



# SZABO SCANDIC

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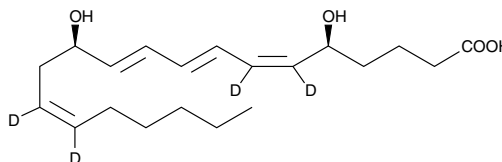
# Product Information



## Leukotriene B<sub>4</sub>-d<sub>4</sub>

Item No. 320110

**CAS Registry No.:** 124629-74-9  
**Formal Name:** 5S,12R-dihydroxy-6Z,8E,10E,14Z-eicosatetraenoic-6,7,14,15-d<sub>4</sub> acid  
**MF:** C<sub>20</sub>H<sub>28</sub>D<sub>4</sub>O<sub>4</sub>  
**FW:** 340.5  
**Chemical Purity:** ≥97%  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>4</sub>); ≥1% d<sub>0</sub>  
**Stability:** ≥1 year at -20°C  
**Supplied as:** A solution in acetonitrile  
**UV/Vis.:** λ<sub>max</sub>: 270 nm ε: 50,000  
**Miscellaneous:** Light Sensitive



### Laboratory Procedures

Leukotriene B<sub>4</sub>-d<sub>4</sub> (LTB<sub>4</sub>-d<sub>4</sub>) contains four deuterium atoms at the 6, 7, 14, and 15 positions. It is intended for use as an internal standard for the quantification of LTB<sub>4</sub> by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that LTB<sub>4</sub>-d<sub>4</sub> be stored as supplied at -20°C. It should be stable for at least one year.

LTB<sub>4</sub>-d<sub>4</sub> is supplied as a solution in acetonitrile. To change the solvent, simply evaporate the acetonitrile under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of LTB<sub>4</sub>-d<sub>4</sub> in these solvents is approximately 50 mg/ml.

LTB<sub>4</sub>-d<sub>4</sub> is used as an internal standard for the quantification of LTB<sub>4</sub> by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the weight indicated on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard LTB<sub>4</sub> by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

LTB<sub>4</sub> is a dihydroxy fatty acid derived from arachidonic acid through the 5-lipoxygenase pathway.<sup>1-3</sup> 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 x 10<sup>-10</sup> M), LTB<sub>4</sub> causes chemotaxis and chemokinesis in human PMNL.<sup>4</sup> At higher concentrations, (1.0 x 10<sup>-7</sup> M), LTB<sub>4</sub> leads to neutrophil aggregation and degranulation as well as superoxide anion production.<sup>4,5</sup>

### 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<sub>4</sub>. *J. Biol. Chem.* **260**, 12832-12837 (1985).
4. Ford-Hutchinson, A.W. Leukotriene B<sub>4</sub> in inflammation. *Crit. Rev. Immunol.* **10**, 1-12 (1990).
5. McMillan, R.M. and Foster, S.J. Leukotriene B<sub>4</sub> and inflammatory disease. *Agents Actions* **24**, 114-119 (1988).

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