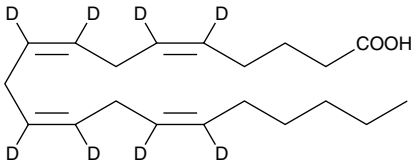
Product Information

Arachidonic Acid-d_8

Item No. 390010

CAS Registry No.: 69254-37-1
Formal Name: 5Z,8Z,11Z,14Z-eicosatetraenoic-5,6,8,9,11,12,14,15-d_8 acid
Synonym: AA-d_8
MF: $C_{20}H_{24}D_8O_2$
FW: 312.5
Chemical Purity: ≥96% Arachidonic Acid
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_8); ≤1% d_0
Stability: ≥1 year at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

Arachidonic acid-d_8 contains eight deuterium atoms at the 5, 6, 8, 9, 11, 12, 14, and 15 positions. It is intended for use as an internal standard for the quantification of arachidonic acid by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that arachidonic acid-d_8 be stored as supplied at -20°C. It should be stable for at least one year.

Arachidonic acid-d_8 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, or dimethyl formamide purged with an inert gas can be used. The solubility of arachidonic acid-d_8 in these solvents is approximately 100 mg/ml.

Arachidonic acid-d_8 is used as an internal standard for the quantification of arachidonic acid by stable isotope dilution MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the weight indicated on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard arachidonic acid by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Arachidonic acid is an essential fatty acid and a precursor for all prostaglandins, thromboxanes, and leukotrienes. Virtually all cellular arachidonic acid is esterified in membrane phospholipids where its presence is tightly regulated through multiple interconnected pathways.[1] Free arachidonic acid is a transient, critical substrate for the biosynthesis of eicosanoid second messengers. Receptor-stimulated release, metabolism, and re-uptake of free arachidonate are all important aspects of cell signaling and inflammation.[2]

References

1. Nixon, A.B., Greene, D.G., and Wykle, R.L. Comparison of acceptor and donor substrates in the CoA-independent transacylase reaction in human neutrophils. *Biochim. Biophys. Acta* **1300**, 187-196 (1996).
2. Burgoyne, R.D. and Morgan, A. The control of free arachidonic acid levels. *Trends Biochem. Sci.* **15**, 365-366 (1990).

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