Itanapraced

Cat. No.: HY-14399

CAS No.: 749269-83-8

Molecular Formula: $C_{16}H_{11}Cl_2FO_2$

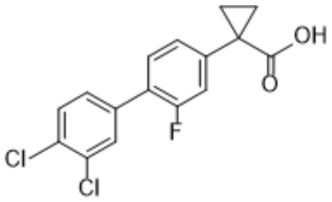
Molecular Weight: 325.16

Target: γ-secretase; Apoptosis

Pathway: Neuronal Signaling; Stem Cell/Wnt; Apoptosis

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 : 100 mg/mL (307.54 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.0754 mL	15.3770 mL	30.7541 mL
	5 mM	0.6151 mL	3.0754 mL	6.1508 mL
	10 mM	0.3075 mL	1.5377 mL	3.0754 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 (7.69 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.69 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Itanapraced (CHF5074) is an orally active γ-secretase modulator and a non-steroidal anti-inflammatory derivative. Itanapraced reduces Aβ42 and Aβ40 secretion with IC_{50} values of 3.6 and 18.4 μM, respectively. Itanapraced inhibits cell apoptosis of hippocampal neurons induced by oxygen and glucose deprivation (OGD). Itanapraced can be used for the research of Alzheimer's disease[1][2].

IC_{50} & Target

IC50 value: 3.6 μM (Aβ42), 18.4 μM (Aβ40)[1]

In Vitro

Itanapraced (0.03-100 μM) inhibits Aβ secretion in human neuroglioma cells (H4swe) expressing APPswe with IC_{50} values of 3.6 and 18.4 μM for Aβ42 and Aβ40, respectively[1].
Itanapraced (5-200 μM) inhibits Notch processing in HEK293swe cells with concentrations over 15 μM[1].

Itanapraced (0-1000 μM; 30 min) dose-dependently inhibits the action potential with an IC_{50} value of 106 μM[2].
Itanapraced (30-100 μM) dose-dependently inhibits excitatory synaptic transmission[2].
Itanapraced (1-10 μM) significantly reduces cell apoptosis in hippocampal neurons induced by oxygen and glucose deprivation (OGD)[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Itanapraced (oral administration; 375 ppm in the diet for 17 weeks) decreases Aβ42 and Aβ40 levels, and brain plaque burden in Tg2576 transgenic mice[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male and female Tg2576 transgenic mice expressing Swedish mutated form of human APP (APPswe)[1]
Dosage:	375 ppm
Administration:	Oral administration; 375 ppm in the diet for 17 weeks
Result:	Reduced total brain Aβ42 and Aβ40 levels, and brain plaque burden in aged Tg2576 mice. Caused no COX-mediated toxic effects in the gastrointestinal tract and Notch-mediated cell differentiation abnormalities in the ileum.

CUSTOMER VALIDATION

- Sci Rep. 2022 Apr 23;12(1):6672.

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REFERENCES

[1]. Imbimbo BP, et al. 1-(3',4'-Dichloro-2-fluoro[1,1'-biphenyl]-4-yl)-cyclopropanecarboxylic acid (CHF5074), a novel gamma-secretasemodulator, reduces brain beta-amyloid pathology in a transgenic mouse model of Alzheimer's disease withoutcausing peripheral toxicity. J Pharmacol Exp Ther. 2007 Dec;323(3):822-830.

[2]. Mango D, et al. Electrophysiological and metabolic effects of CHF5074 in the hippocampus: protection against in vitro ischemia. Pharmacol Res. 2014 Mar;81:83-90.

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