

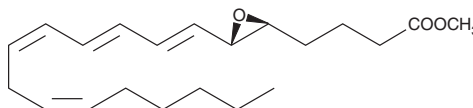
# PRODUCT INFORMATION



## Leukotriene A<sub>4</sub> methyl ester

Item No. 20010

CAS Registry No.:	73466-12-3
Formal Name:	5S- <i>trans</i> -5,6-oxido-7E,9E,11Z,14Z-eicosatetraenoic acid, methyl ester
Synonym:	LTA <sub>4</sub> methyl ester
MF:	C <sub>21</sub> H <sub>32</sub> O <sub>3</sub>
FW:	332.5
Purity:	≥97%
UV/Vis.:	λ <sub>max</sub> : 279 nm ε: 49,000
Supplied as:	A solution in hexane/1% triethylamine
Storage:	-80°C
Stability:	As supplied, 1 year from the QC date provided on the Certificate of Analysis, when stored properly
Special Conditions:	Light Sensitive



### Laboratory Procedures

Leukotriene A<sub>4</sub> methyl ester (LTA<sub>4</sub> methyl ester) methyl ester is supplied as a solution in hexane containing 1% triethylamine. The naturally occurring free acid of LTA<sub>4</sub> is too unstable for storage. The methyl ester is provided because of its increased stability. However, both the free acid and the methyl ester decompose rapidly under acidic conditions. Before performing any biological experiments, LTA<sub>4</sub> methyl ester should be hydrolyzed to LTA<sub>4</sub>. Alkaline hydrolysis of LTA<sub>4</sub> methyl ester can be performed as follows:

Prepare a hydrolysis solution consisting of degassed acetone (8 ml) and 0.25 M NaOH (2 ml) and cool it to 0°C. Evaporate the hexane solution of LTA<sub>4</sub> methyl ester just to dryness under nitrogen and immediately add 4 ml of the hydrolysis solution per 1 mg of LTA<sub>4</sub> methyl ester (e.g., 400 ml per 100 mg vial). Allow the reaction to stand under an inert atmosphere of nitrogen or argon at 22°C for 40 minutes. The resulting basic solution of LTA<sub>4</sub> will be stable for about 60 minutes at room temperature or for 12 hours at 0°C. Dilutions of this LTA<sub>4</sub> stock solution can be made directly into aqueous buffers. Incorporation of albumin in the buffers will increase the stability of LTA<sub>4</sub> in aqueous media.<sup>1</sup> Solutions not used within 12 hours of hydrolysis should be discarded.

### Description

LTA<sub>4</sub> is synthesized in mast cells, eosinophils, and neutrophils from arachidonic acid by 5-lipoxygenase, which exhibits both lipoxygenase and LTA<sub>4</sub> synthase activities.<sup>2,3</sup> LTA<sub>4</sub> is rapidly metabolized by LTA<sub>4</sub> hydrolase or LTC<sub>4</sub> synthase to LTB<sub>4</sub> or LTC<sub>4</sub>, respectively.<sup>3</sup> LTA<sub>4</sub> from leukocytes is known to undergo transcellular metabolism in platelets, erythrocytes, and endothelial cells.<sup>4</sup> Further metabolism of LTA<sub>4</sub> by 15-lipoxygenase leads to lipoxin biosynthesis.<sup>3</sup> LTA<sub>4</sub> as a free acid is highly unstable. The methyl ester is stable and can be readily hydrolyzed to the free acid as needed.

### References

1. Manganaro, F., Gaudette, Y., Pombo-Gentile, A., *et al. Prostaglandins* **36**, 859-874 (1988).
2. Shimizu, T., Rådmark, O., and Samuelsson, B. *Proc. Nat. Acad. Sci USA* **81**, 689-693 (1984).
3. Samuelsson, B., Dahlén, S.-E., Lindgren, J.Å., *et al. Science* **237**, 1171-1176 (1987).
4. MacClouf, J.A. and Murphy, R.C. *J. Biol. Chem.* **263**, 174-181 (1988).

#### 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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