Natural Products

ChemFaces

Stearic Acid Datasheet

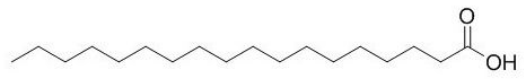
4th Edition (Revised in July, 2016)

[Product Information]

Name: Stearic Acid

Catalog No.: CFN93165

Cas No.: 57-11-4



Purity: >=98%

M.F: $C_{18}H_{36}O_2$

M.W: 284.48

Physical Description: Powder

Synonyms: Cetylacetic acid;Carboxylic acid C18;N-Octadecylic acid.

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food research;
4. Synthetic precursor compounds;
5. Intermediates & Fine Chemicals;
6. Others.

[Source]

The leaves of *Trachycarpus fortunei.*

[Biological Activity or Inhibitors]

Saturated FFAs, such as palmitic acid and stearic acid, markedly suppressed the granulosa cell survival in a time- and dose-dependent manner, the suppressive effect of saturated FFAs on cell survival was caused by apoptosis, as evidenced by DNA ladder formation and annexin V-EGFP/propidium iodide staining of the cells;these effects of FFAs on granulosa cell survival may be a possible mechanism for reproductive abnormalities, such as amenorrhea, which is frequently observed in obese women.[1]

Trans fatty acids (TFAs) intake should be reduced as much as possible because of its adverse effects on lipids and lipoproteins, the replacement of TFA with stearic acid (STA) compared with other saturated fatty acids in foods that require solid fats beneficially affects LDL cholesterol, the primary target for cardiovascular disease (CVD) risk reduction.[2]

Stearic acid can facilitate hippocampal neurotransmission by enhancing nicotinic ACh receptor responses via a PKC pathway. [3]

Stearic acid (SA) and palmitic acid (PA) induce apoptosis in testicular Leydig cells by ceramide production and these apoptotic effects may be a possible mechanism for reproductive abnormalities in obese men, and arachidonic acid (AA) can partly prevent the apoptotic effect induced by saturated free fatty acids (FFA.[4]

Stearic acid has the potential to inhibit COX-1 activity, but not COX-2 activity, in the form of their CoA ester.[5]

[Solvent]

Chloroform, Dichloromethane, Ethyl Acetate, DMSO, Acetone, etc.

[HPLC Method][6]

Mobile phase: 0.01 M Sodium dodecyl sulfate-Methanol-Acetonitrile=50:50:6(containing 0.6‰ phosphoric acid);

Flow rate: 1.0 ml/min;

Column temperature: 25 ℃;

The wave length of determination: 254 nm.

[Storage]

2-8℃, Protected from air and light, refrigerate or freeze.

[References]

[1] Mu Y M, Yanase T, Nishi Y, *et al. Endocrinology, 2001, 142(8):3590-7.*

[2] Hunter J E, Zhang J, Kris-Etherton P M. *Am.J. Clin.l Nutr., 2010, 91(1):46-63.*

[3] Ohta K, Miyamoto H, Yaguchi T, *et al. Mol. Brain Res., 2003, 119(1):83-9.*

[4] Lu Z H, Mu Y M, Wang B A, *et al. Biochem. Bioph. Res. Co., 2003, 303(4):1002–7.*

[5] Fujimoto Y, Yonemura T, Sakuma S. *Prostag. Leukotr. Ess., 2008, 78(1):81-4.*

[6] Ying X Y, Du Y Z, Shen J, *et al.Chinese Journal of Modern Applied Pharmacy, 2009(5):388-90.*

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