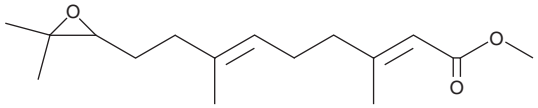
PRODUCT INFORMATION

Juvenile Hormone III

Item No. 19646

CAS Registry No.:	24198-95-6
Formal Name:	(2E,6E)-9-(3,3-dimethyl-2-oxiranyl)-3,7-dimethyl-2,6-nonadienoic acid, methyl ester
Synonym:	*trans-trans*-10,11-Epoxyfarnesenic Acid methyl ester
MF:	$C_{16}H_{26}O_3$
FW:	266.4
Purity:	≥65%
UV/Vis.:	λ_{max}: 218 nm
Supplied as:	A solution in ethanol
Storage:	-20°C
Stability:	≥2 years
Item Origin:	Synthetic



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

Laboratory Procedures

Juvenile hormone III is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of juvenile hormone III in these solvents is approximately 12, 10, and 14 mg/ml, respectively.

Juvenile hormone III is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, juvenile hormone III should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Juvenile hormone III has a solubility of approximately 0.3 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Juvenile hormone III is an acyclic sesquiterpenoid that regulates diverse processes in insects, including adult transition of larvae and oogenesis in adult females.[1,2] It activates the juvenile hormone receptor, known as methoprene-tolerant, with a K_d value of 2.9 nM.[2] Juvenile hormone III can be synthesized from farnesoic acid by two alternative pathways, one through methyl farnesoate and the other through juvenile hormone acid III.[3,4]

References

1. Tillman, J.A., Seybold, S.J., Jurenka, R.A., *et al.* Insect pheromones--an overview of biosynthesis and endocrine regulation. *Insect Biochem. Molec. Biol.* **29(6)**, 481-514 (1999).
2. Charles, J.-P., Iwema, T., Epa, V.C., *et al.* Ligand-binding properties of a juvenile hormone receptor, methoprene-tolerant. *Proc. Natl. Acad. Sci. USA* **108(52)**, 21128-21133 (2011).
3. Defelipe, L.A., Dolghih, E., Roitberg, A.E., *et al.* Juvenile hormone synthesis: "Esterify then epoxidize" or "epoxidize then esterify"? Insights from the structural characterization of juvenile hormone acid methyltransferase. *Insect Biochem. Molec. Biol.* **41(4)**, 228-235 (2011).
4. Navare, A.T., Mayoral, J.G., Nouzova, M., *et al.* Rapid direct analysis in real time (DART) mass spectrometric detection of juvenile hormone III and its terpene precursors. *Anal. Bioanal. Chem.* **398(7-8)**, 3005-3013 (2010).

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