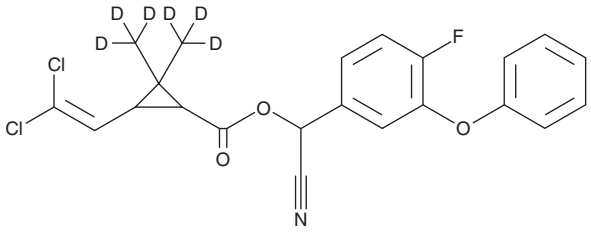
PRODUCT INFORMATION

Cyfluthrin-d_6

Item No. 39600

CAS Registry No.: 2483831-11-2
Formal Name: 3-(2,2-dichloroethenyl)-2,2-di(methyl-d_3)-cyclopropanecarboxylic acid, cyano(4-fluoro-3-phenoxyphenyl)methyl ester
Synonym: β-Cyfluthrin-d_6
MF: $C_{22}H_{12}Cl_2D_6FNO_3$
FW: 440.3
Chemical Purity: ≥95% (Cyfluthrin)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_6); ≤1% d_0
Supplied as: A 100 µg/ml solution in nonane
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

Cyfluthrin-d_6 is intended for use as an internal standard for the quantification of cyfluthrin (Item No. 24231) by GC- or LC-MS. 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.

References

1. Choi, J.S. and Soderlund, D.M. Structure-activity relationships for the action of 11 pyrethroid insecticides on rat $Na_v1.8$ sodium channels expressed in *Xenopus* oocytes. *Toxicol. 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 arrays. *Neurotoxicology* **57,** 270-281 (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 pests. *J. 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 insecticides. *Osong 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 One* **10(8):e0133733,** (2015).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/13/2025

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM