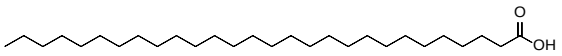
Product data sheet

MedKoo Cat#: 463227 Name: Octacosanoic Acid CAS: 506-48-9 Chemical Formula: $C_{28}H_{56}O_2$ Exact Mass: 424.428 Molecular Weight: 424.754	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Octacosanoic acid is a very long-chain saturated fatty acid. It is the major component of D-003, a mixture of very long-chain aliphatic acids purified from sugar cane wax that has antiplatelet and cholesterol-lowering activities in animal models.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
TBD	TBD	TBD

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.35 mL	11.77 mL	23.54 mL
5 mM	0.47 mL	2.35 mL	4.71 mL
10 mM	0.24 mL	1.18 mL	2.35 mL
50 mM	0.05 mL	0.24 mL	0.47 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Noa M, Mendoza S, Más R, Mendoza N. Effect of D-003, a mixture of high molecular weight primary acids from sugar cane wax, on CL4C-induced liver acute injury in rats. Drugs Exp Clin Res. 2002;28(5):177-83. PMID: 12635492.
2. Menéndez R, Más R, Amor AM, Rodeiros I, Gonzalez RM, Alfonso JL. Inhibition of cholesterol biosynthesis in cultured fibroblasts by D003, a mixture of very long chain saturated fatty acids. Pharmacol Res. 2001 Oct;44(4):299-304. doi: 10.1006/phrs.2001.0851. PMID: 11592864.

In vivo study

1. Menéndez R, Más R, Amor AM, Ledón N, Pérez J, González RM, Rodeiro I, Zayas M, Jiménez S. Inhibition of rat lipoprotein lipid peroxidation by the oral administration of D003, a mixture of very long-chain saturated fatty acids. Can J Physiol Pharmacol. 2002 Jan;80(1):13-21. doi: 10.1139/y01-088. PMID: 11911221.
2. Molina V, Arruzazabala ML, Carbajal D, Más R, Valdés S. Antiplatelet and antithrombotic effect of D-003. Pharmacol Res. 2000 Aug;42(2):137-43. doi: 10.1006/phrs.2000.0664. PMID: 10887042.

7. Bioactivity
Biological target:

Octacosanoic acid is a very long-chain saturated fatty acid.

Product data sheet

In vitro activity

The exposure of cultured fibroblasts to a lipid-depleted medium (LDM) and D003 (0.05-50 microg ml(-1)) for 12 h inhibited, in a dose-dependent manner, cholesterol biosynthesis from 14C-labelled acetate (33-68%). The addition of D003 at concentrations inhibiting cholesterol biosynthesis from labelled acetate significantly decreased incorporation of radioactivity from 3H2O into sterols, but not from 14C-mevalonate. These data indicate that D003 inhibits cholesterol biosynthesis by interfering with early steps of cholesterol biosynthetic pathway.

Reference: Pharmacol Res. 2001 Oct;44(4):299-304. https://pubmed.ncbi.nlm.nih.gov/11592864/

In vivo activity

D003 is a defined mixture of very long-chain saturated fatty acids, also isolated and purified from sugar cane wax, whose main component is octacosanoic acid followed by traicontanoic, dotriacontanoic, and tetracontanoic acids. Since very long-chain fatty acids are structurally related to their corresponding alcohols, this study investigated the effect of oral treatment with D003 (0.5, 5, 50, and 100 mg/kg) over 4 weeks in reducing the susceptibility of rat lipoprotein to oxidative modification. D003 increased lag phase by 53.1, 115.3, and 119.3%, respectively, and decreased the rate of conjugate-diene generation by 16.6, 21.5, and 19.6%, respectively. D003 also inhibited azo-compound initiated and macrophage-mediated lipid peroxidation as judged by the significant decrease in thiobarbituric acid reactive substance (TBARS) generation.

Reference: Can J Physiol Pharmacol. 2002 Jan;80(1):13-21. https://pubmed.ncbi.nlm.nih.gov/11911221/