Vesnarinone

Cat. No.: HY-15297

CAS No.: 81840-15-5

Molecular Formula: $C_{22}H_{25}N_3O_4$

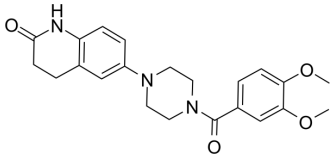
Molecular Weight: 395.45

Target: Phosphodiesterase (PDE)

Pathway: Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 16.67 mg/mL (42.15 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.5288 mL	12.6438 mL	25.2876 mL
5 mM	0.5058 mL	2.5288 mL	5.0575 mL
10 mM	0.2529 mL	1.2644 mL	2.5288 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: ≥ 1.67 mg/mL (4.22 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.67 mg/mL (4.22 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.67 mg/mL (4.22 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Vesnarinone (OPC-8212) is an orally active phosphodiesterase 3 (PDE3) inhibitor. Vesnarinone can increase in calcium flux and decrease in potassium flux. Vesnarinone shows dose-dependent positive inotropic activity. Vesnarinone can be used in heart failure research[1][2][3][4].

In Vitro

Vesnarinone (60 and 100 μg/mL; 48 h) inhibits the cell growth in a dose-dependent manner[3].
Vesnarinone (60 μg/mL; 48 h) induces G1 arrest and apoptosis[3].
Vesnarinone (60 μg/mL; 0, 12, 24, and 48 h) treatment increases p21-mRNA expression and decreases p21 protein slightly[3].

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

Cell Viability Assay[3]

Cell Line:	OSC3, OSC4, and OSC5 cells
Concentration:	60 μg/mL and 100 μg/mL
Incubation Time:	48 hours
Result:	Observed more than 50% inhibition in cells treated with 100 μg/mL, and reduced 30±40% the production of MTT formazan in cells treated with 60 μg/mL.

Apoptosis Analysis[3]

Cell Line:	OSC3, OSC4, and OSC5 cells
Concentration:	60 μg/mL
Incubation Time:	48 hours
Result:	Decreased the tumor cell population in the S phase and increased in the G1 phase.

Western Blot Analysis[3]

Cell Line:	OSC3, OSC4, and OSC5 cells
Concentration:	60 μg/mL
Incubation Time:	0, 12, 24, and 48 hours
Result:	Increased the expression of p21-mRNA after 12±24 h vesnarinone treatment. Decreased p21 protein slightly after 24 h treatment in OSC4.

In Vivo

Vesnarinone (oral gavage; 300 mg/kg; once daily; 6 w) binds covalently to rat liver in vivo[4].

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

Animal Model:	Female Lewis rats (200 g)[4]
Dosage:	300 mg/kg
Administration:	Oral gavage; 300 mg/kg; once daily; 6 weeks
Result:	Observed covalently modified liver proteins.

CUSTOMER VALIDATION

- Patent. US20230111925A1.

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REFERENCES

[1]. A Matsumori, et al. Vesnarinone, a new inotropic agent, inhibits cytokine production by stimulated human blood from patients with heart failure. Circulation. 1994 Mar;89(3):955-8.

[2]. E Cavusoglu, et al. Vesnarinone: a new inotropic agent for treating congestive heart failure. J Card Fail. 1995 Jun;1(3):249-57.

[3]. K Yoneda, et al. Induction of cyclin-dependent kinase inhibitor p21 in vesnarinone-induced differentiation of squamous cell carcinoma cells. Cancer Lett. 1998 Nov 13;133(1):35-45.

[4]. Iain Gardner, et al. A comparison of the covalent binding of clozapine, procainamide, and vesnarinone to human neutrophils in vitro and rat tissues in vitro and in vivo. Chem Res Toxicol. 2005 Sep;18(9):1384-94.

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