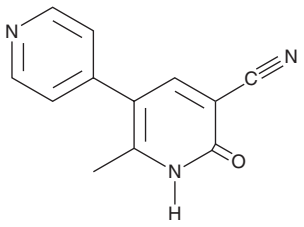
PRODUCT INFORMATION

Milrinone

Item No. 13357

CAS Registry No.:	78415-72-2
Formal Name:	1,6-dihydro-2-methyl-6-oxo-[3,4'-bipyridine]-5-carbonitrile
Synonym:	WIN 47,203
MF:	$C_{12}H_9N_3O$
FW:	211.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 214, 270, 344 nm
Supplied as:	A crystalline 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 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 0.5 and 0.3 mg/ml, respectively.

Description

Milrinone is an inhibitor of type 3 phosphodiesterases (PDEs), inhibiting recombinant PDE3A and PDE3B with IC_{50} values of 0.45 and 1 µM, respectively.[1] It is selective for PDE3 over PDE1, PDE2, PDE4, PDE5, and PDE7 (IC_{50}s = 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 phophodiesterase 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).

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