Coumaran

Cat. No.: HY-75247

CAS No.: 496-16-2

Molecular Formula: C_8H_8O

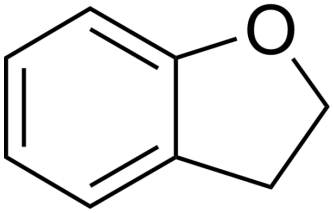
Molecular Weight: 120.15

Target: Cholinesterase (ChE); Endogenous Metabolite; Parasite

Pathway: Neuronal Signaling; Metabolic Enzyme/Protease; Anti-infection

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : 150 mg/mL (1248.44 mM; Need ultrasonic)
DMSO : 150 mg/mL (1248.44 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	8.3229 mL	41.6146 mL	83.2293 mL
	5 mM	1.6646 mL	8.3229 mL	16.6459 mL
	10 mM	0.8323 mL	4.1615 mL	8.3229 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (832.29 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 3.75 mg/mL (31.21 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 3.75 mg/mL (31.21 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3.75 mg/mL (31.21 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Coumaran (2,3-Dihydrobenzofuran) is an AChE inhibitor with antileishmanial activity. Coumaran may acquire antiparasitic capabilities through activation of macrophages and exert immunomodulatory activity. Coumaran can be used as a biopesticide.[2].

IC_{50} & Target	AChE
In Vitro	Coumaran is active against promastigote (IC_{50}=1.042 μM) and amastigote (IC_{50}=1.43 μM) forms, demonstrating potent antileishmanial activity [2]. Coumaran (0.5-13 μM; 48 h) Not significantly cytotoxic to macrophages or erythrocytes [2]. Coumaran (0.5-13 μM; 24 h) increases phagocyte and lysosomal activity and nitrite (NO_{2^-}) level [2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. Cell Viability Assay[2]

Cell Line:	Promastigotes
Concentration:	0.4, 0.8 and 1.6 μM
Incubation Time:	48 h
Result:	Demonstrated a concentration-dependent reduction in infection of macrophages by 7.0, 22.0 and 33.34% for 0.4, 0.8 and 1.6 μM, respectively.

CUSTOMER VALIDATION

- bioRxiv. 2023 Jun 3.

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REFERENCES

[1]. Yallappa Rajashekar, et al. Acetylcholinesterase Inhibition by Biofumigant (Coumaran) From Leaves of Lantana Camara in Stored Grain and Household Insect Pests. Biomed Res Int. 2014;2014:187019.

[2]. de Castro Oliveira LG, et al. In Vitro Effects of the Neolignan 2,3-Dihydrobenzofuran Against Leishmania Amazonensis. Basic Clin Pharmacol Toxicol. 2017 Jan;120(1):52-58.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA