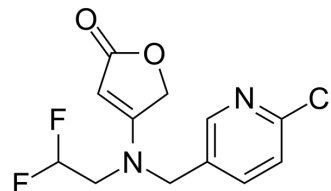


## Flupyradifurone

Cat. No.:	HY-145295
CAS No.:	951659-40-8
Molecular Formula:	C <sub>12</sub> H <sub>11</sub> ClF <sub>2</sub> N <sub>2</sub> O <sub>2</sub>
Molecular Weight:	288.68
Target:	nAChR
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
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 (346.40 mM; Need ultrasonic)						
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg	
				1 mM	3.4640 mL	17.3202 mL	34.6404 mL
				5 mM	0.6928 mL	3.4640 mL	6.9281 mL
				10 mM	0.3464 mL	1.7320 mL	3.4640 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 (8.66 mM); Clear solution						
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (8.66 mM); Clear solution						
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (8.66 mM); Clear solution						

### BIOLOGICAL ACTIVITY

Description	Flupyradifurone is a systemic nAChR agonist that interferes with signal transduction in the central nervous system of sucking pests. Flupyradifurone can be used as a butenolide insecticide <sup>[1]</sup> .
In Vitro	Flupyradifurone is a butenolide insecticide that activates insect nAChRs. Flupyradifurone is a butenolide insecticide and is considered friendly to honey bee fitness <sup>[1]</sup> . Flupyradifurone (FLF), an insecticide, compete with imidacloprid (IMI) for the same high affinity-binding site at the insect nAChR, the modulation of which leads to the toxic end point <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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**In Vivo**

The half-life of Flupyradifurone in peppers is 2.6-3.8 days. The national estimated daily intake of Flupyradifurone is 0.00094 mg/kg<sup>[3]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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**REFERENCES**

- [1]. Yi Guo, et al. The Effects of Exposure to Flupyradifurone on Survival, Development, and Foraging Activity of Honey Bees (*Apis mellifera* L.) under Field Conditions. *Insects*. 2021 Apr 16;12(4):357.
- [2]. Mark Montgomery, et al. Structural Biology-Guided Design, Synthesis, and Biological Evaluation of Novel Insect Nicotinic Acetylcholine Receptor Orthosteric Modulators. *J Med Chem*. 2022 Jan 5.
- [3]. Yizhi Feng, et al. Determination, residue analysis, dietary risk assessment, and processing of flupyradifurone and its metabolites in pepper under field conditions using LC-MS/MS. *Biomed Chromatogr*. 2022 Jan 3;e5312.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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