

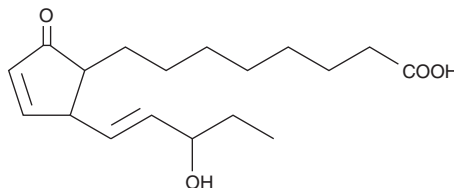
PRODUCT INFORMATION



A₁-Phytprostane-I

Item No. 9000593

CAS Registry No.: 1035557-09-5
Formal Name: 2-(3-hydroxy-1-penten-1-yl)-5-oxo-3-cyclopentene-1-octanoic acid
Synonyms: 16-A₁-Phytprostane, Phytprostane A₁, PPA₁
MF: C₁₈H₂₈O₄
FW: 308.4
Purity: ≥90% (*trans* isomer mix)
UV/Vis.: λ_{max}: 217 nm
Supplied as: A 1 mg/ml solution in methyl acetate
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

A₁-Phytprostane-I 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 (DMF) purged with an inert gas can be used. The solubility of A₁-phytprostane-I in ethanol is approximately 10 mg/ml and approximately 20 mg/ml in DMSO and DMF.

A₁-Phytprostane-I is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the methyl acetate solution of A₁-phytprostane-I should be diluted with the aqueous buffer of choice. A₁-Phytprostane-I has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

A₁-Phytprostane-I is a cyclopentenone isoprostane produced by the action of reactive oxygen species on α-linolenic acid in plants.¹⁻³ There are two A₁-phytprostanes, both having the single ketone group on the ring structure. This isoform results from cyclization between carbons 9 and 13 of linolenic acid, as opposed to carbons 3 and 7 in A₁-phytprostane-II. A₁-Phytprostanes induce the expression of glutathione-S-transferase, increase phytoalexin biosynthesis, and trigger the expression of several genes involved in primary and secondary metabolism in plants.^{1,3,4}

References

1. Thoma, I., Loeffler, C., Sinha, A.K., *et al.* Cyclopentenone isoprostanes induced by reactive oxygen species trigger defense gene activation and phytoalexin accumulation in plants. *Plant J.* **34**(3), 363-375 (2003).
2. Jahn, U., Galano, J.-M., and Durand, T. Beyond prostaglandins--chemistry and biology of cyclic oxygenated metabolites formed by free-radical pathways from polyunsaturated fatty acids. *Angew. Chem. Int. Ed.* **47**, 5894-5955 (2008).
3. Mueller, M.J. and Berger, S. Reactive electrophilic oxylipins: Pattern recognition and signalling. *Phytochem.* **70**, 1511-1521 (2009).
4. Dueckershoff, K., Mueller, S., Mueller, M.J., *et al.* Impact of cyclopentenone-oxylipins on the proteome of *Arabidopsis thaliana*. *Biochim. Biophys. Acta.* **1784**, 1975-1985 (2008).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 04/22/2026

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM