Bifenthrin

Cat. No.: HY-B0824

CAS No.: 82657-04-3

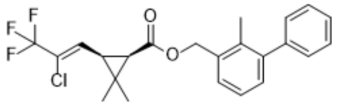
Molecular Formula: $C_{23}H_{22}ClF_3O_2$

Molecular Weight: 422.87

Target: Sodium Channel

Pathway: Membrane Transporter/Ion Channel

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (236.48 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.3648 mL	11.8240 mL	23.6479 mL
	5 mM	0.4730 mL	2.3648 mL	4.7296 mL
	10 mM	0.2365 mL	1.1824 mL	2.3648 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.91 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.91 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Bifenthrin is a synthetic pyrethroid insecticide. Bifenthrin prolongs the opening time of Nav1.8 sodium channels, leading to membrane depolarization and conductance block in the insect nervous system, thereby disrupting neural function. Bifenthrin was effective in inhibiting A. gambiae (LD_{50}=0.15 ng/mg) and C. quinquefasciatus (LD_{50}=0.16 ng/mg). Bifenthrin has good lethality against susceptible and resistant mosquitoes and is very effective in inhibiting blood sucking and can be developed as a mosquito-removal netting material[1][2].

In Vitro

Bifenthrin inhibits A. gambiae and C. quinquefasciatus with LD_{50}s of 0.15 ng/mg and 0.16 ng/mg[1].
Bifenthrin treated filter papers contact with tarsal of C. quinquefasciatus and A. gambiae, which leads to 100% mortality only need concentration% of 0.5% and 0.125%, respectively[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Hougard JM, et al. Bifenthrin: a useful pyrethroid insecticide for treatment of mosquito nets. J Med Entomol. 2002 May;39(3):526-33.

[2]. Choi JS, et al. Structure-activity relationships for the action of 11 pyrethroid insecticides on rat Na v 1.8 sodium channels expressed in Xenopus oocytes. Toxicol Appl Pharmacol. 2006 Mar 15;211(3):233-44.

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