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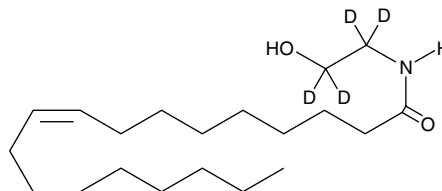
Product Information



Oleoyl Ethanolamide-d₄

Item No. 9000552

CAS Registry No.: 946524-36-3
Formal Name: N-(2-hydroxyethyl-1,1,2,2-d₄)-9Z-octadecenamide
Synonyms: OEA-d₄, Oleic Acid Ethanolamide-d₄
MF: C₂₀H₃₅D₄NO₂
FW: 329.6
Chemical Purity: ≥98% Oleoyl Ethanolamide
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol



Laboratory Procedures

Oleoyl ethanolamide-d₄ (OEA-d₄) contains four deuterium atoms at the hydroxyethyl 1, 1', 2, and 2' positions. It is intended for use as an internal standard for the quantification of OEA by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that OEA-d₄ be stored as supplied at -20°C. It should be stable for at least one year.

OEA-d₄ 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 OEA-d₄ in these solvents is approximately 100 mg/ml.

OEA-d₄ is used as an internal standard for the quantification of OEA 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).

OEA is an analog of the endocannabinoid arachidonoyl ethanolamide (AEA) found in brain tissue and in chocolate.¹ It is one of the long chain fatty acid ethanolamides that accumulates rapidly in infarcted tissue,² but its biosynthesis is reduced in the intestine of rats following food deprivation.³ OEA is an endogenous, potent agonist for PPAR α , exhibiting an EC₅₀ value of 120 nM in a transactivation assay.⁴ Systemic administration of OEA suppresses food intake and reduces weight gain in rats (10 mg/kg intraperitoneally) and PPAR α wild-type mice, but not in PPAR α knockout mice.^{3,4} These data indicate that OEA regulates food intake by a PPAR α -mediated mechanism.

References

1. di Tomaso, E., Beltramo, M., and Piomelli, D. Brain cannabinoids in chocolate. *Nature* **382**, 677-678 (1996).
2. Epps, D.E., Palmer, J.W., Schmid, H.H.O., *et al.* Inhibition of permeability-dependent Ca²⁺ release from mitochondria by N-acelethanolamines, a class of lipids synthesized in ischemic heart tissue. *J. Biol. Chem.* **257**, 1383-1392 (1982).
3. de Fonseca, F.R., Navarro, M., Gómez, R., *et al.* An anorexic lipid mediator regulated by feeding. *Nature* **414**, 209-212 (2001).
4. Fu, J., Gaetani, S., Oveisi, F., *et al.* Oleylethanolamide regulates feeding and body weight through activation of the nuclear receptor PPAR- α . *Nature* **425**, 90-93 (2003).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/9000552

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY. NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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