate receptors. Excessive metabotropic glutamate receptor (mGluR) transmission has been linked to epilepsy, ischemia, pain, anxiety, and depression. Eight subtypes (1-8) and multiple splice variants of the mGluR have been identified and grouped based on their pharmacological properties. Group I mGluRs (subtypes 1 and 5) activate the phosphatidyl inositol pathway, while Group II (2 and 3) and Group III (4, 6, 7 and 8) inhibit adenylyl cyclase. MPEP is a potent, highly selective non-competitive antagonist at the mGlu5a receptor subtype (IC_{50} = 36 nM) while having no agonist or antagonist activities at the mGlu1b receptor at concentrations up to 30 µM.[1] MPEP is centrally active following systemic administration *in vivo*, inducing anxiolytic-like effects in rodent models of anxiety and depression when administered at 1-30 mg/kg.[1] MPEP has also been reported as a positive allosteric modulator of mGluR4 at µM concentrations.[2]

References

1. Tatarczynska, E., Klodzinska, A., Chojnacka-Wójcik, E., *et al.* Potential anxiolytic- and antidepressant-like effects of MPEP, a potent, selective and systemically active mGlu5 receptor antagonist. *Br. J. Pharmacol.* **132(7),** 1423-1430 (2001).
2. Mathiesen, J.M., Svendsen, N., Bräuner-Osborne, H., *et al.* Positive allosteric modulation of the human metabotropic glutamate receptor 4 (hmGluR4) by SIB-1893 and MPEP. *Br. J. Pharmacol.* **138(6),** 1026-1030 (2003).

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