

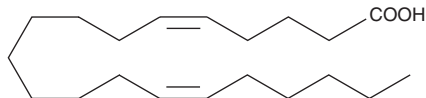
PRODUCT INFORMATION



5(Z),14(Z)-Eicosadienoic Acid

Item No. 10010484

CAS Registry No.: 122055-58-7
Formal Name: 5Z,14Z-eicosadienoic acid
Synonym: FA 20:2
MF: C₂₀H₃₆O₂
FW: 308.5
Purity: ≥98%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

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.

Description

5(Z),14(Z)-Eicosadienoic acid is a novel ω -6 C20:2 fatty acid. The more common 11(Z),14(Z)-eicosadienoic acid competitively inhibits inosine 5'-monophosphate dehydrogenase ($K_i = 3.1 \mu\text{M}$)¹ and inhibits the binding of LTB₄ to its receptor on neutrophils ($K_i = 3.0 \mu\text{M}$).² Also, serum levels of eicosadienoic acids negatively correlate with degree of sleep disturbance.³ 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. Mizushina, 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 B₄ 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).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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