

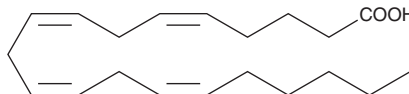
# PRODUCT INFORMATION



## Arachidonic Acid (peroxide free)

Item No. 90010.1

**CAS Registry No.:** 506-32-1  
**Formal Name:** 5Z,8Z,11Z,14Z-eicosatetraenoic acid  
**Synonym:** AA (peroxide free)  
**MF:** C<sub>20</sub>H<sub>32</sub>O<sub>2</sub>  
**FW:** 304.5  
**Purity:** ≥98%  
**Supplied as:** A solution in ethanol containing 0.1% BHT  
**Storage:** -20°C  
**Stability:** ≥1 year



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

### Laboratory Procedures

Arachidonic acid (peroxide free) is supplied as a solution in ethanol containing 0.1% of the antioxidant BHT (2,6-Di-*tert*-butyl-4-methylphenol). If antioxidants are not acceptable in your experiment, arachidonic acid is also available without BHT (Item No. 90010). 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 purged with an inert gas can be used. The solubility of arachidonic acid (peroxide free) in these solvents is approximately 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 (peroxide free) is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in basic buffers. For greater aqueous solubility, arachidonic acid (peroxide free) can be directly dissolved in 0.1 M Na<sub>2</sub>CO<sub>3</sub> (1.7 mg/ml) and then diluted with PBS (pH 7.2) to achieve the desired concentration or pH. Store aqueous solutions of arachidonic acid (peroxide free) on ice and use within 12 hours of preparation. Although the aqueous solutions of arachidonic acid (peroxide free) 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.<sup>1</sup> 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.<sup>2</sup> Arachidonic acid oxidizes spontaneously on exposure to room air, yielding a complex mixture of fatty acid peroxides. Arachidonic acid (peroxide free) contains the antioxidant BHT (Item No. 89910). BHT-free arachidonic acid (Item Nos. 90010 | 10006607) is also available.

### 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(3)**, 187-196 (1996).
2. Burgoyne, R.D. and Morgan, A. The control of free arachidonic acid levels. *Trends Biochem. Sci.* **15(10)**, 365-366 (1990).

#### 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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