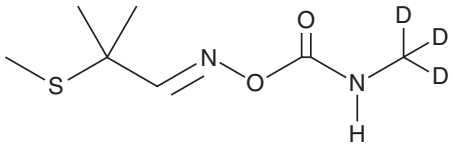
PRODUCT INFORMATION

Aldicarb-d_3

Item No. 39580

CAS Registry No.: 1795142-83-4
Formal Name: 2-methyl-2-(methylthio)propanal O-((methyl-d_3)carbamoyl) oxime
Synonym: 2-methyl-2-(methylthio)-Propionaldehyde-d_3
MF: $C_7H_{11}D_3N_2O_2S$
FW: 193.3
Chemical Purity: ≥98% (Aldicarb)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_3); ≤1% d_0
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

Aldicarb-d_3 is intended for use as an internal standard for the quantification of aldicarb (Item No. 18466) 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).

Description

Aldicarb is a carbamate pesticide.[1] It is an acetylcholinesterase (AChE) inhibitor with an IC_{50} value of 5 µM.[2] Aldicarb induces mortality in the two-spotted spider mite (*T. urticae*) with an LC_{50} value of 21 ppm in a slide-dip assay and in the nematode (*M. exigua*) with an LC_{50} value of 24 µg/L.[3,4] It has been used to study CREB and acetylcholine signaling.[5] Formulations containing aldicarb have been used as pesticides in agriculture.

References

1. Baron, R.L. A carbamate insecticide: A case study of aldicarb. *Environ. Health Perspect.* **102 (Suppl. 11)**, 23-27 (1994).
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. Knowles, C.O., Errampalli, D.D., and E-Sayed, G.N. Comparative toxicities of selected pesticides to bulb mite (Acari: Acaridae) and twospotted spider mite (Acari: Tetranychidae). *J. Econ. Entomol.* **81(6)**, 1586-1591 (1988).
4. Nunes, A.d.S. Organic substances for nematode control in coffee plants. *Master's thesis*, *Federal University de Lavras* (2008).
5. Suo, S. and Ishiura, S. Dopamine modulates acetylcholine release via octopamine and CREB signaling in *Caenorhabditis elegans*. *PLoS One* **8(8)**, e72578 (2013).

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