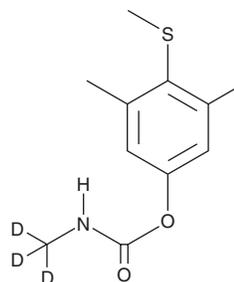


PRODUCT INFORMATION



Methiocarb-d₃ Item No. 27776

CAS Registry No.: 1581694-94-1
Formal Name: 3,5-dimethyl-4-(methylthio)phenyl (methyl-d₃)carbamate
Synonyms: Mercaptodimethur-d₃, 4-Methylthio-3,5-dimethylphenyl methylcarbamate-d₃
MF: C₁₁H₁₂D₃NO₂S
FW: 228.3
Chemical Purity: ≥95% (Methiocarb)
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

Methiocarb-d₃ is intended for use as an internal standard for the quantification of methiocarb (Item No. 25627) 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).

Methiocarb-d₃ is supplied as a solid. A stock solution may be made by dissolving the methiocarb-d₃ in the solvent of choice, which should be purged with an inert gas. Methiocarb-d₃ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of methiocarb-d₃ in ethanol is approximately 10 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Description

Methiocarb is a carbamate pesticide.¹ It inhibits the activity of acetylcholinesterase (AChE) from methiocarb-resistant and -sensitive western flower thrips (*F. occidentalis*; IC₅₀s = 0.43 and 2.1 μM, respectively) and is toxic to the same strains (LC₅₀s = 31.1 and 3.26 ppm for the resistant- and sensitive strains, respectively). Methiocarb is also toxic to the land snail (*M. obstructa*; LD₅₀ = 27.4 μg/animal) and induces 94% mortality in citrus mites (*A. pelekassi*) when used at a concentration of 0.5 ppm.^{2,3} It is an estrogen receptor α (ERα) and ERβ agonist (EC₂₀s = 19.87 and 20.24 μM, respectively) and androgen receptor antagonist (IC₅₀ = 13.89 μM) in cell-based reporter assays.⁴ It is toxic to juvenile rainbow trout and guppies with LC₅₀ values of 0.795 and 1.482 mg/L, respectively, at 48 hours of exposure.⁵ Formulations containing methiocarb have been used in the control of mollusks, mites, and insects in residential and commercial settings.

References

1. Jensen, S.E. *Pesticide Biochem. Physiol.* **61(3)**, 191-200 (1998).
2. Hussein, H.I., Al-Rajhy, D., El-Shahawi, F.I., et al. *Int. J. Pest Mgt.* **45(3)**, 211-213 (2010).
3. Reed, D.K., Crittenden, C.R., and Lyon, D.J. *J. Econ. Entomol.* **60(3)**, 668-671 (1967).
4. Tange, S., Fujimoto, N., Uramaru, N., et al. *Environ. Toxicol. Pharmacol.* **41**, 289-97 (2016).
5. Boran, M., Altinok, I., and Capkin, E. *Turk. J. Vet. Animal Sci.* **31(1)**, 39-45 (2007).

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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