Epiberberine

Cat. No.: HY-N0226

CAS No.: 6873-09-2

Molecular Formula: $C_{20}H_{18}NO_4^+$

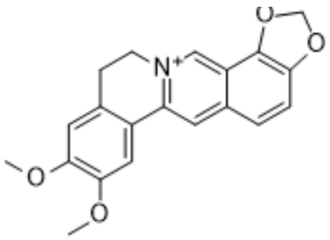
Molecular Weight: 336.36

Target: Cholinesterase (ChE); Beta-secretase

Pathway: Neuronal Signaling

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 : 3.33 mg/mL (9.90 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.9730 mL	14.8650 mL	29.7301 mL
	5 mM	0.5946 mL	2.9730 mL	5.9460 mL
	10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

Epiberberine is an alkaloid isolated from Coptis chinensis, acts as a potent AChE and BChE inhibitor, and a non-competitive BACE1 inhibitor, with IC_{50}s of 1.07, 6.03 and 8.55 μM, respectively. Epiberberine has antioxidant activity, with peroxynitrite $ONOO^-$ scavenging effect (IC_{50}, 16.83 μM), and can be used for the research of Alzheimer disease[1]. Epiberberine inhibits the early stage of differentiation of 3T3-L1 preadipocytes, downregulates the Raf/MEK1/2/ERK1/2 and AMPKα/Akt pathways[2]. Epiberberinecan be used for the research of diabetic disease[3].

IC_{50} & Target	AChE	BACE1	BChE

In Vitro

Epiberberine (0, 12.5, 25, or 50 μM) dose-dependently inhibits cellular triglyceride accumulation in 3T3-L1 adipocytes, with an IC_{50} of 52.8 μM[2].

Epiberberine (12.5-50 μM) suppresses the Raf/MEK1/ERK1/2 and AMPKα/Akt pathways in the early stage of 3T3-L1 adipocyte differentiation[2].

Epiberberine (0.2, 1, 5 μg/mL) inhibits glucose uptake in HepG2 cells in a concentration-dependent manner[3].

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

In Vivo	Epiberberine (225 mg/kg, p.o. daily for 40 days) reduces body weight, food consumption, water intake, and urinary output of KK-Ay mice[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Aging (Albany NY). 2021 Oct 9;13(19):23193-23209.
- Molecules. 2024 May 14.
- J Biomol Struct Dyn. 2022 Dec 29;1-38.

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REFERENCES

[1]. Jung HA, et al. Anti-Alzheimer and antioxidant activities of Coptidis Rhizoma alkaloids. Biol Pharm Bull. 2009 Aug;32(8):1433-8.

[2]. Choi JS, et al. Anti-adipogenic effect of epiberberine is mediated by regulation of the Raf/MEK1/2/ERK1/2 and AMPKα/Akt pathways. Arch Pharm Res. 2015 Dec;38(12):2153-62.

[3]. Ma H, et al. Antihyperglycemia and Antihyperlipidemia Effect of Protoberberine Alkaloids From Rhizoma Coptidis in HepG2 Cell and Diabetic KK-Ay Mice. Drug Dev Res. 2016 Jun;77(4):163-70.

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