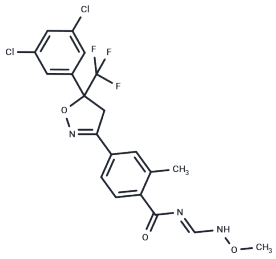
Data Sheet (Cat.No.T11307)

TargetMol

Fluxametamide

Chemical Properties



CAS No. : 928783-29-3

Formula: C20H16Cl2F3N3O3

Molecular Weight: 474.26

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Fluxametamide is a novel isoxazoline insecticide that acts via distinctive antagonism of insect ligand-gated chloride channels, acts as an antagonist of GABA- and glutamate-gated chloride channels(IC50 of 1.95 nM and 225 nM for M. domestica GABACls and GluCls).
Targets(IC50)	GABA Receptor
In vitro	Fluxametamide inhibits GABA responses in the wild-type L. striatellus GABACls with IC50 values of 1.40 (0.57-3.29) nM; in the A2′N mutant GABACls, the IC50 value is 3.51 (2.17-5.69) nM. Moreover, Fluxametamide scarcely inhibits GABA (EC50)-induced currents in rat GABACls at 10 μM and with no inhibition on glycine (EC50)-induced current in human α1 GlyCls at tested concentrations.Fluxametamide is an antagonist of GABA- and glutamate-gated chloride channels, dose-dependently inhibits currents induced by GABA and glutamate in M. domestica GABACls and GluCls, with IC50 values of 1.95 (1.18-3.21) nM and 225 (137-372) nM, respectively, and displays potent antagonistic activity against T. urticae GABACls with an IC50 of 0.219 (0.127-0.381) nM.
In vivo	Fluxametamide exerts distinctive antagonism of arthropod GABACls by binding to a site different from those for existing antagonists.In contrast to its profound actions on the arthropod LGCCs, the antagonistic activity of fluxametamide against rat GABACls and human glycine-gated chloride channels was nearly insignificant, suggesting that fluxametamide has high target-site selectivity for arthropods over mammals.Overall, fluxametamide is a new type of LGCC antagonist insecticide with excellent safety for mammals at the target-site level.

Solubility Information

Solubility	DMSO: 125 mg/mL (263.57 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4 mg/mL (8.43 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1085 mL	10.5427 mL	21.0855 mL
5 mM	0.4217 mL	2.1085 mL	4.2171 mL
10 mM	0.2109 mL	1.0543 mL	2.1085 mL
50 mM	0.0422 mL	0.2109 mL	0.4217 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

MihoAsahi, et al. Fluxametamide: A novel isoxazoline insecticide that acts via distinctive antagonism of insect ligand-gated chloride channels. Pesticide Biochemistry and Physiology.
Li B J, Wang K K, Yu Y, et al.PxRdl2 dsRNA increased the insecticidal activities of GABAR-targeting compounds against Plutella xylostella.Pesticide Biochemistry and Physiology.2023: 105548.
Wang K, Li B, Yu Y, et al. Bacterial Rdl2 dsRNA increased the insecticidal activity of GABAR blockers and allosteric modulators against Plutella xylostella[J]. bioRxiv. 2021