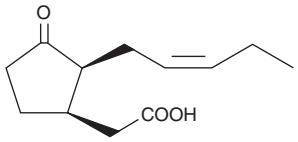
PRODUCT INFORMATION

(±)7-*epi* Jasmonic Acid

Item No. 88320

CAS Registry No.: 62653-85-4
Formal Name: (1R)-3-oxo-2S-(2Z)-2-pentenyl-cyclopentaneacetic acid
Synonyms: 2-*iso* Jasmonic Acid, 7-*iso* Jasmonic Acid
MF: $C_{12}H_{18}O_3$
FW: 210.3
Purity: ≥95%
Supplied as: A solution in methyl acetate
Storage: -20°C
Stability: ≥2 years
Special Conditions: Product is a low UV absorber



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

Laboratory Procedures

(±)7-*epi* Jasmonic acid is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of (±)7-*epi* jasmonic acid in these solvents is approximately 20, 15, and 30 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of (±)7-*epi* jasmonic acid is needed, it can be prepared by evaporating the methyl aceate and directly dissolving the neat oil in aqueous buffers. The solubility of (±)7-*epi* jasmonic acid in PBS, pH 7.2, is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(±)-7-*epi* Jasmonic acid is the major metabolite of the 12-oxo phytodienoic acid pathway of the metabolism of 13(S)-hydroperoxy linolenic acid in plants. Initially synthesized as (+)-7-*epi* jasmonic acid, this more active and biologically relevant form of the hormone quickly epimerizes to the more stable isomer (−)-7-jasmonic acid.[1,2] (±)-7-*epi* Jasmonic acid is a plant growth regulator that activates various signal transduction pathways with both growth promoting and inhibitory functions, perhaps in response to stress.[3,4]

References

1. Holbrook, L., Tung, P., Ward, K., *et al*. Importance of the chiral centers of jasmonic acid in the responses of plants. Activities and antagonism between natural and synthetic analogs. *Plant Physiol.* **114(2)**, 419-428 (1997).
2. Browse, J. and Howe, G.A. New weapons and a rapid response against insect attack. *Plant Physiol.* **146(3)**, 832-838 (2008).
3. Wasternack, C. and Parthier, B. Jasmonate-signalled plant gene expression. *Trends in Plant Sci.* **2**, 302-307 (1997).
4. Hamberg, M. and Gardner, H.W. Oxylipin pathway to jasmonates: Biochemistry and biological significance. *Biochim. Biophys. Acta* **1165(1)**, 1-18 (1992).

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