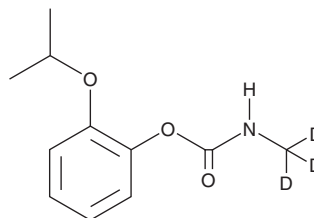


PRODUCT INFORMATION



Propoxur-d₃ Item No. 39582

CAS Registry No.: 1219798-56-7
Formal Name: 2-(1-methylethoxy)-phenol 1-(N-methyl-d₃-carbamate)
MF: C₁₁H₁₂D₃NO₃
FW: 212.3
Chemical Purity: ≥98% (Propoxur)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Propoxur-d₃ is intended for use as an internal standard for the quantification of propoxur (Item No. 25628) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Propoxur-d₃ is supplied as a solid. A stock solution may be made by dissolving the propoxur-d₃ in the solvent of choice, which should be purged with an inert gas. Propoxur-d₃ is slightly soluble in methanol and sparingly soluble in DMSO.

Description

Propoxur is a carbamate insecticide, an inhibitor of acetylcholinesterase (IC₅₀ = 4.3 μM), and an antagonist of α4β4 subunit-containing nicotinic acetylcholine receptors (IC₅₀ = 165 μM for the rat receptor).^{1,2} It is lethal to German cockroaches (*B. germanica*) with LD₅₀ values of 2.45, 4.73, and 1.06 μg per insect for newly emerged males, newly emerged females, and 4-week-old nymphs, respectively. Propoxur induces lactate dehydrogenase (LDH) release from, and inhibits the growth of, flounder gill cells (IC₅₀s = 86.59 and 89.96 μg/ml, respectively) via induction of necrosis.³ It also induces yolk sac and pericardial edema in zebrafish embryos when used at concentrations of 100 and 200 μg/ml. Propoxur (8.3 mg/kg) inhibits rat blood and brain cholinesterase, decreases ambulation and rearing in an open field test, and increases latency to escape foot shock after an audio stimulus in the two-way active avoidance box in rats.⁴ Formulations containing propoxur have been used in the control of insects in agriculture, as well as residential areas.

References

1. Qian, K., Wei, X., Zeng, X., *et al.* Stage-dependent tolerance of the German cockroach, *Blattella germanica* for dichlorvos and propoxu. *J. Insect Sci.* **10**(1), 201 (2010).
2. Smulders, C.J., Bueters, T.J., Van Kleef, R.G., *et al.* Selective effects of carbamate pesticides on rat neuronal nicotinic acetylcholine receptors and rat brain acetylcholinesterase. *Toxicol. Appl. Pharmacol.* **193**(2), 139-146 (2003).
3. Pandey, M.R. and Guo, H. Evaluation of cytotoxicity, genotoxicity and embryotoxicity of insecticide propoxur using flounder gill (FG) cells and zebrafish embryos. *Toxicol. In Vitro* **28**(3), 340-353 (2014).
4. Thiesen, F.V., Barros, H.M.T., Tannhauser, M., *et al.* Behavioral changes and cholinesterase activity of rats acutely treated with propoxur. *Jpn. J. Pharmacol.* **79**(1), 25-31 (1999).

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.

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