

Product Data Sheet

Product Name: 2-fluoro Palmitic Acid

Cat. No.: GC17218

Chemical Properties

Cas. No. 16518-94-8

Chemical Name 2-fluorohexadecanoic acid

SMILES CCCCCCCCCCCCCCCC(F)C(=O)O

Formula $C_{16}H_{31}FO_2$

M.Wt 274.4

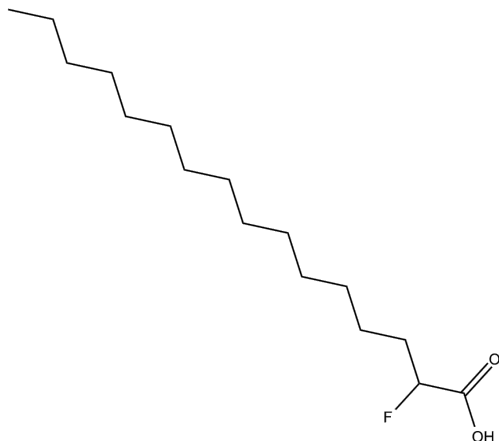
Solubility Soluble in DMSO

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

2-fluoropalmitic acid inhibits sphingosine biosynthesis and long-chain acyl-CoA synthetase [1]. The length of the carbon chain of the fatty acid species defines the substrate specificity for the different acyl-CoA synthetases (ACS).

Mammalian long-chain acyl-CoA synthetases (ACSL) activate fatty acids with chain lengths of 12 to 20 carbon atoms. The long-chain acyl-CoA synthetase mRNA is expressed virtually in heart, liver,

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and epididymal adipose tissues and, to a much lesser extent, in brain, small intestine, and lung [2].

Palmitic acid was a selective cytotoxic substance extracted from the marine algal. At concentrations ranging from 12.5 to 50 µg/ml, palmitic acid showed selective cytotoxicity to human leukemic cells, but no cytotoxicity to normal HDF cells. Palmitic acid (50 µg/ml) induced apoptosis in the human leukemic cell line MOLT-4. Palmitic acid also showed in vivo antitumor activity in mice [3]. 2-fluoropalmitic acid showed an inhibitory effect on sphingosine biosynthesis and long-chain acyl-CoA synthetase with an IC₅₀ value of 0.2 mM [1].

References:

- [1] Soltysiak R M, Matsuura F, Bloomer D, et al. d, l- α -fluoropalmitic acid inhibits sphingosine base formation and accumulates in membrane lipids of cultured mammalian cells[J]. Biochimica et Biophysica Acta (BBA)-Lipids and Lipid Metabolism, 1984, 792(2): 214-226.
- [2] Suzuki H, Kawarabayasi Y, Kondo J, et al. Structure and regulation of rat long-chain acyl-CoA synthetase[J]. Journal of Biological Chemistry, 1990, 265(15): 8681-8685.
- [3] Harada H, Yamashita U, Kurihara H, et al. Antitumor activity of palmitic acid found as a selective cytotoxic substance in a marine red alga[J]. Anticancer research, 2001, 22(5): 2587-2590.

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