

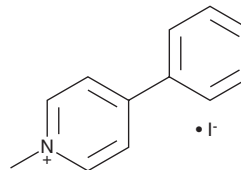
PRODUCT INFORMATION



MPP⁺ Iodide

Item No. 16958

CAS Registry No.: 36913-39-0
Formal Name: 1-methyl-4-phenyl-pyridinium, monoiodide
Synonym: N-Methyl-4-Phenylpyridinium Iodide
MF: C₁₂H₁₂N • I
FW: 297.1
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years
Special Conditions: Light sensitive



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

Laboratory Procedures

MPP⁺ iodide is supplied as a solid. MPP⁺ iodide is soluble in water at a concentration of up to approximately 100 mM. We do not recommend storing the aqueous solution for more than one day.

Description

MPP⁺ is an active metabolite of MPTP, a neurotoxin used to cause selective destruction of dopaminergic neurons in animal models of parkinsonism.¹⁻⁴ MPP⁺ induces neurotoxicity primarily by inhibiting complex I of the mitochondrial electron transport chain, resulting in ATP depletion and increased oxidative stress.⁵ The key features of different neurotoxic models of Parkinson's disease, including the MPTP model, have been detailed.⁵

References

1. Burns, R.S., Chiueh, C.C., Markey, S.P., *et al.* A primate model of parkinsonism: Selective destruction of dopaminergic neurons in the pars compacta of the substantia nigra by N-methyl-4-phenyl-1,2,3,6-tetrahydropyridine. *Proc. Natl. Acad. Sci. USA* **80(14)**, 4546-4550 (1983).
2. Fritz, R.R., Abell, C.W., Patel, N.T., *et al.* Metabolism of the neurotoxin in MPTP by human liver monoamine oxidase B. *FEBS Lett.* **186(2)**, 224-228 (1985).
3. Javitch, J.A., D'Amato, R.J., Strittmatter, S.M., *et al.* Parkinsonism-inducing neurotoxin, N-methyl-4-phenyl-1,2,3,6-tetrahydropyridine: Uptake of the metabolite N-methyl-4-phenylpyridine by dopamine neurons explains selective toxicity. *Proc. Natl. Acad. Sci. USA* **82(7)**, 2173-2177 (1985).
4. Goshima, Y., Misu, Y., Arai, N., *et al.* Nanomolar L-dopa facilitates release of dopamine via presynaptic β -adrenoceptors: Comparative studies on the actions in striatal slices from control and 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP)-treated C57 black mice, an animal model for Parkinson's disease. *Jpn. J. Pharmacol.* **55(1)**, 93-100 (1991).
5. Tieu, K. A guide to neurotoxic animal models of Parkinson's disease. *Cold Spring Harb. Perspect. Med.* **1(1)** (2011).

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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