

PRODUCT DATA SHEET

Hexadecenoic acid (*cis*-6)

Catalog No: 1243

Common Name: Sapienic acid; C16:1 (*cis*-6)
Fatty acid

Source: synthetic

Solubility: ethanol, methanol, chloroform,
ethyl ether

CAS No: 17004-51-2

Molecular Formula: C₁₆H₃₀O₂

Molecular Weight: 254

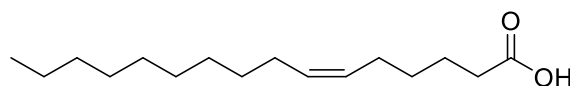
Storage: -20°C

Purity: TLC 99%, GC > 99%;

identity confirmed by MS

TLC System: hexane/ethyl ether/acetic acid
(80:20:1 by vol.)

Appearance: liquid



Application Notes:

Hexadecenoic acid (*cis*-6) is an unusual unsaturated fatty acid that is the major constituent of human sebaceous lipids, from which it derives its common name sapienic acid, where it is involved in self-sterilization and atopic dermatitis amelioration.¹ Among all hair-bearing animals, humans are the only ones to produce this fatty acid and it is not found in any organ other than the skin.² It is formed from palmitic acid by the action of the enzyme *delta*-desaturase (or fatty acid desaturase-2).³ hexadecenoic acid (*cis*-6) can then be converted to sebaleic acid (C18:2 *delta*-5,8), another fatty acid unique to sebum, by the extension of two carbons and the addition of a double bond.⁴ It has been found that hexadecenoic acid (*cis*-6) has powerful antibacterial properties although the mechanisms have not been fully explored. Besides being found in human skin hexadecenoic acid (*cis*-6) has been found in some marine organisms and in some seed oils.

Selected References:

1. D. Downing et al. "Essential fatty acids and acne" *Journal of the American Academy of Dermatology*, Vol. 14:2 pp. 221-225, 1986
2. N. Nicolaides "Skin Lipids: Their Biochemical Uniqueness" *Science*, Vol. 186:4 pp. 19-26, 1974
3. L. Ge et al. "Identification of the *delta*-6 Desaturase of Human Sebaceous Glands: Expression and Enzyme Activity" *Journal of Investigative Dermatology*, Vol. 120 pp. 707-714, 2003
4. M. Ottaviani, E. Camera, and M. Picardo "Lipid Mediators in Acne" *Mediators of Inflammation*, Vol. 2010 pp. 1-6, 2010

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