

## Docosahexaenoic Acid

## Chemical Properties

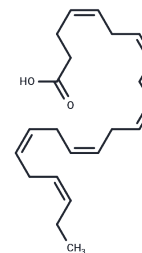
CAS No. : 6217-54-5

Formula: C<sub>22</sub>H<sub>32</sub>O<sub>2</sub>

Molecular Weight: 328.49

Storage: Store at low temperature, Keep away from moisture,  
Store under nitrogen, Keep away from direct sunlightPure form: -20°C for 3 years | In solvent: -80°C for 1  
year

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Docosahexaenoic Acid (DHA) is an essential omega-3 fatty acid prevalent in the brain and retina.
Targets(IC50)	Endogenous Metabolite
In vitro	When monocytes were differentiated to dendritic cells (DCs) in the presence of docosahexaenoic acid (DHA), the expression of costimulatory and antigen presentation markers was altered in a concentration-dependent way, positively or negatively, depending on the markers tested and the maturation stage of the DCs. DHA-treated, mature DCs showed inhibition of IL-6 expression and IL-10 and IL-12 secretion, and their lymphoproliferative stimulation capacity was impaired [1].
In vivo	An experimental model of PD was created by four intraperitoneal injections of MPTP (4 × 20 mg/kg, at 12h intervals). Docosahexaenoic acid was given daily by gavage for 4 weeks (36 mg/kg/day). The number of apoptotic dopaminergic cells significantly increased in MPTP-treated mice compared to controls. Although DHA significantly diminished the number of cell deaths in MPTP-treated mice, it did not improve the decreased motor activity observed in the experimental PD model. Docosahexaenoic acid significantly diminished the amount of cell death in the MPTP+DHA group as compared to the MPTP group [2].

## Solubility Information

Solubility	Ethanol: 30 mg/mL (91.33 mM), Sonication is recommended. DMSO: 100 mg/mL (304.42 mM), Sonication is recommended. H <sub>2</sub> O: 5 mg/mL (15.22 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 4 mg/mL (12.18 mM), Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may</i>

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In vivo Formulation	<i>vary and should be modified based on specific experimental conditions.</i>
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### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.0442 mL	15.2212 mL	30.4423 mL
5 mM	0.6088 mL	3.0442 mL	6.0885 mL
10 mM	0.3044 mL	1.5221 mL	3.0442 mL
50 mM	0.0609 mL	0.3044 mL	0.6088 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Maillard V, et al. Docosahexaenoic acid (DHA) effects on proliferation and steroidogenesis of bovine granulosa cells. *Reprod Biol Endocrinol.* 2018 Apr 26;16(1):40.

Fang X X, Wei P, Zhao K, et al. Fatty acid-binding proteins 3, 7, and 8 bind cholesterol and facilitate its egress from lysosomes. *Journal of Cell Biology.* 2024, 223(4).

Wang YC, et al. Docosahexaenoic Acid Modulates Invasion and Metastasis of Human Ovarian Cancer via Multiple Molecular Pathways. *Int J Gynecol Cancer.* 2016 Jul;26(6):994-1003.

Ozsoy O, et al. The influence and the mechanism of docosahexaenoic acid on a mouse model of Parkinson's disease. *Neurochem Int.* 2011 Oct;59(5):664-70.

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