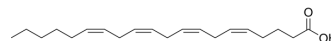


## Arachidonic acid

<b>Cat. No.:</b>	HY-109590
<b>CAS No.:</b>	506-32-1
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>32</sub> O <sub>2</sub>
<b>Molecular Weight:</b>	304.47
<b>Target:</b>	Endogenous Metabolite
<b>Pathway:</b>	Metabolic Enzyme/Protease
<b>Storage:</b>	-20°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	Ethanol : 100 mg/mL (328.44 mM; Need ultrasonic)																					
	DMSO : 100 mg/mL (328.44 mM; Need ultrasonic)																					
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th colspan="3">Concentration</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Preparing Stock Solutions</td> <td>1 mM</td> <td>3.2844 mL</td> <td>16.4220 mL</td> <td>32.8440 mL</td> </tr> <tr> <td>5 mM</td> <td>0.6569 mL</td> <td>3.2844 mL</td> <td>6.5688 mL</td> </tr> <tr> <td>10 mM</td> <td>0.3284 mL</td> <td>1.6422 mL</td> <td>3.2844 mL</td> </tr> </tbody> </table>	Solvent	Mass	Concentration			1 mg	5 mg	10 mg	Preparing Stock Solutions	1 mM	3.2844 mL	16.4220 mL	32.8440 mL	5 mM	0.6569 mL	3.2844 mL	6.5688 mL	10 mM	0.3284 mL	1.6422 mL	3.2844 mL
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Please refer to the solubility information to select the appropriate solvent.																						
<b>In Vivo</b>	1. Add each solvent one by one: PBS Solubility: 10 mg/mL (32.84 mM); Suspended solution; Need ultrasonic and warming and heat to 60°C																					
	2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (8.21 mM); Clear solution																					
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (8.21 mM); Clear solution																					
	4. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (6.83 mM); Clear solution																					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Arachidonic acid (Immunocytophyt) is a polyunsaturated omega-6 fatty acid and a major constituent of biomembranes. Arachidonic acid also acts as the substrate for various lipid mediators, such as prostaglandins (PGs). Arachidonic acid improves cognitive response and cardiovascular function <sup>[1]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	Human Endogenous Metabolite

Arachidonic acid can be used in animal modeling to construct a rat paw edema model. Arachidonic acid (0.07%, 0.15% or 0.32% in diet; 4 weeks) increases Arachidonic acid content in the paw, but has no effect on arthritis severity and PGE2 content of the paw in a rat arthritis model<sup>[1]</sup>.

#### Induction of Paw Edema Model<sup>[2]</sup>

- Background

Principle: Injecting arachidonic acid into the hind paws of rats can induce rapid and sustained inflammatory responses.

- Specific Modeling Methods

Rats: Lewis • male •

Administration: 0.5% • s.c. • single dose

#### Note

Injection method: A single subcutaneous injection of Arachidonic acid in the right hind paw of male Lewis rats (144-241 g) with an injection volume of 0.10 mL (Arachidonic acid is dissolved in 0.2 M carbonate buffer, pH 8.43-8.56).

- Modeling Indicators

Appearance Monitoring: Significant edema became apparent within 5 minutes, and the reaction reached its peak at 1 hour after injection.

- Opposite Product(s): Phenidone (HY-W010144); SK-F86002 (HY-12511)

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Lewis rats (4-week-old) induced arthritis <sup>[1]</sup>
Dosage:	0.07%, 0.15% or 0.32% in diet (w/w)
Administration:	4 weeks
Result:	The Arachidonic acid content of phospholipids in the paw was significantly elevated in a dose-dependent manner.

- Gut Microbes. 2023 Dec;15(2):2265578.
- Redox Biol. 2023 Aug 18;66:102857.
- Redox Biol. 15 October 2021, 102168.
- Cell Death Dis. 2023 Jun 13;14(6):359.
- Cell Death Dis. 2020 Sep 15;11(9):756.

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## REFERENCES

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[1]. Tateishi N, et al. Dietary supplementation with arachidonic acid increases arachidonic acid content in paw, but does not affect arthritis severity or prostaglandin E2 content in rat adjuvant-induced arthritis model. Lipids Health Dis. 2015 Jan 16;14:3.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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