

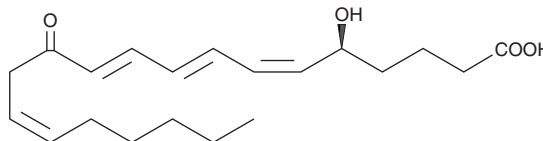
Product Information



12-oxo Leukotriene B₄

Catalog No. 20140

CAS Registry No.: 136696-10-1
Formal Name: 5S-hydroxy-12-oxo-6Z,8E,10E,14Z-eicosatetraenoic acid
Synonyms: 12-keto LTB₄, 12-oxo LTB₄
MF: C₂₀H₃₀O₄
FW: 334.4
Purity: ≥95%
Stability: ≥1 year at -80°C
Supplied as: A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that 12-oxo leukotriene B₄ (12-oxo LTB₄) be stored as supplied at -80°C. It should be stable for at least one year.

12-oxo LTB₄ 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-oxo LTB₄ 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. If an organic solvent-free solution of 12-oxo LTB₄ is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 12-oxo LTB₄ in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

LTB₄ is a dihydroxy fatty acid derived from arachidonic acid through the 5-LO pathway. It promotes a number of leukocyte functions including aggregation, stimulation of ion fluxes, enhancement of lysosomal enzyme release, superoxide anion production, chemotaxis, and chemokinesis. 12-oxo LTB₄ is an initial metabolite of LTB₄ formed *via* the LTB₄ 12-hydroxydehydrogenase pathway.¹⁻³ It is rapidly converted to 10,11-dihydro-12-oxo-LTB₄, followed by reduction of the 12-oxo group to give 10,11-dihydro-LTB₄.² 12-oxo-LTB₄ (EC₅₀=33 nM) is about 70-fold less potent than LTB₄ (EC₅₀=0.46 nM) at stimulating Ca²⁺ mobilization in human neutrophils.⁴ It is also significantly less potent than LTB₄ at stimulating neutrophil migration with EC₅₀ values of 170 and 2.7 nM for 12-oxo-LTB₄ and LTB₄, respectively.⁴

References

1. Yokomizo, T., Izumi, T., Takahashi, T., *et al.* Enzymatic inactivation of leukotriene B₄ by a novel enzyme found in the porcine kidney. Purification and properties of leukotriene B₄ 12-hydroxydehydrogenase. *J. Biol. Chem.* **268**, 18128-18135 (1993).
2. Wainwright, S.L. and Powell, W.S. Mechanism for the formation of dihydro metabolites of 12-hydroxyeicosanoids conversion of leukotriene B₄ and 12-hydroxy-5,8,10,14-eicosatetraenoic acid to 12-oxo intermediates. *J. Biol. Chem.* **266**(31), 20899-20906 (1991).
3. Wheelan, P., Zirrolli, J.A., Morelli, J.G., *et al.* Metabolism of leukotriene B₄ by cultural human keratinocytes. Formation of glutathione conjugates and dihydro metabolites. *J. Biol. Chem.* **268**, 25439-25448 (1993).
4. Powell, W.S., Rokach, J., Khanapure, S.P., *et al.* Effects of metabolites of leukotriene B₄ on human neutrophil migration and cytosolic calcium levels. *J. Pharmacol. Exp. Ther.* **276**(2), 728-736 (1996).

Related Products

Leukotriene B₄ - Cat. No. 20110 • 12-*epi* Leukotriene B₄ - Cat. No. 20135 • 20-carboxy Leukotriene B₄ - Cat. No. 20180 • 20-hydroxy Leukotriene B₄ - Cat. No. 20190 • 6-*trans* Leukotriene B₄ - Cat. No. 35250 • 6-*trans*-12-*epi* Leukotriene B₄ - Cat. No. 35265 • Leukotriene B₄-d₄ - Cat. No. 320110

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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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