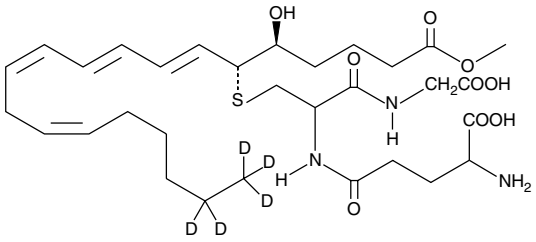
Product Information

Leukotriene C_4-d_5 methyl ester

Item No. 9001287

Formal Name: 5S-hydroxy-6R-(S-glutathionyl)-7E,9E,11Z,14Z-d_5-eicosatetraenoic acid, methyl ester
Synonym: LTC_4-d_5 methyl ester
MF: $C_{31}H_{44}D_5N_3O_9S$
FW: 644.8
Chemical Purity: ≥97% LTC_4 methyl ester
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_5), ≤1% d_0
Stability: ≥1 year at -80°C
Supplied as: A solution in ethanol:water (95:5)
UV/Vis.: λ_{max}: 282 nm
Miscellaneous: Light Sensitive



Laboratory Procedures

Leukotriene C_4-d_5 (LTC_4-d_5) methyl ester contains five deuterium atoms at the 19, 19', 20, 20, and 20 positions. It is intended for use as an internal standard for the quantification of LTC_4 methyl ester by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that LTC_4-d_5 methyl ester be stored as supplied at -80°C. It should be stable for at least one year.

LTC_4-d_5 methyl ester is supplied as a solution in ethanol:water (95:5). To change the solvent, simply evaporate the ethanol:water 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. The solubility of LTC_4-d_5 methyl ester in these solvents is approximately 50 mg/ml.

LTC_4-d_5 methyl ester is used as an internal standard for the quantification of LTC_4 methyl ester by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

LTC_4 is the parent cysteinyl-leukotriene produced by the LTC_4 synthase-catalyzed conjugation of glutathione to LTA_4. LTC_4 is produced by neutrophils, macrophages, and mast cells, and by transcellular metabolism in platelets.[1] It is one of the constituents of slow-reacting substance of anaphylaxis and exhibits potent smooth muscle contracting activity.[2] LTC_4-induced bronchoconstriction and enhanced vascular permeability contribute to the pathogenesis of asthma and acute allergic hypersensitivity.[3,4] The concentration of LTC_4 required to produce marked contractions of lung parenchymal strips and isolated tracheal rings is about 1 nM.[4] LTC_4 methyl ester is a more lipid soluble form of LTC_4. The biological activity of LTC_4 methyl ester has not been reported.

References

1. Maclouf, J.A. and Murphy, R.C. Transcellular metabolism of neutrophil-derived leukotriene A_4 by human platelets. A potential cellular source of leukotriene C_4. *J. Biol. Chem.* **263**, 174-181 (1988).
2. Piper, P.J. Formation and actions of leukotrienes. *Physiol. Rev.* **64**, 744-761 (1984).
3. Samuelsson, B. Leukotrienes: Mediators of immediate hypersensitivity reactions and inflammation. *Science* **220**, 568-575 (1983).
4. Lefer, A.M. Leukotrienes as mediators of ischemia and shock. *Biochem. Pharmacol.* **35**, 123-127 (1986).

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