

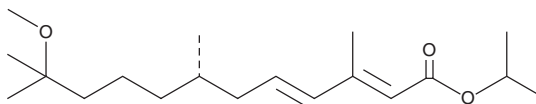
# PRODUCT INFORMATION



## (S)-(+)-Methoprene

Item No. 16807

**CAS Registry No.:** 65733-16-6  
**Formal Name:** 11-methoxy-3,7S,11-trimethyl-2E,4E-dodecadienoic acid, 1-methylethyl ester  
**Synonyms:** Altosid™, d-Methoprene, ZR 2458  
**MF:** C<sub>19</sub>H<sub>34</sub>O<sub>3</sub>  
**FW:** 310.5  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 265 nm  
**Supplied as:** A neat oil  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

(S)-(+)-Methoprene is supplied as a neat oil. A stock solution may be made by dissolving the (S)-(+)-methoprene in the solvent of choice, which should be purged with an inert gas. (S)-(+)-Methoprene is soluble in organic solvents such as ethanol and dimethyl formamide. The solubility of (S)-(+)-methoprene in these solvents is approximately 10 and 20 mg/ml, respectively.

(S)-(+)-Methoprene is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

### Description

(S)-(+)-Methoprene is a widely used insect growth regulator.<sup>1</sup> It is remarkable for its lack of significant effects against a wide variety of mammals, although concerns remain for its effects on arthropod development.<sup>1,2</sup> Methoprene acts as an activator of the juvenile hormone receptor, known as Methoprene-tolerant or Met (K<sub>d</sub> = 12.3 nM).<sup>3,4</sup> Met is a transcription factor that, upon activation with juvenile hormone or methoprene, regulates gene expression that inhibits metamorphosis.<sup>5</sup> Formulations containing (S)-(+)-methoprene have been used in the control insects in industrial, commercial, and residential areas.

### References

1. Siddall, J.B. *Environ. Health Perspect.* **14**, 119-126 (1976).
2. Wright, J.E. *Environ. Health Perspect.* **14**, 127-132 (1976).
3. Charles, J.-P., Iwema, T., Epa, V.C., et al. *Proc. Natl. Acad. Sci. USA* **108**(52), 21128-21133 (2011).
4. Osir, E.O. and Riddiford, L.M. . *J. Biol. Chem.* **263**(27), 13812-13818 (1988).
5. Zou, Z., Saha, T.T., Roy, S., et al. *Proc. Natl. Acad. Sci. USA* **110**(24), E2173-E2181 (2013).

#### 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, 07/25/2023

#### 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