

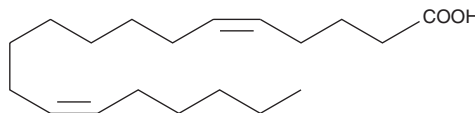
# Product Information



## 5(Z),14(Z)-eicosadienoic acid

Catalog No. 10010484

**CAS Registry No.:** 122055-58-7  
**Formal Name:** (5Z,14Z)-eicosadienoic acid  
**MF:** C<sub>20</sub>H<sub>36</sub>O<sub>2</sub>  
**FW:** 308.5  
**Purity:** ≥98%  
**Stability:** ≥1 year at -20°C  
**Supplied as:** A solution in ethanol



### Laboratory Procedures

For long term storage, we suggest that 5(Z),14(Z)-eicosadienoic acid be stored as supplied at -20°C. It should be stable for at least one year.

5(Z),14(Z)-Eicosadienoic acid is supplied as a solution in ethanol. To change the solvent, simply evaporate the 5(Z),14(Z)-eicosadienoic acid under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of 5(Z),14(Z)-eicosadienoic acid in these solvents is approximately 10 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of 5(Z),14(Z)-eicosadienoic acid is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 5(Z),14(Z)-eicosadienoic acid in PBS, pH 7.2, is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

5(Z),14(Z)-Eicosadienoic acid is a novel ω-6 C<sub>20</sub>:2 fatty acid. The more common 11(Z),14(Z)-eicosadienoic acid competitively inhibits inosine 5'-monophosphate dehydrogenase ( $K_i = 3.1 \mu\text{M}$ )<sup>1</sup> and inhibits the binding of LTB<sub>4</sub> to its receptor on neutrophils ( $K_i = 3.0 \mu\text{M}$ )<sup>2</sup>. Also, serum levels of eicosadienoic acids negatively correlate with degree of sleep disturbance.<sup>3</sup> Eicosadienoic acids are converted by desaturases, *in vivo*, to eicosatrienoic acids, which are potent vasodilators. The physiological effects of 5(Z),14(Z)-eicosadienoic acid are unstudied.

### References

1. Mizushima, Y., Dairaku, I., Yanaka, N., *et al.* Inhibitory action of polyunsaturated fatty acids on IMP dehydrogenase. *Biochimie* **89**, 581-590 (2007).
2. Yagaloff, K.A., Franco, L., Simko, B., *et al.* Essential fatty acids are antagonists of the leukotriene B<sub>4</sub> receptor. *Prostaglandins Leukot. Essent. Fatty Acids* **52**, 293-297 (1995).
3. Irmisch, G., Schläfke, D., Gierow, W., *et al.* Fatty acids and sleep in depressed inpatients. *Prostaglandins Leukot. Essent. Fatty Acids* **76**, 1-7 (2007).

### Related Products

Arachidonic Acid - Cat. No. 90010 • 5(Z),8(Z),11(Z)-Eicosatrienoic Acid - Cat. No. 90190 • 11(Z),14(Z),17(Z)-Eicosatrienoic Acid - Cat. No. 90192 • 14,15-EE-5(Z)-E - Cat. No. 10004946

### Cayman Chemical

**Mailing address**  
1180 E. Ellsworth Road  
Ann Arbor, MI  
48108 USA

**Phone**  
(800) 364-9897  
(734) 971-3335

**Fax**  
(734) 971-3640

**E-Mail**  
custserv@caymanchem.com

**Web**  
www.caymanchem.com

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman warrants only to the original customer that the material will meet our specifications at the time of delivery.

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have any obligation or liability, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees. Buyer's exclusive remedy and Cayman's sole liability hereunder shall be limited to a refund of the purchase price, or at Cayman's option, the replacement, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our Warranty and Limitation of Remedy located on our website and in our catalog.

Copyright Cayman Chemical Company, 11/25/2009