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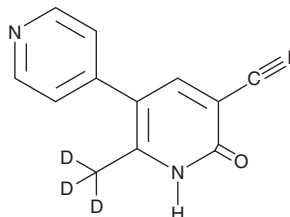
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PRODUCT INFORMATION



Milrinone-d₃ Item No. 25429

Formal Name: 1,6-dihydro-2-methyl-d₃-6-oxo-[3,4'-bipyridine]-5-carbonitrile
MF: C₁₂H₆D₃N₃O
FW: 214.2
Chemical Purity: ≥98% (Milrinone)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Milrinone-d₃ is intended for use as an internal standard for the quantification of milrinone (Item No. 13357) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Milrinone-d₃ is supplied as a solid. A stock solution may be made by dissolving the milrinone-d₃ in the solvent of choice. Milrinone-d₃ is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of milrinone-d₃ in these solvents is approximately 0.5 and 0.3 mg/ml, respectively.

Description

Milrinone is an inhibitor of type 3 phosphodiesterases (PDEs), inhibiting recombinant PDE3A and PDE3B with IC₅₀ values of 0.45 and 1 μM, respectively.¹ It is selective for PDE3 over PDE1, PDE2, PDE4, PDE5, and PDE7 (IC₅₀s = 263, >300, 17.5, 49.1, and 58.3 μM, respectively).¹ Milrinone (0.1-1 mg/kg) has positive inotropic effects, increasing cardiac contractile force in anesthetized dogs with a concomitant increase in heart rate but not blood pressure.² It also increases contractile force in models of propranolol- and verapamil-induced heart failure in anesthetized dogs when administered at an initial dose of 30 μg/kg followed by a continuous 3 μg/kg per minute infusion. Milrinone has vasodilatory effects as well, decreasing mean aortic pressure and increasing venous compliance in anesthetized dogs when administered at an initial dose of 10 μg/kg followed by a continuous 1.7-2.4 μg/kg per minute infusion.³ Formulations containing milrinone have been used in the treatment of heart failure.

References

1. Sudo, T., Tachibana, K., Toga, K., *et al.* Potent effects of novel anti-platelet aggregatory cilostamide analogues on recombinant cyclic nucleotide phosphodiesterase isozyme activity. *Biochem. Pharmacol.* **59**(4), 347-356 (2000).
2. Alousi, A.A., Canter, J.M., Montenaro, M.J., *et al.* Cardiotonic activity of milrinone, a new and potent cardiac bipyridine, on the normal and failing heart of experimental animals. *J. Cardiovasc. Pharmacol.* **5**(5), 792-803 (1983).
3. Lee, R.W., Gay, R.G., Lancaster, L.D., *et al.* Dog model to study the effects of pharmacologic agents on the peripheral circulation: Effects of milrinone. *J. Pharmacol. Exp. Ther.* **240**(3), 1014-1019 (1987).

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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