

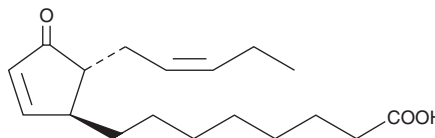
# PRODUCT INFORMATION



## 13-*epi*-12-oxo Phytodienoic Acid

Item No. 10195

CAS Registry No.: 71606-07-0  
Formal Name: 4-oxo-5R-(2Z)-2-pentenyl-2-cyclopentene-1S-octanoic acid  
Synonym: 13-*epi*-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  
UV/Vis.: λ<sub>max</sub>: 220 nm



### Laboratory Procedures

For long term storage, we suggest that 13-*epi*-12-oxo phytodienoic acid (13-*epi*-12-oxo PDA) be stored as supplied at -80°C. It should be stable for at least one year.

13-*epi*-12-oxo PDA 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 13-*epi*-12-oxo PDA in these solvents is approximately 10 and 20 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 13-*epi*-12-oxo PDA is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 13-*epi*-12-oxo PDA in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

13-*epi*-12-oxo PDA is a lipoxygenase metabolite of α-linolenic acid in the leaves of green plants such as corn. ω-3 and ω-6 polyunsaturated fatty acids in plants are substrates for plant lipoxygenases.<sup>1</sup> 12-oxo PDA is one of the best studied end metabolites of this enzymatic pathway.<sup>2</sup> While the initial enzymatic product and major isomer of 12-oxo PDA contains side chains in the *cis* position, both being β to the ring, the upper side chain attached at C-13 can and frequently does isomerize when 12-oxo PDA is extracted, isolated or stored. 13-*epi*-12-oxo PDA is the product of this isomerization.

### References

1. Crombie, L. and Mistry, K.M. Synthesis of 12-oxophytodienoic acid (12-oxo PDA) and the compounds of its enzymic degradation cascade in plants, OPC-8:0, -6:0, -4:0 and -2:0 (*epi*-jasmonic acid), as their methyl esters. *J. Chem. Soc.* **1**, 1981-1991 (1991).
2. Hamberg, M. and Gardner, H.W. Oxylin pathway to jasmonates: Biochemistry and biological significance. *Biochim. Biophys. Acta* **1165**, 1-18 (1992).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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