Denopamine

Cat. No.: HY-119515

CAS No.: 71771-90-9

Molecular Formula: $C_{18}H_{23}NO_4$

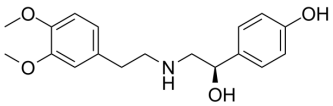
Molecular Weight: 317.38

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 : 5 mg/mL (15.75 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.1508 mL	15.7540 mL	31.5080 mL
	5 mM	0.6302 mL	3.1508 mL	6.3016 mL
	10 mM	0.3151 mL	1.5754 mL	3.1508 mL

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

BIOLOGICAL ACTIVITY

Description

Denopamine ((R)-(-)-Denopamine) is an orally active, selective β1-adrenergic agonist. Denopamine prolongs survival in a murine model of congestive heart failure induced by viral myocarditis: suppression of tumor necrosis factor-α production in the heart. Cardiovascular effects[1].

In Vitro

Denopamine (0.1-100 μM) suppresses LPS-induced TNF-α production in a concentration-dependent manner[1].

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

Cell Viability Assay[1]

Cell Line:	Murine spleen cells
Concentration:	0, 0.1, 1, 10, 100 μM
Incubation Time:	5 hours
Result:	Decreased TNF-α levels by 96.9±6.7%, 62.7±6.5%, 53.2±8.8%, and 40.3±1.5% at 0.1, 1, 10 and 100 μmol/L, respectively.

In Vivo

Denopamine (14 μmol/kg per day; oral administration; for 14 days) significantly improves the survival of the animals, attenuates myocardial lesions, and suppresses TNF-α production in vivo[1].

The plasma concentration of Denopamine is 13.1±1.9 nmol/L at 1 h, 4.3±0.9 nmol/L at 2 h, 1.8±0.5 nmol/L at 3 h, and <0.6 nmol/L at 5 h after its administration. A single 14 μmol/kg dose of denopamine in mice produces a peak level at 1 h[1].

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

Animal Model:	Four-week-old inbred male DBA/2 mice[1]
Dosage:	14 μmol/kg per day
Administration:	Oral administration; 14 days
Result:	Treatment significantly improved the survival of the animals (14 of 25 (56%) treated, vs 5 of 25 (20%) control mice). At day 14, the survival rate of 57.1% (16 of 28 mice) in the treated group was significantly higher than the 33.3% (10 of 30 mice) survival rate in the control group. The survival rate from day 6 to day 14 was also significantly improved in the treated group (69.6%; 16 of 23 mice) versus the control group (45.5%; 10 of 22 mice, $p < 0.05$).

REFERENCES

[1]. R Nishio, et al. Denopamine, a beta1-adrenergic agonist, prolongs survival in a murine model of congestive heart failure induced by viral myocarditis: suppression of tumor necrosis factor-alpha production in the heart. J Am Coll Cardiol. 1998 Sep;32(3):80

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