

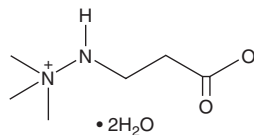
PRODUCT INFORMATION



Mildronate (hydrate)

Item No. 15997

CAS Registry No.: 86426-17-7
Formal Name: 2-(2-carboxyethyl)-1,1,1-trimethylhydrazinium, inner salt, dihydrate
Synonyms: Meldonium, MET-88, Quaterine, THP
MF: C₆H₁₄N₂O₂ • 2H₂O
FW: 182.2
Purity: ≥98%
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

Mildronate (hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the mildronate (hydrate) in the solvent of choice, which should be purged with an inert gas. Mildronate (hydrate) is soluble in the organic solvent ethanol at a concentration of approximately 25 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 mildronate (hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of mildronate (hydrate) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Mildronate is a structural analog of γ -butyrobetaine (γ BB), an intermediate in the biosynthesis of carnitine. It blocks carnitine synthesis by inhibiting γ BB hydroxylase ($IC_{50} = 62 \mu M$) and, less potently, carnitine acetyltransferase ($K_i = 1.6 mM$).¹⁻³ Through these actions, mildronate reduces the levels of free carnitine and long chain acyl carnitine.⁴⁻⁵ This leads to suppressed fatty acid metabolism and mitochondrial uncoupling during oxidative conditions, resulting in cardioprotective and neuroprotective effects.⁴⁻⁶ Mildronate also improves cognition and reduces amyloid- β pathology in a mouse model of Alzheimer's disease.⁷

References

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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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