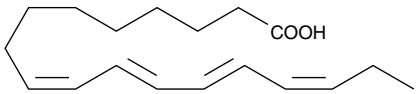
Product Information

cis-Parinaric Acid

Item No. 71430

CAS Registry No.: 18427-44-6
Formal Name: 9Z,11E,13E,15Z-octadecatetraenoic acid
Synonym: α-Parinaric Acid
MF: $C_{18}H_{28}O_2$
FW: 276.4
Purity: ≥98% (may contain up to 5% *trans*-Parinaric acid)
Stability: ≥2 years at -80°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 292, 305, 319 nm



Laboratory Procedures

For long term storage, we suggest that *cis*-parinaric acid be stored as supplied at -80°C. It should be stable for at least two years.

cis-Parinaric acid is supplied as a crystalline solid. A stock solution may be made by dissolving the *cis*-parinaric acid in an organic solvent purged with an inert gas. *cis*-Parinaric acid is soluble in organic solvents such as ether and benzene. The solubility of *cis*-parinaric acid in these solvents is approximately 15 mg/ml. *cis*-Parinaric acid is highly susceptible to oxidation, and oxidation products are practically insoluble in most solvents.

cis-Parinaric acid is sparingly soluble in aqueous buffers. Therefore, further dilutions of the organic solvent 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. Store aqueous solutions of *cis*-parinaric acid on ice and use within 12 hours of preparation. Although the aqueous solutions of *cis*-parinaric acid may be stable for more than 12 hours, we strongly recommend using a fresh preparation each day.

cis-Parinaric acid is a naturally occurring polyunsaturated fatty acid containing an unusual conjugated (Z,E,E,Z) tetraene. This chromophore provides for a natural fluorescence at 432 nm with an excitation wavelength at 320 nm. *cis*-Parinaric acid occurs naturally in the seeds of the Makita tree, a tropical rainforest tree indigenous to Fiji. Makita seeds are inedible, and this toxicity may be due at least in part to the unstable conjugated fatty acids, including *cis*-parinaric acid, contained within the seed. *cis*-Parinaric Acid has been used for the measurement of phospholipase activity, lipase activity, and as an indicator of lipid peroxidation.[1-3]

References

1. Wolf, C., Sagaert, L., and Bereziat, G. A sensitive assay of phospholipase using the fluorescent probe 2-parinaroyllecithin. *Biochem. Biophys. Res. Commun.* **99**, 275-283 (1981).
2. Beisson, F., Ferté, N., Nari, J., *et al.* Use of naturally fluorescent triacylglycerols from *Parinari glaberrimum* to detect low lipase activities from *Arabidopsis thaliana* seedlings. *J. Lipid Res.* **40**, 2313-2321 (1999).
3. McGuire, S.O., James-Kracke, M.R., Sun, G.Y., *et al.* An esterification protocol for *cis*-parinaric acid-determined lipid peroxidation in immune cells. *Lipids* **32**, 219-226 (1997).

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Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com