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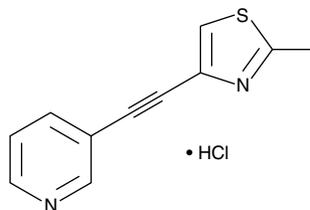
Product Information



MTEP (hydrochloride)

Item No. 14961

CAS Registry No.: 1186195-60-7
Formal Name: 3-[2-(2-methyl-4-thiazolyl)ethynyl]-pyridine, monohydrochloride
MF: C₁₁H₈N₂S • HCl
FW: 236.7
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 283, 299 nm



Laboratory Procedures

For long term storage, we suggest that MTEP (hydrochloride) be stored as supplied at -20°C. It should be stable for at least two years.

MTEP (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the MTEP (hydrochloride) in the solvent of choice. MTEP (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of MTEP (hydrochloride) in these solvents is approximately 2, 15, and 3 mg/ml, respectively.

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 MTEP (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of MTEP (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

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. MTEP is a negative allosteric modulator of the mGlu5a receptor subtype (K_i = 42 nM; IC₅₀ = 110 nM).¹ MTEP at 0.3 mg/kg produces antidepressant effects in several rodent models of depression.² It also demonstrates neuroprotective potential by preventing excitotoxic neuronal damage when administered through either intrahippocampal or intraperitoneal injection.³ Additionally, MTEP demonstrates an anxiolytic-like phenotype in rodent models similar to that of benzodiazepines while lacking undesirable sedative and addictive effects.⁴

References

1. Keck, T.M., Zou, M.-F., Zhang, P., *et al.* Metabotropic glutamate receptor 5 negative allosteric modulators as novel tools for *in vivo* investigation. *ACS Med. Chem. Lett.* **3**(7), 544-549 (2012).
2. Pomierny-Chamiolo, L., Poleszak, E., Pilc, A., *et al.* NMDA but not AMPA glutamatergic receptors are involved in the antidepressant-like activity of MTEP during the forced swim test in mice. *Pharmacol. Rep.* **62**(6), 1186-1190 (2010).
3. Domin, H., Zieba, B., Golembiowska, K., *et al.* Neuroprotective potential of mGluR5 antagonist MTEP: Effects on kainate-induced excitotoxicity in the rat hippocampus. *Pharmacol. Rep.* **62**(6), 1051-1061 (2010).
4. Busse, C.S., Brodtkin, J., Tattersall, D., *et al.* The behavioral profile of the potent and selective mGlu5 receptor antagonist 3-[(2-methyl-1,3-thiazol-4-yl)ethynyl] pyridine (MTEP) in rodent models of anxiety. *Neuropsychopharmacology* **29**(11), 1971-1979 (2004).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/14961

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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