Milrinone
Item No. 13357

CAS Registry No.: 78415-72-2
Formal Name: 1,6-dihydro-2-methyl-6-oxo-[3,4’-bipyridine]-5-carbonitrile
Synonyms: Primacor®, WIN 47,203
MF: C_{12}H_{9}N_{3}O
FW: 211.2
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis: λ_{max} 214, 270, 344 nm

Laboratory Procedures
For long term storage, we suggest that milrinone be stored as supplied at -20°C. It should be stable for at least two years.
Milrinone is supplied as a crystalline solid. A stock solution may be made by dissolving the milrinone in the solvent of choice. Milrinone is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of milrinone in these solvents is approximately 0.3 mg/ml.
If aqueous stock solutions are required for biological experiments, they can best be prepared by diluting the organic solvent into aqueous buffers or isotonic saline. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.
Phosphodiesterase 3 (PDE3) family members have high-affinities for both cAMP and cGMP and show cGMP-dependent inhibition of cAMP hydrolysis. Milrinone is a potent inhibitor of PDE3s, inhibiting recombinant PDE3A and PDE3B with IC_{50} values of 0.45 and 1.0 μM, respectively.1 It less effectively inhibits other PDE isoforms, with IC_{50} values of 263, >300, 17.5, 49.1, and 58.3 μM for PDE1, PDE2, PDE4, PDE5, and PDE7, respectively.1 Milrinone has positive inotropic (stimulates cardiac muscle contractions) and vasodilatory effects when administered in vivo.2-4

References

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