

## Palmitic acid Datasheet

4<sup>th</sup> Edition (Revised in July, 2016)

### [ Product Information ]

**Name:** Palmitic acid

**Catalog No.:** CFN99716

**Cas No.:** 57-10-3

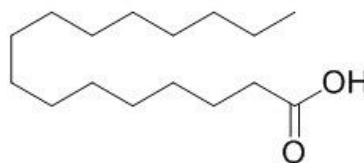
**Purity:** >=98%

**M.F:** C<sub>16</sub>H<sub>32</sub>O<sub>2</sub>

**M.W:** 256.42

**Physical Description:** Powder

**Synonyms:** 1-Pentadecanecarboxylic acid.



### [ Intended Use ]

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

### [ Source ]

The herbs of *Atractylodes macrocephala* Koidz.

### [ Biological Activity or Inhibitors ]

Palmitic acid induces degeneration of myofibrils and modulate apoptosis in rat adult cardiomyocytes.<sup>[1]</sup>

Many of the deleterious effects of high-fat diets, specifically those enriched with palmitic acid, are CNS mediated via PKC-theta activation, resulting in reduced insulin activity.<sup>[2]</sup>

Palmitic acid can induce significantly elevated levels of biologically active neutrophil chemoattractant, IL-8, from steatotic hepatocytes, incubation of the cells with palmitate led to increased IL-8 gene expression and secretion (both mRNA and protein) through mechanisms involving activation of nuclear factor kappaB (NF-kappaB) and c-Jun N-terminal kinase/activator protein-1, suggests that lipid accumulation in hepatocytes can stimulate IL-8 production, thereby potentially contributing to hepatic inflammation and consequent liver injury. <sup>[3]</sup>

Palmitic acid shows selective cytotoxicity to human leukemic cells at concentrations ranging from 12.5 to 50 micrograms/ml, but no cytotoxicity to normal normal human dermal fibroblast (HDF) cells; palmitic acid induces apoptosis in the human leukemic cell line MOLT-4 at 50 micrograms/ml, it also shows in vivo antitumor activity in mice, suggesting that palmitic acid may be a lead compound of anticancer drugs.<sup>[4]</sup>

### **[ Solvent ]**

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

### **[ HPLC Method ]<sup>[5]</sup>**

Mobile phase: 0.05% Acetic acid in water- Methanol, gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 205 nm.

### **[ Storage ]**

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

## **[ References ]**

- [1] Dyntar D, Eppenbergereberhardt M, Maedler K, *et al. Diabetes*, 2001, 50(9):2105-13.
- [2] Benoit S C, Kemp C J, Elias C F, *et al. J. Clin. Invest.*, 2011, 121(9):2577-89.
- [3] Joshi-Barve S, Barve S S, Amancherla K, *et al. Hepatology*, 2007, 46(3):823-30.
- [4] Harada H, Yamashita U, Kurihara H, *et al. Anticancer Res.*, 2002, 22(22):2587-90.
- [5] Jiann Tsyh Lin, Charlotta Turner, Thomas A. McKeon. *J. Liq. Chromatogr.R.T.*, 2004, 27(10):1641-6.

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