

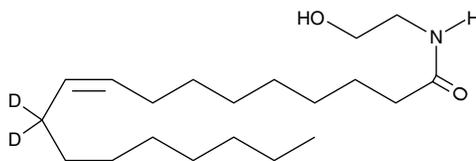
# Product Information



## Oleoyl Ethanolamide-d<sub>2</sub>

Item No. 10007823

**CAS Registry No.:** 1245477-09-1  
**Formal Name:** N-(2-hydroxyethyl)-9Z-octadecenamide-11,11-d<sub>2</sub>  
**Synonyms:** OEA-d<sub>2</sub>, Oleic Acid Ethanolamide-d<sub>2</sub>  
**MF:** C<sub>20</sub>H<sub>37</sub>D<sub>2</sub>NO<sub>2</sub>  
**FW:** 327.5  
**Chemical Purity:** ≥98%  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>2</sub>); ≤1% d<sub>0</sub>  
**Stability:** ≥1 year at -20°C  
**Supplied as:** A solution in ethanol



### Laboratory Procedures

Oleoyl ethanolamide-d<sub>2</sub> (OEA-d<sub>2</sub>) contains two deuterium atoms at the 11 position. 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-d<sub>2</sub> be stored as supplied at -20°C. It will be stable for at least one year.

OEA-d<sub>2</sub> 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-d<sub>2</sub> in these solvents is approximately 50 mg/ml.

OEA-d<sub>2</sub> 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 analogue of the endocannabinoid arachidonoyl ethanolamide (AEA) found in brain tissue and in chocolate.<sup>1</sup> It is one of the long chain fatty acid ethanolamides that accumulates rapidly in infarcted tissue,<sup>2</sup> but its biosynthesis is reduced in the intestine of rats following food deprivation.<sup>3</sup> OEA is an endogenous, potent agonist for peroxisome proliferator-activated receptor  $\alpha$  (PPAR $\alpha$ ), exhibiting an EC<sub>50</sub> value of 120 nM in a transactivation assay.<sup>4</sup> Systemic administration of OEA suppresses food intake and reduces weight gain in rats (10 mg/kg intraperitoneally) and PPAR $\alpha$  wild-type mice, but not in PPAR $\alpha$  knockout mice.<sup>3,4</sup> These data indicate that OEA regulates food intake by a PPAR $\alpha$ -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 Ca<sup>2+</sup> 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- $\alpha$ . *Nature* **425**, 90-93 (2003).

### Related Products

For a list of related products please visit: [www.caymanchem.com/catalog/10007823](http://www.caymanchem.com/catalog/10007823)

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

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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](mailto:custserv@caymanchem.com)

#### Web

[www.caymanchem.com](http://www.caymanchem.com)