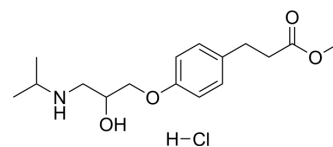


Esmolol hydrochloride

Cat. No.:	HY-B1392
CAS No.:	81161-17-3
Molecular Formula:	C ₁₆ H ₂₆ ClNO ₄
Molecular Weight:	331.83
Target:	Adrenergic Receptor; Autophagy; Mitophagy
Pathway:	GPCR/G Protein; Neuronal Signaling; 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 : ≥ 100 mg/mL (301.36 mM)
 H₂O : ≥ 50 mg/mL (150.68 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.0136 mL	15.0680 mL	30.1359 mL
	5 mM	0.6027 mL	3.0136 mL	6.0272 mL
	10 mM	0.3014 mL	1.5068 mL	3.0136 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: PBS
Solubility: 100 mg/mL (301.36 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.75 mg/mL (8.29 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.75 mg/mL (8.29 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.75 mg/mL (8.29 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Esmolol hydrochloride is a beta adrenergic receptor blocker.
IC₅₀ & Target	Adrenergic receptor
In Vitro	Esmolol hydrochloride is the hydrochloride salt form of Esmolol, a short and rapid-acting beta adrenergic antagonist

belonging to the class II anti-arrhythmic drugs and devoid of intrinsic sympathomimetic activity. Esmolol hydrochloride competitively blocks beta-1 adrenergic receptors in cardiac muscle and reduces the contractility and cardiac rate of heart muscle, thereby decreasing cardiac output and myocardial oxygen demands. This agent also decreases sympathetic output centrally and blocks renin secretion. At higher doses, Esmolol hydrochloride also blocks beta-2 receptors located in bronchial and vascular smooth muscle, thereby leading to smooth muscle relaxation.

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

CUSTOMER VALIDATION

- Clin Chem. 2019 Dec;65(12):1522-1531.
- EMBO Rep. 2022 Apr 11;e53932.
- J Pharmaceut Biomed. 2020, 113870.

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

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