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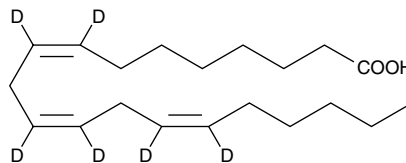
# Product Information



## Dihomo- $\gamma$ -Linolenic Acid-d<sub>6</sub>

Item No. 10458

**CAS Registry No.:** 81540-86-5  
**Formal Name:** 8Z,11Z,14Z-eicosatrienoic-8,9,11,12,14,15-d<sub>6</sub> acid  
**Synonym:** DGLA-d<sub>6</sub>  
**MF:** C<sub>20</sub>H<sub>28</sub>D<sub>6</sub>O<sub>2</sub>  
**FW:** 312.5  
**Chemical Purity:** ≥98%  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>6</sub>); ≤1% d<sub>0</sub>  
**Stability:** ≥1 year at -20°C  
**Supplied as:** A solution in methyl acetate



### Laboratory Procedures

Dihomo- $\gamma$ -Linolenic Acid-d<sub>6</sub> (DGLA-d<sub>6</sub>) contains six deuterium atoms at the 8, 9, 11, 12, 14, and 15 positions. It is intended for use as an internal standard for the quantification of DGLA by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that DGLA-d<sub>6</sub> be stored as supplied at -20°C. It should be stable for at least one year.

DGLA-d<sub>6</sub> is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of DGLA-d<sub>6</sub> in these solvents is approximately 100 mg/ml.

DGLA-d<sub>6</sub> is used as an internal standard for the quantification of DGLA 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).

DGLA (20:3), an elongation product of  $\gamma$ -linolenic acid (18:3), is rapidly metabolized by fatty acid desaturases to produce arachidonic acid (20:4). DGLA is metabolized through the cyclooxygenase pathway to produce 1-series prostaglandins, (PGs), including PGE<sub>1</sub>.<sup>1,2</sup> In mice, DGLA supplementation in the diet can reduce atopic dermatitis and atherosclerosis.<sup>3,4</sup>

### References

1. Bell, J.G., Tocher, D.R., and Sargent, J.R. Effect of supplementation with 20:3(n-3), 20:4(n-6) and 20:5(n-3) on the production of prostaglandins E and F of the 1-, 2- and 3-series in turbot (*Scophthalmus maximus*) brain astroglial cells in primary culture. *Biochim. Biophys. Acta* **1211**, 335-342 (1994).
2. Levin, G., Duffin, K.L., Obukowicz, M.G., *et al.* Differential metabolism of dihomogamma-linolenic acid and arachidonic acid by cyclo-oxygenase-1 and cyclo-oxygenase-2: Implications for cellular synthesis of prostaglandin E<sub>1</sub> and prostaglandin E<sub>2</sub>. *Biochem. J.* **365**, 489-496 (2002).
3. Kawashima, H., Tateishi, N., Shiraishi, A., *et al.* Oral administration of dihomogamma-linolenic acid prevents development of atopic dermatitis in NC/Nga mice. *Lipids* **43**(1), 37-43 (2007).
4. Takai, S., Jin, D., Kawashima, H., *et al.* Anti-atherosclerotic effects of dihomogamma-linolenic acid in ApoE-deficient mice. *J. Atheroscler. Thromb.* **16**(4), 480-489 (2009).

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