

Product Information



Arachidonic Acid ethyl ester

Catalog No. 10008200

CAS Registry No.: 1808-26-0
Formal Name: 5Z,8Z,11Z,14Z-eicosatetraenoic acid, ethyl ester
Synonym: Ethyl Arachidonate
MF: C₂₂H₃₆O₂
FW: 332.5
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that arachidonic acid ethyl ester be stored as supplied at -20°C. It will be stable for at least one year.

Arachidonic acid ethyl ester is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of arachidonic acid ethyl ester in these solvents is approximately 100 mg/ml.

Arachidonic acid ethyl ester is sparingly soluble in aqueous buffers. Further dilutions of the organic solvent 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. We do not recommend storing the aqueous solution for more than one day.

Arachidonic acid is the keystone essential fatty acid at the origin of the arachidonic acid cascade. It is converted by cyclooxygenase, lipoxygenase, and epoxygenase enzymes into more than one hundred fifty different potent primary autacoid metabolites in species ranging from fungi to plants to mammals. Arachidonic acid is stored in tissue phospholipids in esterified form, where it comprises a small but critically controlled percentage of the polyunsaturated fatty acid pool.¹ Arachidonic acid ethyl ester is a more lipophilic form of arachidonic acid that can be incorporated into dietary regimens or fed to cultured cells as a source of exogenous arachidonate. It is one of the fatty acid ethyl esters that increase cytosolic Ca²⁺ concentration leading to pancreatic acinar cell injury due to excessive consumption of ethanol.² Whereas arachidonic acid inhibits dopamine uptake, the ethyl esterified version does not retain this property.³

References

1. Holman, R.T. Control of polyunsaturated acids in tissue lipids. *J. Am. Coll. Cardiol.* **5**, 183-211 (1986).
2. Chen, N., Appell, M., Berfield, J.L., *et al.* Inhibition by arachidonic acid and other fatty acids of dopamine uptake at the human dopamine transporter. *Eur. J. Pharmacol.* **478**, 89-95 (2003).
3. Criddle, D.N., Raraty, M.G.T., Neoptolemos, J.P., *et al.* Ethanol toxicity in pancreatic acinar cells: Mediation by nonoxidative fatty acid metabolites. *Proc. Natl. Acad. Sci. USA* **101(29)**, 10738-10743 (2004).

Related Products

Arachidonic Acid - Cat. No. 90010 • Arachidonic Acid methyl ester - Cat. No. 90014 • Fatty Acid ethyl ester Standard-PAK - Cat. No. 10008188 • Stearic Acid ethyl ester - Cat. No. 10008196 • Myristic Acid ethyl ester - Cat. No. 10008197 • Linoleic Acid ethyl ester - Cat. No. 10008198 • Linolenic Acid ethyl ester - Cat. No. 10008199 • Oleic Acid ethyl ester - Cat. No. 10008201 • Palmitic Acid ethyl ester - Cat. No. 10008202 • Lauric Acid ethyl ester - Cat. No. 10008203 • Palmitoleic Acid ethyl ester - Cat. No. 10008204

WARNING: THIS PRODUCT IS NOT INTENDED OR APPROVED FOR HUMAN OR VETERINARY USE. USE OF THIS PRODUCT FOR HUMAN OR ANIMAL TESTING IS EXTREMELY HAZARDOUS AND MAY RESULT IN DISEASE, SEVERE INJURY, OR DEATH.

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 under separate cover to the MSDS supervisor at your institution.

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