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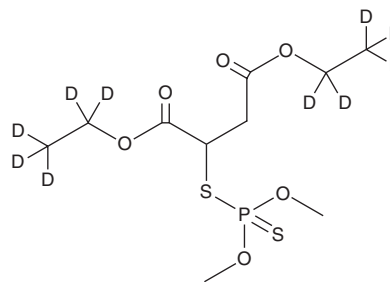
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PRODUCT INFORMATION



Malathion-d₁₀ Item No. 39561

CAS Registry No.: 347841-48-9
Formal Name: 2-[[dimethoxyphosphinothioyl]thio]-butanedioic acid, 1,4-di(ethyl-1,1,2,2,2-d₅) ester
MF: C₁₀H₉D₁₀O₆PS₂
FW: 340.4
Chemical Purity: ≥95% (Malathion)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₁₀); ≤1% d₀
Supplied as: A solution in methanol
Storage: -20°C
Stability: 2 years



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

Laboratory Procedures

Malathion-d₁₀ is intended for use as an internal standard for the quantification of malathion (Item No. 22998) 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).

Malathion-d₁₀ is supplied as a solution in methanol. To change the solvent, simply evaporate the methanol under a gentle stream of nitrogen and immediately add the solvent of choice. Malathion-d₁₀ is slightly soluble in chloroform.

Description

Malathion is an organophosphate insecticide that inhibits acetylcholinesterase (AChE; IC₅₀s = 370 and 160 μM for free and immobilized AChE, respectively, from bovine erythrocytes).¹ It is ovicidal and adulticidal to laboratory colonies of body lice when used at concentrations of 0.001 and 0.05%, respectively.² It is toxic to rats (LD₅₀ = 750 mg/kg) and teratogenic to zebrafish when used at concentrations ranging from 2 to 3 mg/L.^{3,4} Formulations containing malathion have been used in the treatment of lice.

References

1. Krstić, D.Z., Čolović, M., Kralj, M.B., *et al.* Inhibition of AChE by malathion and some structurally similar compounds. *J. Enzyme Inhib. Med. Chem.* **23(4)**, 562-573 (2008).
2. Cole, M.M. and Burden, G.S. Phosphorus compounds as ovicides and adulticides against body lice. *J. Econ. Entomol.* **49(6)**, 747-750 (1956).
3. DuBois, K.P., Doull, J., Deroin, J., *et al.* Toxicity and mechanism of action of some new insecticidal thionophosphates. *Arch. Ind. Hyg. Occup. Med.* **8(4)**, 350-358 (1953).
4. Cook, L.W., Paradise, C.J., and Lom, B. The pesticide malathion reduces survival and growth in developing zebrafish. *Environ. Toxicol. Chem.* **24(7)**, 1745-1750 (2005).

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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