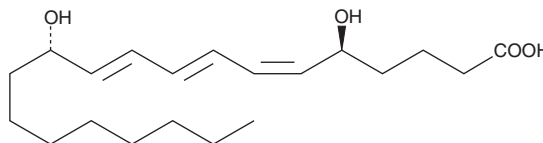


# PRODUCT INFORMATION



## 12-*epi* Leukotriene B<sub>3</sub> Item No. 20134

**Formal Name:** 5S,12S-dihydroxy-6Z,8E,10E-eicosatrienoic acid  
**Synonym:** 12-*epi* LTB<sub>3</sub>  
**MF:** C<sub>20</sub>H<sub>34</sub>O<sub>4</sub>  
**FW:** 338.5  
**Purity:** ≥97%  
**UV/Vis.:** λ<sub>max</sub>: 270 nm  
**Supplied as:** A solution in ethanol  
**Storage:** -20°C  
**Stability:** ≥1 year  
**Special Conditions:** Light sensitive



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

### Laboratory Procedures

12-*epi* LTB<sub>3</sub> 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. 12-*epi* LTB<sub>3</sub> is miscible in these solvents.

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. Organic solvent-free aqueous solutions of 12-*epi* LTB<sub>3</sub> can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 12-*epi* LTB<sub>3</sub> in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

The conversion of LTA into different isomers of LTB is complex, and has generated confusion in the past. The enzymatic hydrolysis of LTA leads to LTB, which is the corresponding 5(S),12(R)-dihydroxy acid containing a 6(Z),8(E),10(E) conjugated triene. Non-enzymatic hydrolysis of LTA produces none of this material, but instead produces both the 12(S) and the 12(R) isomers of LTB in which the triene component now contains a 6-*trans* double bond.<sup>1</sup> 12-*epi* (or 12(S)) LTB isomers which contain the natural 6-*cis* olefin are not produced either by enzymatic or by non-enzymatic processes. Further, 3-series LTs (derived from Mead acid) are only seen in essential fatty acid deficiency. Mead acid is a good substrate for 5-lipoxygenase, leading to LTA<sub>3</sub>. Enzymatic conversion of LTA<sub>3</sub> to LTB<sub>3</sub> is very low because LTA<sub>3</sub> is actually an inhibitor of LTA hydrolase.<sup>2</sup> Non-enzymatic hydrolysis of LTA<sub>3</sub> leads to 6-*trans*-12-*epi* LTB<sub>3</sub>, and to 6-*trans* LTB<sub>3</sub>. The biological activity of 12-*epi* LTB<sub>3</sub> has not been explored.

### References

1. Sala, A., Bolla, M., Zarini, S., *et al.* Release of leukotriene A<sub>4</sub> versus leukotriene B<sub>4</sub> from human polymorphonuclear leukocytes. *J. Biol. Chem.* **271**, 17944-17948 (1996).
2. Lefkowitz, J.B. Essential fatty acid deficiency: Probing the role of arachidonate in biology. *Adv. Prostaglandin Thromboxane Leukotriene Res.* **20**, 224-231 (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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 04/26/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897

[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM