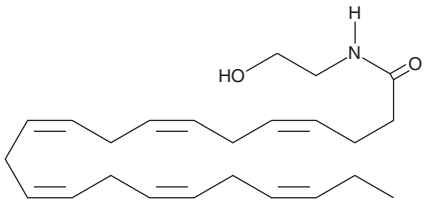
PRODUCT INFORMATION

Docosahexaenoyl Ethanolamide

Item No. 10007534

CAS Registry No.: 162758-94-3
Formal Name: N-(2-hydroxyethyl)-4Z,7Z,10Z,13Z,16Z,19Z-docosahexaenamide
Synonyms: DEA, DHEA, Synaptamide
MF: $C_{24}H_{37}NO_2$
FW: 371.6
Purity: ≥98%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥1 year



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

Laboratory Procedures

Docosahexaenoyl ethanolamide (DHEA) 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 DHEA in these solvents is approximately 20 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 DHEA is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of DHEA in PBS (pH 7.2) is approximately 0.15 mg/ml. We do not recommend storing the aqueous solution for more than one day.

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 of 324 nM, which is approximately 10-fold higher than the K_i for arachidonoyl ethanolamide (AEA).[4] DHEA inhibits shaker-related voltage-gated potassium channels in brain slightly better than AEA, with an IC_{50} 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).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM