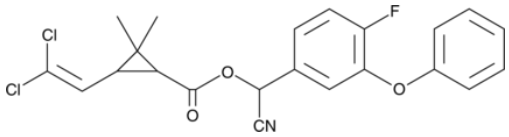
Product Data Sheet

Product Name: Cyfluthrin
Cat. No.: GC47155

Chemical Properties

Cas. No.	68359-37-5		
SMILES	O=C(C1C(C)(C)C1/C=C(Cl)\Cl)OC(C#N)C2=CC(OC3=CC=CC=C3)=C(F)C=C2		
Formula	C22H18Cl2FNO3	M.Wt	434.3
Solubility	DMSO : 50 mg/mL (115.13 mM; Need ultrasonic)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Background

Cyfluthrin is a pyrethroid insecticide and a modulator of voltage-gated sodium channels (Na_V).[1,2] It slowly activates rat recombinant $Na_V1.8$ channels, delays inactivation by longer than 40 ms, and induces persistent tail currents in channels expressed in *X. laevis* oocytes.[1] It also decreases the mean burst rate in rat primary neurons (IC_{50} = 0.99 µM, respectively).[2] Cyfluthrin is toxic to various insects, including *A. melinus*, *G. ashmeadi*, *E. eremicus*, and *E. formosa* (LC_{50}s = 7, 67, 96, and 63 ng/ml, respectively) and the *A. sinensis* mosquito (LC_{50} = 0.446 ppm).[3,4] It is also toxic to *A. mellifera* honeybees (LD_{50} = 0.22 ppm), affecting locomotor activity and wing fanning behavior with an increase in the mean bout duration of time spent upside down, indicating disruption of the righting reflex, and a decrease in wing fanning behavior when administered at a dose of 10 ng/bee.[5] Formulations containing cyfluthrin have been used for the control of insects in agriculture and for non-commercial purposes.

Caution: Product has not been fully validated for medical applications. For research use only.
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1.Choi, J.S., and Soderlund, D.M.Structure-activity relationships for the action of 11 pyrethroid insecticides on rat Nav1.8 sodium channels expressed in Xenopus oocytesToxicol. Appl. Pharmacol.211(3)233-244(2006) 2.Baskar, M.K., and Murthy, P.B.In vitro evaluation of pyrethroid-mediated changes on neuronal burst parameters using microelectrode arraysNeuroToxicology57270-281(2016) 3.Prabhaker, N., Morse, J.G., Castle, S.J., et al.Toxicity of seven foliar insecticides to four insect parasitoids attacking citrus and cotton pestsJ. Econ. Entomol.100(4)1053-1061(2007) 4.Chang, K.-S., Yoo, D.-H., Shin, E.-H., et al.Susceptibility and resistance of field populations of Anopheles sinensis (Diptera: Culicidae) collected from Paju to 13 insecticidesOsong Public Health Res. Perspect.4(2)76-80(2013) 5.Oliver, C.J., Softley, S., Williamson, S.M., et al.Pyrethroids and nectar toxins have subtle effects on the motor function, grooming and wing fanning behaviour of honeybees (Apis mellifera)PLoS One10(8):e0133733(2015)