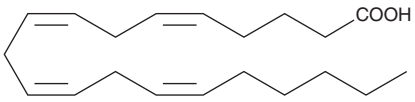
PRODUCT INFORMATION

Arachidonic Acid

Item No. 90010

CAS Registry No.: 506-32-1
Formal Name: 5Z,8Z,11Z,14Z-eicosatetraenoic acid
Synonym: AA
MF: $C_{20}H_{32}O_2$
FW: 304.5
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

Arachidonic acid 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 or dimethyl formamide can be used. To prevent oxidation of arachidonic acid, the solvent should be purged with an inert gas. The solubility of arachidonic acid in these solvents is at least 100 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 aqueous solution of arachidonic acid is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in basic buffers. Arachidonic acid is sparingly soluble in neutral buffers. Store aqueous solutions of arachidonic acid on ice and use within 12 hours of preparation. Although the aqueous solutions of arachidonic acid may be stable for more than 12 hours, we strongly recommend using a fresh preparation each day.

Description

Arachidonic acid is an essential fatty acid and a precursor for all prostaglandins, thromboxanes, and leukotrienes. Virtually all cellular arachidonic acid is esterified in membrane phospholipids where its presence is tightly regulated through multiple interconnected pathways.[1] Free arachidonic acid is a transient, critical substrate for the biosynthesis of eicosanoid second messengers. Receptor-stimulated release, metabolism, and re-uptake of free arachidonate are all important aspects of cell signaling and inflammation.[2]

References

1. Nixon, A.B., Greene, D.G., and Wykle, R.L. Comparison of acceptor and donor substrates in the CoA-independent transacylase reaction in human neutrophils. *Biochim. Biophys. Acta* **1300**, 187-196 (1996).
2. Burgoyne, R.D. and Morgan, A. The control of free arachidonic acid levels. *Trends Biochem. Sci.* **15**, 365-366 (1990).

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