

Product Information



12-oxo Phytodienoic Acid

Item No. 88520

CAS Registry No.: 85551-10-6

Formal Name: 4-oxo-5 α -(2Z-pentenyl)-2-cyclopentene-1 α -octanoic acid

Synonyms: OPDA, 12-oxo PDA

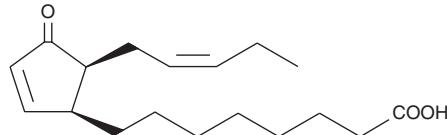
MF: C₁₈H₂₈O₃

FW: 292.4

Purity: \geq 95%

Stability: \geq 1 year at -80°C

Supplied as: A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that 12-oxo phytodienoic acid (OPDA) be stored as supplied at -80°C. It should be stable for at least one year.

OPDA 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 DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of OPDA in these solvents is approximately 16 mg/ml. We do not recommend storing the aqueous solution for more than one day.

It is difficult to obtain an aqueous solution of OPDA directly. Organic solvent-free aqueous solutions of OPDA can be prepared in strongly basic buffers (pH > 8 and ionic strength > 0.1 M). Add 400 μ l of buffer per mg of OPDA and agitate vigorously and/or ultrasonicate.

OPDA is a biologically active, immediate precursor of 7-*epi* jasmonic acid.¹ In addition to its link with jasmonic acid activity, OPDA appears to play an independent role in mediating resistance to pathogens and pests. As an endogenous signal transducer, OPDA has been shown to increase alkaloid biosynthesis in *E. californica* cell cultures, increase tendril coiling of *B. dioica*, and suppress jasmonic acid-induced programmed cell death in a conditional *A. flu* mutant.²

References

1. Schaller, A. and Stintzi, A. Enzymes in jasmonate biosynthesis - structure, function, regulation. *Phytochemistry* **70**, 1532-1538 (2009).
2. Böttcher, C. and Pollmann, S. Plant oxylipins: Plant responses to 12-oxo-phytodienoic acid are governed by its specific structural and functional properties. *FEBS J.* **276**, 4693-4704 (2009).

Related Products

13-*epi*-12-oxo Phytodienoic Acid - Item No. 10195 • dinor-12-oxo Phytodienoic Acid-d₅ - Item No. 10696 • dinor-12-oxo Phytodienoic Acid - Item No. 10710 • 13(S)-HpOTrE - Item No. 45220 • (\pm)-Jasmonic Acid - Item No. 88300 • (\pm)-7-*epi* Jasmonic Acid - Item No. 88320 • Traumatic Acid - Item No. 88820 • (\pm)-Jasmonic Acid methyl ester - Item No. 9000059

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WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

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