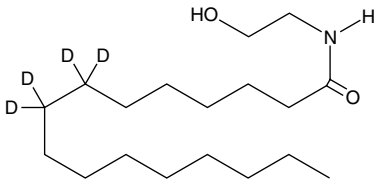
Product Information

Palmitoyl Ethanolamide-d_4

Item No. 10007824

CAS Registry No.: 1159908-45-8
Formal Name: N-(2-hydroxyethyl)-hexadecanamide-7,7,8,8-d_4
Synonyms: Palmidrol-d_4, PEA-7,7,8,8-d_4
MF: $C_{18}H_{33}D_4NO_2$
FW: 303.5
Chemical Purity: ≥98%
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol



Laboratory Procedures

Palmitoyl ethanolamide-d_4 (PEA-d_4) contains four deuterium atoms at the 7, 7', 8, and 8' positions. It is intended for use as an internal standard for the quantification of PEA by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that PEA-d_4 be stored as supplied at -20°C. It should be stable for at least one year.

PEA-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 DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of PEA-d_4 in these solvents is approximately 5 and 10 mg/ml, respectively.

PEA-d_4 is used as an internal standard for the quantification of PEA 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).

PEA is an endogenous cannabinoid found in brain, liver, and other mammalian tissues.[1] PEA has also been isolated from egg yolk, and found to have anti-anaphylactic and anti-inflammatory activity *in vitro*.[2] PEA is an endocannabinoid which has been shown to significantly elevate cyclic AMP in cells expressing peripheral cannabinoid (CB_2) receptors. However, its affinity for CB_2 receptors is relatively low, at about 10 µM. Central cannabinoid (CB_1) receptors have no appreciable affinity for PEA.[3]

References

1. Bachur, N.R., Masek, K., Melmon, K.L., *et al.* Fatty acid amides of ethanolamine in mammalian tissues. *J. Biol. Chem.* **240**, 1019-1024 (1965).
2. Ganley, O.H., Graessle, O.E., Robinson, H.J., *et al.* Anti-inflammatory activity of compounds obtained from egg yolk, peanut oil, and soybean lecithin. *J. Lab. Clin. Med.* **51**, 709-714 (1958).
3. Devane, W.A., Hanus, L., Breuer, A., *et al.* Isolation and structure of a brain constituent that binds to the cannabinoid receptor. *Science* **258**, 1946-1949 (1992).

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Cayman Chemical

Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com