

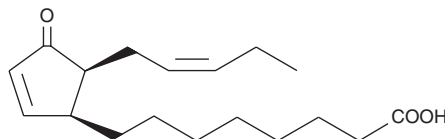
# Product Information



## 12-oxo Phytodienoic Acid

Item No. 88520

**CAS Registry No.:** 85551-10-6  
**Formal Name:** 4-oxo-5 $\alpha$ -(2Z-pentenyl)-2-cyclopentene-1 $\alpha$ -octanoic acid  
**Synonyms:** OPDA, 12-oxo PDA  
**MF:** C<sub>18</sub>H<sub>28</sub>O<sub>3</sub>  
**FW:** 292.4  
**Purity:** ≥95%  
**Stability:** ≥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  $\mu$ 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.<sup>1</sup> 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 tendrils coiling of *B. dioica*, and suppress jasmonic acid-induced programmed cell death in a conditional *A. flu* mutant.<sup>2</sup>

### References

- Schaller, A. and Stintzi, A. Enzymes in jasmonate biosynthesis - structure, function, regulation. *Phytochemistry* **70**, 1532-1538 (2009).
- 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-d<sub>5</sub> - Item No. 10696 • dinor-12-oxo Phytodienoic Acid - Item No. 10710 • 13(S)-HpOTrE - Item No. 45220 • (±)-Jasmonic Acid - Item No. 88300 • (±)-7-*epi* Jasmonic Acid - Item No. 88320 • Traumatic Acid - Item No. 88820 • (±)-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

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

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