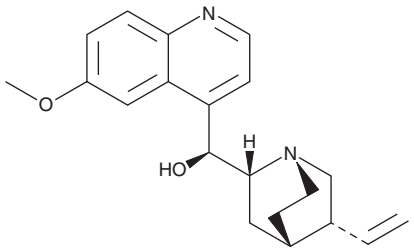
PRODUCT INFORMATION

Quinidine

Item No. 20356

CAS Registry No.:	56-54-2
Formal Name:	6'-methoxy-cinchonan-9S-ol
Synonyms:	(+)-Quinidine, β-Quinidine
MF:	$C_{20}H_{24}N_2O_2$
FW:	324.4
Purity:	≥95% (may contain up to 15% hydroquinidine)
UV/Vis.:	λ_{max}: 232, 280, 334 nm
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

Quinidine is supplied as a crystalline solid. A stock solution may be made by dissolving the quinidine in the solvent of choice, which should be purged with an inert gas. Quinidine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of quinidine in these solvents is approximately 1, 25, and 30 mg/ml, respectively.

Quinidine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, quinidine should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Quinidine has a solubility of approximately 0.33 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Quinidine is a stereoisomer of the antimalarial agent quinine (Item No. 23958) and a class Ia antiarrhythmic agent.[1,2] Quinidine blocks the voltage-gated sodium (Na_v) channel $Na_v1.5$ in a use-dependent manner.[1] It decreases the amplitude and duration of action potentials in isolated canine ventricular myocytes.[3] It inhibits K_{Kr}, peak I_{Na}, and late I_{Na} (IC_{50}s = 4.5, 11, and 12 µM, respectively) and can induce torsade de pointes in isolated rabbit hearts when used at a concentration of 1 µM.[2] Quinidine induces QT prolongation in dogs.[4] It also binds to M_2 muscarinic acetylcholine receptors (K_i = 7.5 µM for human recombinant receptors expressed in HM2-B10 cells).[5] Formulations containing quinidine have been used in the treatment of atrial fibrillation and ventricular arrhythmias.

References

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2. Wu, L., Guo, D., Li, H., *et al.* Role of late sodium current in modulating the proarrhythmic and antiarrhythmic effects of quinidine. *Heart Rhythm* **5(12)**, 1726-1734 (2008).
3. Salata, J.J. and Wasserstrom, J.A. Effects of quinidine on action potentials and ionic currents in isolated canine ventricular myocytes. *Circ. Res.* **62(2)**, 324-337 (1988).
4. Rakhit, A., Guentert, T.W., Holford, N.H.G., *et al.* Pharmacokinetics and pharmacodynamics of quinidine and its metabolite, quinidine-N-oxide, in beagle dogs. *Eur. J. Drug Metab. Pharmacokinet.* **9(4)**, 315-324 (1984).
5. Kovacs, I., Yamamura, H.I., Waite, S.L., *et al.* Pharmacological comparison of the cloned human and rat M2 muscarinic receptor genes expressed in the murine fibroblast (B82) cell line. *J. Pharmacol. Exp. Ther.* **284(2)**, 500-507 (1998).

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