

PRODUCT DATA SHEET

Hexadecenoic acid (*cis*-9)

Catalog number: 1016

Common Name: Palmitoleic acid; C16:1
(*cis*-9) fatty acid

Source : natural, plant

Solubility: chloroform, hexane, ethyl ether

CAS number: 373-49-9

Molecular Formula: C₁₆H₃₀O₂

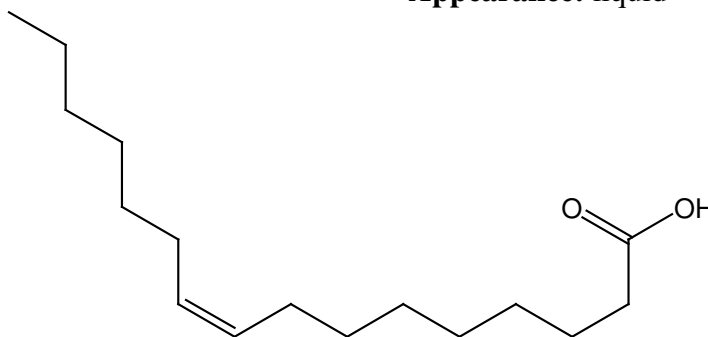
Molecular Weight: 254

Storage: -20°C

Purity: TLC: 99%, GC: 99%

TLC System: hexane/ethyl ether/acetic acid
(85:15:1 by vol.)

Appearance: liquid



Application Notes:

Hexadecenoic acid (*cis*-9) is often found as a component of human adipose tissues, esterified to glycerol and is found in small amounts in most animals. It is synthesized from palmitic acid by the enzyme *delta*-9-desaturase. Hexadecenoic acid (*cis*-9) is thought to be biomarker for the *de novo* synthesis of fatty acids from glucose. It has been reported that there is a constant positive association between changes in inflammatory markers and hexadecenoic acid (*cis*-9). Hypercaloric high carbohydrate diets have been shown to stimulate the production of several fatty acids including hexadecenoic acid (*cis*-9) and its increase is a marker of lipogenesis.¹ Hexadecenoic acid (*cis*-9), because it is a product of stearoyl-CoA desaturase activity, can be used as a biomarker for triglyceridemia and abdominal adiposity.² It has been demonstrated that oleic and Hexadecenoic acids (*cis*-9) can inhibit the cytotoxic activity of *trans*-10, *cis*-12-conjugated linoleic acid.³ Hexadecenoic acid (*cis*-9) has been classified as a lipid hormone which stimulates insulin in muscles.⁴

Selected References:

1. C. Forsythe "Comparison of Low Fat and Low Carbohydrate Dietson Circulating Fatty Acid Composition and Markers of Inflammation" *Lipids*, Vol. 43 pp. 65-77, 2008
2. F. Paillard et al. "Plasma palmitoleic acid, a product of stearoyl-coA desaturase activity, is an independent marker of triglyceridemia and abdominal adiposity" *Nutrition, Metabolism, and Cardiovascular Diseases*, Vol. 18(6) pp. 436-440, 2008
3. M. Yamasaki et al. "Alleviation of the cytotoxic activity induced by *trans*10, *cis*-12-conjugated linoleic acid in rat hepatoma dRLh-84 cells by oleic or palmitoleic acid" *Cancer Letters*, Vol. 196(2) pp. 187-196, 2003
4. Z. Yang, H. Miyahara, A. Hatanaka "Chronic administration of palmitoleic acid reduces insulin resistance and hepatic lipid accumulation in KK-Ay Mice with genetic type 2 diabetes" *Lipids in Health and Disease*, vol. 10 pp. 120, 2011

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