

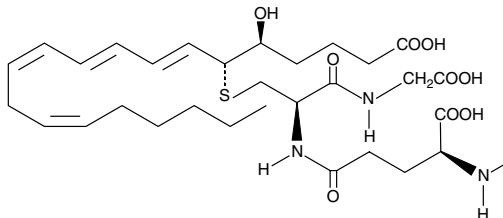
Product Information



N-methyl Leukotriene C₄

Item No. 13390

CAS Registry No.: 131391-65-6
Formal Name: N-methyl-5S-hydroxy-6R-(S-glutathionyl)-7E,9E,11Z,14Z-eicosatetraenoic acid
Synonyms: N-methyl LTC₄
MF: C₃₁H₄₉N₃O₉S
FW: 639.8
Purity: ≥97%
Stability: ≥1 year at -80°C
Supplied as: A solution in ethanol
Miscellaneous: Light Sensitive



Laboratory Procedures

For long term storage, we suggest that N-methyl leukotriene C₄ (N-methyl LTC₄) be stored as supplied at -80°C. It should be stable for at least one year.

N-methyl LTC₄ is supplied as a solution in ethanol. A stock solution may be made by dissolving the ethanol in an organic solvent purged with an inert gas. N-methyl LTC₄ is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of N-methyl LTC₄ in these solvents is approximately 50 mg/ml.

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 N-methyl LTC₄ is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of N-methyl LTC₄ in PBS, pH 7.2, is approximately 100 µg/ml. We do not recommend storing the aqueous solution for more than one day.

Produced by neutrophils, macrophages, mast cells, and by transcellular metabolism in platelets, LTC₄ is the parent cysteinyl leukotriene formed by the LTC₄ synthase-catalyzed conjugation of glutathione to LTA₄.¹ It is one of the constituents of slow-reacting substance of anaphylaxis (SRS-A) and exhibits potent smooth muscle contracting activity.² LTC₄, however, is rapidly metabolized to LTD₄ and LTE₄, which makes the characterization of LTC₄ pharmacology difficult.³ N-methyl LTC₄ is a synthetic analog of LTC₄ that is not readily metabolized to LTD₄ and LTE₄.⁴ It acts as a potent and selective CysLT₂ receptor agonist exhibiting EC₅₀ values of 122 and > 2,000 nM at the human CysLT₂ and CysLT₁ receptors, respectively.⁵ It has essentially the same potency as LTC₄ at both the human and murine receptors CysLT₂ receptors. N-methyl LTC₄ is potent and active *in vivo*, causing vascular leak in mice overexpressing the human CysLT₂ receptor but not in CysLT₂ receptor knockout mice.⁵

References

1. MacLouf, J.A. and Murphy, R.C. Transcellular metabolism of neutrophil-derived leukotriene A₄ by human platelets. A potential cellular source of leukotriene C₄. *J. Biol. Chem.* **263**, 174-181 (1988).
2. Piper, P.J. Formation and actions of leukotrienes. *Physiol. Rev.* **64**, 744-761 (1984).
3. Campbell, B.J., Baker, S.F., Shukla, S.D., *et al.* Bioconversion of leukotriene D₄ by lung dipeptidase. *Biochim. Biophys. Acta* **1042**, 107-112 (1990).
4. Gareau, Y., Zamboni, R., and Wong, A.W. Total synthesis of N-methyl LTC₄: A novel methodology for the monomethylation of amines. *J. Org. Chem.* **58**, 1582-1585 (1993).
5. Yan, D., Stocco, R., Sawyer, N., *et al.* Differential signaling of cysteinyl leukotrienes and a novel cysteinyl leukotriene receptor ₂ (CysLT₂) agonist, N-methyl-leukotriene C₄, in calcium reporter and beta arrestin assays. *Mol. Pharmacol.* (2010).

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

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