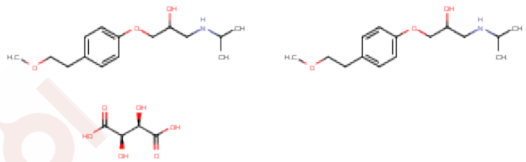
Data Sheet (Cat.No.T0487)

TargetMol

Metoprolol tartrate

Chemical Properties



CAS No. : 56392-17-7

Formula: C15H25NO3.2:1C4H6O6

Molecular Weight: 684.81

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Metoprolol Tartrate is a blocker of the cardioselective β-adrenergic receptor.
Targets(IC50)	Adrenergic Receptor
In vitro	Metoprolol, attenuates cardiomyocyte apoptosis in left ventricular (LV) myocardium of dogs with heart failure (HF). Metoprolol induces the expression of Bcl-2 independent of heart failure (HF) and that this independently confers protection. [1]
In vivo	Metoprolol partly reverses the depressed left ventricular (LV) systolic pressure, positive and negative rates of changes in pressure development, ejection fraction, fractional shortening and cardiac output, as well as increased LV end-diastolic pressure in 20 weeks myocardial infarction (MI) rats. Metoprolol partially reverses the elevated levels of plasma norepinephrine and dopamine without affecting the elevated levels of epinephrine. [2] Metoprolol treatment attenuates the development of cardiac dysfunction in streptozotocin (STZ)-diabetic rats. Metoprolol leads to reduced rates of palmitate oxidation, stimulation of glucose oxidation, and increases tissue ATP levels. Metoprolol leads to decreased maximum activity and decreased sensitivity of carnitine palmitoyltransferase I to malonyl-CoA. Metoprolol also increases sarco(endo) plasmic reticulum Ca(2+)-ATPase expression and prevents the reexpression of atrial natriuretic peptide in diabetic hearts of in streptozotocin (STZ)-diabetic rats. [3] Metoprolol, attenuates the increase in collagen content in noninfarcted regions and prevents the increase in right ventricular weight/body weight, and its effect is similar to captopril in rat model with myocardial infarction (MI). Metoprolol treatment tends to increase right ventricular weight and heart weight. [4]

Solubility Information

Solubility	DMSO: 34.2 mg/mL (49.94 mM),Sonication is recommended. H2O: 34.2 mg/mL (49.94 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.4603 mL	7.3013 mL	14.6026 mL
5 mM	0.2921 mL	1.4603 mL	2.9205 mL
10 mM	0.146 mL	0.7301 mL	1.4603 mL
50 mM	0.0292 mL	0.146 mL	0.2921 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Sabbah HN, et al. J Am Coll Cardiol,2000, 36(5), 1698-1705.
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Babick A, et al. J Cell Physiol,2013, 228(10), 2063-2070.
Cui L, Xu F, Jiang Z, et al. Melatonin regulates proliferation and apoptosis of endometrial stromal cells via MT1. Acta Biochimica et Biophysica Sinica. 2021
Sharma V, et al. Am J Physiol Heart Circ Physiol,2008, 294(4), H1609-1620.
Wei S, et al. J Am Coll Cardiol,2000, 36(1), 276-281.