

## Product Data Sheet

Product Name: (S)-(+)-Methoprene

Cat. No.: GC46347

### Chemical Properties

Cas. No. 65733-16-6

SMILES CC(C)OC(/C=C(C)/C=C/C[C@@H](C)CCCC(OC)(C)C)=O

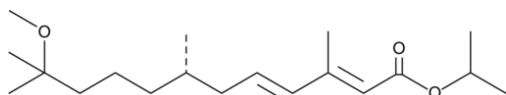
Formula C<sub>19</sub>H<sub>34</sub>O<sub>3</sub> M.Wt 310.5

Solubility DMF: 20 mg/ml, Ethanol: 10 mg/ml Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



### Background

(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 ( $K_D = 12.3$  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>

1. Siddall, J.B. Insect growth regulators and insect control: A critical appraisal. *Environmental Health Perspectives* 141:19-126 (1976) 2. Wright, J.E. Environmental and toxicological aspects of insect growth regulators. *Environmental Health Perspectives* 141:127-132 (1976) 3. Charles, J.P., Iwema, T., Epa, V.C., et al. Ligand-binding properties of a juvenile hormone receptor, methoprene-tolerant. *Proceedings of the National Academy of Sciences of the United States of America* 108(52):21128-21133 (2011) 4. Osir, E.O., and Riddiford, L.M. Nuclear binding sites for juvenile hormone and its analogs in the epidermis of the tobacco hornworm. *The Journal of Biological Chemistry* 263(27):13812-13818 (1988) 5. Zou, Z., Saha, T.T., Roy, S., et al. Juvenile hormone and its receptor, methoprene-tolerant, control the

**Caution: Product has not been fully validated for medical applications. For research use only.**

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dynamics of mosquito gene expression  
Proceedings of the National Academy of Sciences of the  
United States of America 110(24):E2173-E2181 (2013)

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