Bakuchiol

Cat. No.: HY-N0235

CAS No.: 10309-37-2

Molecular Formula: $C_{18}H_{24}O$

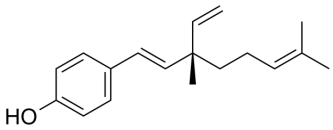
Molecular Weight: 256.38

Target: p38 MAPK; Autophagy

Pathway: MAPK/ERK Pathway; Autophagy

Storage: -20°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 62.5 mg/mL (243.78 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.9005 mL	19.5023 mL	39.0046 mL
	5 mM	0.7801 mL	3.9005 mL	7.8009 mL
	10 mM	0.3900 mL	1.9502 mL	3.9005 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.17 mg/mL (8.46 mM); Clear solution

2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.17 mg/mL (8.46 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Bakuchiol is a phytoestrogen isolated from the seeds of Psoralea corylifolia L; has anti-tumor effects.IC50 value:Target:in vitro: Bakuchiol reduced mitochondrial membrane potential (Psim) of cells in a concentration- and time-dependent manner, showing a more potent effect than that of resveratrol. S phase arrest, caspase 9/3 activaton, p53 and Bax up-regulation, as well as Bcl-2 down-regulation were observed in bakuchiol-treated A549 cells [1]. UGT2B7 was inhibited by the strongest intensity. The noncompetitive inhibition was demonstrated by the results obtained from Dixon plot and Lineweaver-Burk plot. The Ki value was calculated to be 10.7 μM [2]. Bakuchiol was found to be naturally occurring potent inhibitors of hCE2, with low Ki values ranging from 0.62μM to 3.89μM [3]. After exposure to bakuchiol at 0.25-fold, 0.5-fold and 1-fold of minimum inhibitory concentration (MIC) (3.91 μg/ml) for 24h, the fungal conidia of T. mentagrophytes demonstrated a significant dose-dependent increase in membrane permeability. Moreover, bakuchiol at 1-fold MIC elicited a 187% elevation in reactive oxygen species (ROS) level in fungal cells after a 3-h incubation [4].in vivo: In combination with the reported concentration after an intravenous administration of bakuchiol (15 mg/kg) in rats, the high risk of in vivo

inhibition of bakuchiol towards UGT2B7-catalyzed metabolism of drugs was indicated [2]. In a guinea pig model of tinea pedis, bakuchiol at 1%, 5% or 10% (w/w) concentration in aqueous cream could significantly reduce the fungal burden of infected feet ($p<0.01$-0.05) [4].

CUSTOMER VALIDATION

- J Ethnopharmacol. 2022 Aug 13;115593.

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REFERENCES

[1]. Chen Z, et al. Anti-tumor effects of bakuchiol, an analogue of resveratrol, on human lung adenocarcinoma A549 cell line. Eur J Pharmacol. 2010 Sep 25;643(2-3):170-9.

[2]. Xu Y, et al. In vitro evidence for bakuchiol's influence towards drug metabolism through inhibition of UDP-glucuronosyltransferase (UGT) 2B7. Afr Health Sci. 2014 Sep;14(3):564-9.

[3]. Li YG, et al. Fructus Psoraleae contains natural compounds with potent inhibitory effects towards human carboxylesterase 2. Fitoterapia. 2015 Jan 13;101C:99-106.

[4]. Lau KM, et al. Anti-dermatophytic activity of bakuchiol: in vitro mechanistic studies and in vivo tinea pedis-inhibiting activity in a guinea pig model. Phytomedicine. 2014 Jun 15;21(7):942-5.

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