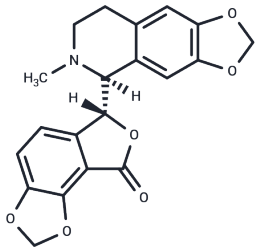
Data Sheet (Cat.No.T2850)

TargetMol

Bicuculline

Chemical Properties



CAS No. : 485-49-4

Formula: C20H17NO6

Molecular Weight: 367.35

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Bicuculline ((+)-Bicuculline) is a light-sensitive competitive antagonist of GABAA receptors, originally identified in 1932 from plant alkaloid extracts, and isolated from Dicentra cucullaria, Adlumia fungosa, Fumariaceae, and various Corydalis species.
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 (45.37 mM),Sonication is recommended. Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)

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.

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.

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