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Product Information



20-carboxy Leukotriene B

Item No. 20180

CAS Registry No.: 80434-82-8

Formal Name: 5S,12R-dihydroxy-6Z,8E,10E,14Z-

eicosatetraene-1,20-dioic acid

MF: $C_{20}H_{30}O_6$ FW: 366.5 **Purity:** ≥97%

Stability: ≥2 years at -20°C Supplied as: A solution in ethanol λ_{max} : 270 nm ϵ : 50,000 UV/Vis.: Miscellaneous: Oxygen and light sensitive

Laboratory Procedures

For long term storage, we suggest that 20-carboxy leukotriene B_4 (20-carboxy LTB₄) be stored as supplied at -20°C. It should be stable for at least two years.

20-carboxy 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 or dimethyl formamide purged with an inert gas can be used. The solubility of 20-carboxy LTB₄ 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. 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. If an organic solvent-free solution of 20-carboxy LTB, is needed, evaporate the ethanol under a stream of nitrogen and dissolve the neat oil in the buffer of choice. 20-carboxy LTB4 is soluble in PBS (pH 7.2) at concentrations of at least 1 mg/ml. For more concentrated aqueous solutions, use basic buffers (pH > 8.0 and ionic strength ≥ 0.1M). Store aqueous solutions of 20-carboxy LTB₄ on ice and use within 12 hours.

20-carboxy LTB4 is a metabolite of LTB4 in human neutrophils. In human leukocytes, LTB4 is inactivated by the enzyme LTB $_4$ 20-hydroxylase. The resulting 20-hydroxy LTB $_4$ is further oxidized to 20-carboxy LTB $_4$. LTB $_4$ metabolism in isolated rat hepatocytes also results in production of 20-carboxy LTB₄ along with other ω-oxidation products.² The biological activity of 20-carboxy LTB $_4$ is only about 2.6% compared to that of LTB $_4$ in causing PMNL degranulation. 3

References

- 1. Hansson, G., Lindgren, J.Å., Dahlén, S.-E., et al. Identification and biological activity of novel ω-oxidized metabolites of leukotriene B₄ from human leukocytes. FEBS Lett. 130, 107-112 (1981).
- Harper, T.W., Garrity, M.J., and Murphy, R.C. Metabolism of leukotriene B₄ in isolated rat hepatocytes. Identification of a novel 18-carboxy-19,20-dinor leukotriene B₄ metabolite. J. Biol. Chem. 261, 5414-5418 (1986).
- Feinmark, S.J., Lindgren, J.Å., Claesson, H.-E., et al. Stimulation of human leukocyte degranulation by leukotriene $\boldsymbol{B_4}$ and its $\omega\text{-oxidized}$ metabolites. FEBS Lett. 136, 141-144 (1981).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/20180

WARNING: This product is for laboratory research only: not for administration to humans. Not for human or veterinary DIAGNOSTIC OR THERAPEUTIC USE.

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 via email to your institution.

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