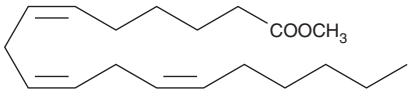
PRODUCT INFORMATION

γ-Linolenic Acid methyl ester

Item No. 10006579

CAS Registry No.: 16326-32-2
Formal Name: 6Z,9Z,12Z-octadecatrienoic acid, methyl ester
Synonyms: Methyl GLA, Methyl γ-Linolenate
MF: $C_{19}H_{32}O_2$
FW: 292.5
Purity: ≥98%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: As supplied, 1 year from the QC date provided on the Certificate of Analysis, when stored properly



Laboratory Procedures

γ-Linolenic Acid methyl ester (methyl GLA) 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 and dimethyl formamide purged with an inert gas can be used. The solubility of methyl GLA in these solvents is at least 100 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 methyl GLA is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of methyl GLA in PBS (pH 7.2) is at least 0.15 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Polyunsaturated fatty acids (PUFAs) are essential nutrients that show distinct deficiency syndromes when not present in adequate amounts in the diet.[1,2] Methyl GLA is an esterified version of the free acid which is less water soluble but more ammenable for the formulation of GLA-containing diets and dietary supplements. GLA is an ω-6 fatty acid which can be elongated to arachidonic acid for endogenous eicosanoid synthesis. It is a weak leukotriene B_4 (LTB_4) receptor antagonist, inhibiting [^{3}H]-LTB_4 binding to porcine neutrophil membranes with a K_i of 1 µM.[3] GLA produces 53% inhibition at a 1 mg/kg dose in an *in vivo* model of LTB_4-induced bronchoconstriction.[3]

References

1. Simopoulos, A.P. Omega-3 fatty acids in health and disease and in growth and development. Am. *J. Clin. Nutr.* **54**, 438-463 (1991).
2. Holman, R.T. Control of polyunsaturated acids in tissue lipids. *J. Am. Coll. Cardiol.* **5**, 183-211 (1986).
3. Yagaloff, K.A., Franco, L., Simko, B., *et al.* Essential fatty acids are antagonists of the leukotriene B_4 receptor. *Prostaglandins Leukot. Essent. Fatty Acids* **52**, 293-297 (1995).

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