cis-*Parinaric Acid (P36005)*

Quick Facts

Storage upon receipt:

- ≤–20°C
- Protect from air
- Protect From light

Ex/Em: ~320/420 nm

Introduction

Developed as a membrane probe by Hudson and co-workers,[1] the naturally occurring polyunsaturated fatty acid *cis*-parinaric acid (P36005, Figure 1) is the closest structural analog of intrinsic membrane lipids among currently available fluorescent probes. The chemical and physical properties of *cis*-parinaric acid have been well characterized; the lowest absorption band of the probe has two main peaks around 300 nm and 320 nm, with a high extinction coefficient. Oxidation of the probe is accompanied by decreased fluorescence and absorption. *cis*-Parinaric acid offers several experimentally advantageous optical properties, including a very large fluorescence Stokes shift (~100 nm) and an almost complete lack of fluorescence in water. *cis*-Parinaric acid has been widely used in lipid peroxidation assays, including evaluation of antioxidants,[2–3] measurement of peroxidation in lipoproteins,[4] and in studies of the relationship of peroxidation to cytotoxicity[5] and apoptosis.[6] *cis*-Parinaric acid is available packaged as a 10 mL solution in deoxygenated ethanol containing 10 μg/mL of butylated hydroxytoluene (BHT).

Materials

Contents

- *cis*-Parinaric acid, 10 mL of a 3 mM solution in ethanol

Storage and Handling

Upon receipt, *cis*-parinaric acid should be stored at ≤–20°C protected from light until required for use. If stored properly, the compound should be stable for at least six months. Please allow the solution to warm to room temperature before opening. Some precipitate may form at ≤–20°C, but should resolubilize at room temperature. The extensive unsaturation of *cis*-parinaric acid makes it quite susceptible to oxidation; lack of solubility in ethanol at room temperature is indicative of oxidative degradation. We strongly advise handling *cis*-parinaric acid samples under inert gas and preparing solutions using degassed buffers and solvents. *cis*-Parinaric acid is also somewhat photolabile, undergoing photodimerization and loss of fluorescence under intense illumination. Prepare a working solution immediately before use; discard any unused working solution at the end of the work session.

Application

Since the applications of *cis*-parinaric acid are varied, researchers should consult the primary literature for protocol information. A bibliography listing more than 200 papers describing applications of *cis*-parinaric acid is available from our Web site (www.probes.com).

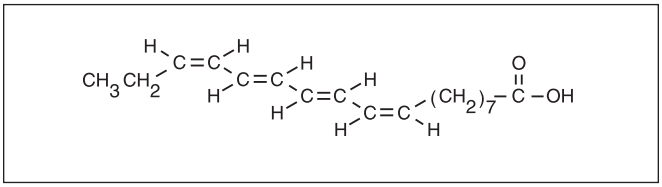

Figure 1. Structure of *cis*-parinaric acid.

References

1. Biochemistry 16, 819–828 (1977); **2.** Anal Biochem 196, 443–450 (1991); **3.** Biochemistry 32, 10692–10699 (1993); **4.** Proc Natl Acad Sci U S A 91, 1183–1187 (1994); **5.** Biochim Biophys Acta 1330, 127–137 (1997); **6.** Biochemistry 39, 127–138 (2000).

Product List *Current prices may be obtained from our Web site or from our Customer Service Department.*

Cat #	Product Name	Unit Size
P36005	*cis*-parinaric acid *3 mM in ethanol*	10 mL

Contact Information

Further information on Molecular Probes' products, including product bibliographies, is available from your local distributor or directly from Molecular Probes. Customers in Europe, Africa and the Middle East should contact our office in Leiden, the Netherlands. All others should contact our Technical Assistance Department in Eugene, Oregon.

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Molecular Probes, Inc.
29851 Willow Creek Road, Eugene, OR 97402
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Molecular Probes Europe BV
Poortgebouw, Rijnsburgerweg 10
2333 AA Leiden, The Netherlands
Phone: +31-71-5233378 • Fax: +31-71-5233419

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Technical Assistance: 9:00 to 16:30 (Central European Time)
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eurotech@probes.nl