

Product Data Sheet

Product Name: Mildronate (hydrate)

Cat. No.: GC44196

Chemical Properties

Cas. No. 86426-17-7

SMILES [O-]C(CCN[N+](C)(C)C)=O.O.O

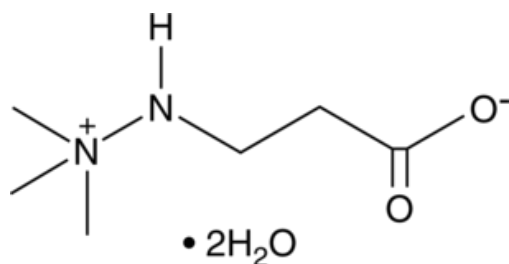
Formula C6H14N2O2·2H2O M.Wt 182.2

Solubility Ethanol: 25 mg/ml, PBS (pH 7.2): 10 mg/ml Storage Store at 2-8°C

General For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the tips ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Evaluation sample solution: ship with blue ice All other available size: ship with RT, or Condition blue ice upon request.

Structure



Background

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 ($K_i = 1.6 mM$). Through these actions, mildronate reduces the levels of free carnitine and long chain acyl carnitine. This leads to suppressed fatty acid metabolism and mitochondrial uncoupling during oxidative conditions, resulting in cardioprotective and neuroprotective effects. Mildronate also improves cognition and reduces amyloid- β pathology in a mouse model of Alzheimer's disease.

Caution: Product has not been fully validated for medical applications. For research use only.

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