

Product Data Sheet

Product Name: Fluxametamide

Cat. No.: GC30088

Chemical Properties

Cas. No. 928783-29-3

SMILES FC(F)(C1(C2=CC(Cl)=CC(Cl)=C2)CC(C3=CC(C)=C(C(N/C=N/OC)=O)C=C3)=NO1)F

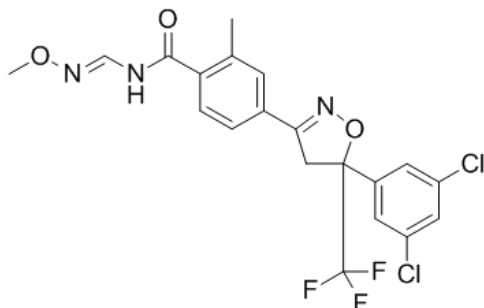
Formula $C_{20}H_{16}Cl_2F_3N_3O_3$ M.Wt 474.26

Solubility DMSO : 125 mg/mL (263.57 mM); Water : < 0.1 mg/mL (insoluble) 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



Protocol

Animal experiment [1]:

Animal models Zebrafish (*Danio rerio*)

Caution: Product has not been fully validated for medical applications. For research use only.

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Preparation Method 150 Zebrafish (*Danio rerio*) were placed in a water environment containing 0.0314mg/L of Fluxametamide, and were continuously raised for 32 days. Every day, 6 zebrafish and 0.8ml of water sample were taken from each working solution for bioaccumulation detection.

Dosage form 0.0314mg/L; 32 days; expose to water environment

Applications Fluxametamide showed high bioconcentration level in Zebrafish at 0.0314mg/L.

References:

[1] Huang Q, Jia Z, Wu S, et al. The acute toxicity, mechanism, bioconcentration and elimination of fluxametamide on zebrafish (*Danio rerio*)[J]. Environmental Pollution, 2023, 317: 120808.

Background

Fluxametamide is an antagonist of GABA- and Glu-gated chloride channels (GABACls and GluClIs) with IC₅₀ value of 1.95nM and 225nM, respectively^[1]. Fluxametamide mainly bound in transmembrane domain (TM)3 domain by forming amide-pi stacked with Gly316, pi-alkyl with Val313, Leu315 and Phe319^[2]. Fluxametamide has been widely used as an insecticide, inhibiting the growth of various pests, including Lepidoptera, Acarina, Thysanoptera, and *Diptera*^[3].

In vivo, Fluxametamide (dissolved in the water environment) has a relatively high toxicity to zebrafish with LC₅₀=0.785mg/L after a 96-hour treatment^[4].

References:

[1] Asahi M, Kobayashi M, Kagami T, et al. Fluxametamide: A novel isoxazoline insecticide that acts via distinctive antagonism of insect ligand-gated chloride channels[J]. Pesticide biochemistry and physiology, 2018, 151: 67-72.

[2] Yin X, Li S, Tian Q, et al. Comparison of the toxicity and pharmacological effects of two insecticides against the Asian corn borer, *Ostrinia furnacalis*[J]. Pesticide Biochemistry and Physiology, 2025: 106597.

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- [3] Li R, Pan X, Wang Q, et al. Development of S-fluxametamide for bioactivity improvement and risk reduction: systemic evaluation of the novel insecticide fluxametamide at the enantiomeric level[J]. Environmental science & technology, 2019, 53(23): 13657-13665.
- [4] Huang Q, Jia Z, Wu S, et al. The acute toxicity, mechanism, bioconcentration and elimination of fluxametamide on zebrafish (Danio rerio)[J]. Environmental Pollution, 2023, 317: 120808.

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