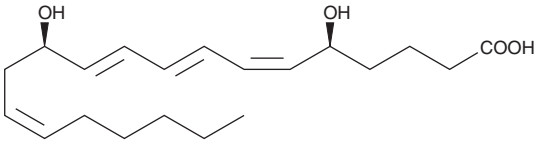
PRODUCT INFORMATION

Leukotriene B_4

Item No. 20110

CAS Registry No.: 71160-24-2
Formal Name: 5S,12R-dihydroxy-6Z,8E,10E,14Z-eicosatetraenoic acid
Synonym: LTB_4
MF: $C_{20}H_{32}O_4$
FW: 336.5
Purity: ≥95%*
UV/Vis.: λ_{max}: 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

LTB_4 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 purged with an inert gas can be used. LTB_4 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. If an organic solvent-free solution of LTB_4 is needed, the ethanol can be evaporated under a stream of nitrogen and the neat oil dissolved in the buffer of choice. LTB_4 is soluble in PBS (pH 7.2) at a concentration of 1 mg/ml. Be certain that your buffers are free of oxygen, transition metal ions, and redox active compounds. Also, ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

LTB_4 is a dihydroxy fatty acid derived from arachidonic acid through the 5-lipoxygenase pathway.[1-3] It promotes a number of leukocyte functions, including aggregation, stimulation of ion fluxes, enhancement of lysosomal enzyme release, superoxide anion production, chemotaxis, and chemokinesis. In subnanomolar ranges (3.9×10^{-10} M), LTB_4 causes chemotaxis and chemokinesis in human polymorphonuclear leukocytes.[4] At higher concentrations, (1.0×10^{-7} M), LTB_4 leads to neutrophil aggregation and degranulation as well as superoxide anion production.[4,5]

References

1. Rådmark, O., Malmsten, C., Samuelsson, B., *et al.* Leukotriene A: Stereochemistry and enzymatic conversion to leukotriene B. *Biochem. Biophys. Res. Commun.* **92**, 954-961 (1980).
2. Ford-Hutchinson, A.W., Bray, M.A., Doig, M.V., *et al.* Leukotriene B, a potent chemokinetic and aggregating substance released from polymorphonuclear leukocytes. *Nature* **286**, 264-265 (1980).
3. McGee, J. and Fitzpatrick, F. Enzymatic hydration of leukotriene A_4. *J. Biol. Chem.* **260**, 12832-12837 (1985).
4. Ford-Hutchinson, A.W. Leukotriene B_4 in inflammation. *Crit. Rev. Immunol.* **10**, 1-12 (1990).
5. McMillan, R.M. and Foster, S.J. Leukotriene B_4 and inflammatory disease. *Agents Actions* **24**, 114-119 (1988).

*All cysteinyl leukotrienes may contain a small amount of the 11-*trans* isomer. The purity for all such leukotrienes excludes the 1-4% *trans* isomer which may be present

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