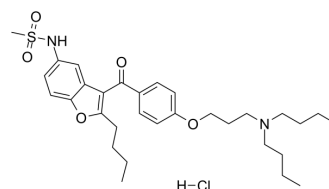


Dronedarone Hydrochloride

Cat. No.:	HY-75839
CAS No.:	141625-93-6
Molecular Formula:	C ₃₁ H ₄₅ ClN ₂ O ₅ S
Molecular Weight:	593.22
Target:	Potassium Channel; Autophagy
Pathway:	Membrane Transporter/Ion Channel; Autophagy
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 25 mg/mL (42.14 mM; Need ultrasonic)																									
	H ₂ O : < 0.1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble)																									
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th colspan="3">Concentration</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Preparing Stock Solutions</td> <td>1 mM</td> <td>1.6857 mL</td> <td>8.4286 mL</td> <td>16.8572 mL</td> </tr> <tr> <td>5 mM</td> <td>0.3371 mL</td> <td>1.6857 mL</td> <td>3.3714 mL</td> </tr> <tr> <td>10 mM</td> <td>0.1686 mL</td> <td>0.8429 mL</td> <td>1.6857 mL</td> </tr> <tr> <td colspan="4">Please refer to the solubility information to select the appropriate solvent.</td> </tr> </tbody> </table>	Solvent	Mass	Concentration			1 mg	5 mg	10 mg	Preparing Stock Solutions	1 mM	1.6857 mL	8.4286 mL	16.8572 mL	5 mM	0.3371 mL	1.6857 mL	3.3714 mL	10 mM	0.1686 mL	0.8429 mL	1.6857 mL	Please refer to the solubility information to select the appropriate solvent.			
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In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (4.21 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (4.21 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (4.21 mM); Clear solution 																									

BIOLOGICAL ACTIVITY

Description	Dronedarone Hydrochloride is a non-iodinated amiodarone derivative that inhibits Na ⁺ , K ⁺ and Ca ²⁺ currents.
In Vitro	Dronedarone (SR-33589) is a multichannel blocker for atrial fibrillation . It is a potent inhibitor of the acetylcholine-activated K ⁺ current from atrial and sinoatrial nodal tissue, and inhibits the rapid delayed rectifier more potently than slow and inward rectifier K ⁺ currents and inhibits L-type calcium current. Under whole-cell patch clamp, it blocks I _{Kr} (IC ₅₀ =3 μM) and I _{Ca-L} (IC ₅₀ =0.18 μM). The effects on I _{Ca-L} are use- and frequency-dependent. Dronedarone inhibits current carried by human ether-a-go-go gene (HERG)-expressing oocytes (analagous to I _{Kr}) with an IC ₅₀ of 9 μM ^[1] . In guinea pig ventricular myocytes, dronedarone exhibits a state dependent inhibition of the fast Na ⁺ channel current with an IC ₅₀ of 0.7±0.1 μM, when the

	<p>holding potential is -80 mV^[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>Dronedarone (Hydrochloride) reduces significantly the incidence of ventricular fibrillation (VF) from 80 to 30% ($p < 0.05$) at 3 mg/kg i.v. and eliminated VF and mortality at 10 mg/kg i.v.^[3]. Dronedarone inhibited carotid artery thrombus formation in vivo. Thrombin- and collagen-induced platelet aggregation is impaired in dronedarone-treated mice ($P < 0.05$), and expression of plasminogen activator inhibitor-1 (PAI1), an inhibitor of the fibrinolytic system, is reduced in the arterial wall^[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

PROTOCOL

Animal Administration^{[3][4]}

Rats: Rats are anesthetized, artificially ventilated, and the thorax opened by a left thoracotomy. Ischemia is induced by left coronary artery ligation, and reperfusion is achieved (after a 5-min period of ischemia) in a separate group of rats by removing the ligature. Agents are given intravenously 5 min before occlusion or orally 4 h before study^[3].

Mice: Twelve-week-old C57Bl/6 mice are divided into two groups: dronedarone (200 mg/kg body weight with a once daily oral gavage for 14 days) or control (1.4 % methylcellulose). Twenty-four hours after the last application, mice are anesthetized by intraperitoneal injection of 87 mg/kg sodium pentobarbital. Rose bengal is diluted to 12 mg/mL in phosphate-buffered saline and then injected into the tail vein at a concentration of 63 mg/kg^[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. Bogdan R, et al. Effect of dronedarone on Na^+ , Ca^{2+} and HCN channels. *Naunyn-Schmiedeberg's Arch Pharmacol.* 2011 Apr;383(4):347-56.
- [2]. Doggrell SA, et al. Dronedarone: an amiodarone analogue. *Expert Opin Investig Drugs.* 2004 Apr;13(4):415-26.
- [3]. Manning AS, et al. SR 33589, a new amiodarone-like agent: effect on ischemia- and reperfusion-induced arrhythmias in anesthetized rats. *J Cardiovasc Pharmacol.* 1995 Sep;26(3):453-61.
- [4]. Breitenstein A, et al. Dronedarone reduces arterial thrombus formation. *Basic Res Cardiol.* 2012 Nov;107(6):302.

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

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