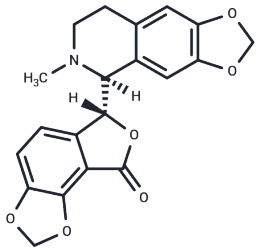
Data Sheet (Cat.No.T2850)

TargetMol

Bicuculline

Chemical Properties



CAS No. : 485-49-4

Formula: C20H17NO6

Molecular Weight: 367.35

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Bicuculline is an alkaloid extracted from Corydalis decumbens, acting as a competitive antagonist of the neurotransmitter GABAA receptor (IC50 = 2 μM). It also blocks Ca2+-activated potassium (SK) channels and inhibits slow afterhyperpolarization (slow AHP). Bicuculline has anticonvulsant effects and is commonly used to establish mouse seizure models.
Targets(IC50)	GABA Receptor
In vivo	(+)-Bicuculline, at concentrations of 1/3 μM, increased the EC50 of gamma-aminobutyric acid (GABA) by 1.6 times (41.0-67.0 μM) and by 3.6 times (36.1-129.0 μM), respectively. This compound also dose-dependently inhibited the Cl- conductance induced by GABA (40 μM) in the range of 1-100 μM. In addition, (+)-Bicuculline inhibited the agonistic effects of GABA (40 μM) on the α1β2γ2L receptor, functioning as an antagonist of the α1β2γ2L GABAA receptor. This action caused a parallel shift in the concentration-effect curve of GABA without affecting its maximum response. Furthermore, (+)-Bicuculline also exhibited inhibitory effects on Ca2+-activated potassium channels.

Solubility Information

Solubility	DMSO: 16.67 mg/mL (45.38 mM),Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (5.44 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7222 mL	13.611 mL	27.222 mL
5 mM	0.5444 mL	2.7222 mL	5.4444 mL
10 mM	0.2722 mL	1.3611 mL	2.7222 mL
50 mM	0.0544 mL	0.2722 mL	0.5444 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Huang SH, et al. Eur J Pharmacol, 2003, 464(1), 1-8.
Huang C, Dong C, Zhu Y, et al. Duhaldea pterocaula (Franch.) Anderb. Attenuates Nociception and Inflammation via GABAA Receptors. Frontiers in Pharmacology. 2021: 3086.
Li L, Kang Y, Cheng R, et al.The de novo synthesis of GABA and its gene regulatory function control hepatocellular carcinoma metastasis.Developmental Cell.2024
Khawaled R, et al. Pflugers Arch, 1999, 438(3), 314-321.