

## PRODUCT DATA SHEET

### Methyl eicosatrienoate (all *cis*-8,11,14)

**Catalog number:** 1269

**Synonyms:** Methyl homogamma-linolenate;  
C20:3 (all *cis*-8,11,14) Methyl  
ester; DGLA

**Source:** semisynthetic, plant

**Solubility:** chloroform, hexane, ethyl ether

**CAS number:** 21061-10-9

**Molecular Formula:** C<sub>21</sub>H<sub>36</sub>O<sub>2</sub>

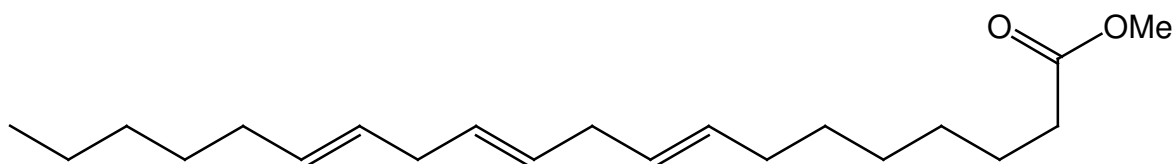
**Molecular Weight:** 321

**Storage:** -20°C

**Purity:** TLC: 99%, GC >99%

**TLC System:** hexane/ethyl ether (85:15)

**Appearance:** liquid



### **Application Notes:**

This high purity *omega*-6 very long-chain fatty acid methyl ester is ideal as a standard and for biological studies. Dihomo-*gamma*-linolenic acid (DGLA) is an essential *omega*-6 polyunsaturated fatty acid that is strongly linked to anti-inflammatory and anti-cancer activities. DGLA is derived from *gamma*-linolenic acid (C18:3) and can be converted to arachidonic acid (AA, C20:4), a fatty acid associated with promoting inflammation. The lipid-peroxidizing enzyme cyclooxygenase (COX) is responsible for the conversion of DGLA to prostaglandin series 1 and 15-(S)- hydroxy-8,11,13-eicosatrienoic acid both of which have anti-inflammatory and anti-tumor properties.<sup>1</sup> The conversion of DGLA to AA proceeds slowly due to the limited activity of the *delta*-5-desaturase enzyme; The subsequent accumulation of DGLA and its anti-inflammatory products attenuates AA metabolites such as prostaglandin series 2, 4-series leukotrienes and plateletactivating factor.<sup>2</sup> Patients with atopic dermatitis have low DGLA levels in serum phospholipids and DGLA supplementation, rather than the more common *gamma*-linolenic acid, has been proposed as a treatment for this disease.<sup>3</sup>

### **Selected References:**

1. S. Takai et al. "Anti-Atherosclerotic Effects of Dihomo-*gamma*-Linolenic Acid in ApoE-Deficient Mice" *Journal of Atherosclerosis and Thrombosis*, Vol. 16(4) pp. 1-10, 2009
2. X. Wang et al. "Multiple roles of dihydro-*gamma*-linolenic acid against proliferation diseases" *Lipids in Health and Disease*, Vol. 11(25) pp. 1-9, 2012
3. N. Teraoka et al. "Oral Supplementation with Dihomo-*gamma*-Linolenic Acid-Enriched Oil Altered Serum Fatty Acids in Healthy Men" *Biosci, Biotechnol. Biochem.*, Vol. 73(6) pp. 1453-1455, 2009

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