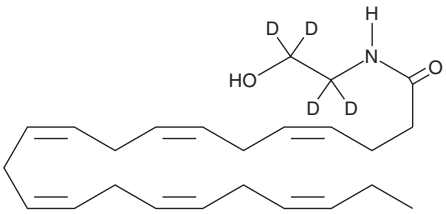
PRODUCT INFORMATION

Docosahexaenoyl Ethanolamide-d_4

Item No. 9001108

CAS Registry No.: 946524-43-2
Formal Name: N-(2-hydroxyethyl-1,1',2,2'-d_4)-4Z,7Z,10Z,13Z,16Z,19Z-docosahexaenamide
Synonyms: DEA-d_4, DHEA-d_4
MF: $C_{24}H_{33}D_4NO_2$
FW: 375.6
Chemical Purity: ≥98% (Docosahexaenoyl Ethanolamide)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Docosahexaenoyl ethanolamide-d_4 (DHEA-d_4) is intended for use as an internal standard for the quantification of DHEA by GC- or LC-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).

DHEA-d_4 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 ethanol, DMSO, and dimethyl formamide (DMF), purged with an inert gas can be used. The solubility of DHEA-d_4 in ethanol is approximately 5 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Description

Docosahexaenoic Acid (DHA) is an essential fatty acid and the most abundant ω-3 fatty acid in neural tissues, especially in the retina and brain. DHEA is the ethanolamine amide of DHA that has been detected in both brain and retina at concentrations similar to those for arachidonoyl ethanolamide (AEA).[1,2] A 9.5 fold increase of DHEA was observed in brain lipid extracts from piglets fed a diet supplemented with DHA compared to a control diet without DHA.[3] DHEA binds to the rat brain CB_1 receptor with a K_i value of 324 nM, which is approximately 10-fold higher than the K_i value for AEA.[4] DHEA inhibits shaker-related voltage-gated potassium channels in brain slightly better than AEA, with an IC_{50} value of 1.5 µM.[5]

References

1. Sugiura, T., Kondo, S., Sukagawa, A., *et al. Eur. J. Biochem.* **240**, 53-62 (1996).
2. Bisogno, T., Delton-Vandenbroucke, I., Milone, A., *et al. Arch. Biochem. Biophys.* **370(2)**, 300-307 (1999).
3. Berger, A., Crozier, G., Bisogno, T., *et al. Proc. Natl. Acad. Sci. USA* **98(11)**, 6402-6406 (2001).
4. Sheskin, T., Hanus, L., Slager, J., *et al. J. Med. Chem.* **40**, 659-667 (1997).
5. Poling, J.S., Rogawski, M.A., Salem, N., Jr., *et al. Neuropharmacology* **35(7)**, 983-991 (1996).

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