Nadolol

Cat. No.: HY-B0804

CAS No.: 42200-33-9

Molecular Formula: $C_{17}H_{27}NO_4$

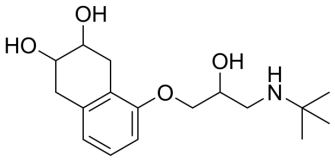
Molecular Weight: 309.4

Target: Adrenergic Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (323.21 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.2321 mL	16.1603 mL	32.3206 mL
	5 mM	0.6464 mL	3.2321 mL	6.4641 mL
	10 mM	0.3232 mL	1.6160 mL	3.2321 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.08 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.08 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.08 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Nadolol (SQ-11725) is a non-selective and orally active β-adrenergic receptors blocker and is a substrate of organic anion transporting polypeptide 1A2 (OATP1A2). Nadolol has the the potential for high blood pressure, angina pectoris and vascular headaches research[1][2][3].

IC_{50} & Target

β adrenergic receptor

In Vitro

In human embryonic kidney 293 cells, (-)-Epigallocatechin gallate (EGCG) competitively inhibits OATP1A2-mediated uptake

	of Nadolol with a K_i value of 19.4 μM. With respect to Nadolol, the K_m for OATP1A2 is 84 μM[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	In male OF1 mice bearing B16F10 tumor cells, blocking the neuroendocrine response through the administration of Nadolol (20 mg/kg) results in fewer and smaller pulmonary metastatic foci in subjects exposed to acute social stress[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Pharmaceut Biomed. 2020, 113870.

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REFERENCES

[1]. Johannes C von Alvensleben, et al. Nadolol for Treatment of Supraventricular Tachycardia in Infants and Young Children. Pediatr Cardiol. 2017 Mar;38(3):525-530.

[2]. Osamu Abe, et al. Role of (-)-Epigallocatechin Gallate in the Pharmacokinetic Interaction Between Nadolol and Green Tea in Healthy Volunteers. Eur J Clin Pharmacol. 2018 Jun;74(6):775-783.

[3]. O Vegas, et al. Effects of Antalarmin and Nadolol on the Relationship Between Social Stress and Pulmonary Metastasis Development in Male OF1 Mice. Behav Brain Res. 2009 Dec 14;205(1):200-6.

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

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