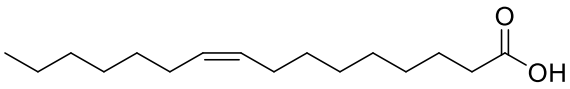
PRODUCT DATA SHEET

MATREYA LLC
Lipids and Biochemicals
A Cayman Chemical Company

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: $C_{16}H_{30}O_2$
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 consistant 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*