

Certificate of Analysis

Product Name: Palmitoylethanolamide

Catalog No.: 0879

Batch No.: 3

CAS Number: 544-31-0

EC Number: 208-867-9

IUPAC Name: *N*-(2-Hydroxyethyl)hexadecanamide

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₈H₃₇NO₂·¼H₂O

Batch Molecular Weight: 304

Physical Appearance: White solid

Solubility: DMSO to 20 mM
ethanol to 25 mM

Storage: Store at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.4 (Dichloromethane:Methanol:Ammonia soln. [18:1:0.001])

Melting Point: Between 100 - 101°C

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	71.12	12.43	4.61
Found	70.91	12.46	4.68

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

Endogenous lipid that acts as a selective GPR55 agonist (EC₅₀ values are 4, 19 800 and > 30 000 nM at GPR55, CB₂ and CB₁ receptors respectively). Substrate for fatty acid amide hydrolase (FAAH) and PEA-preferring acid amidase (PAA) and exhibits antinociceptive and anticonvulsant in vivo. Directly activates PPARα (EC₅₀ = 3 μM) producing robust anti-inflammatory actions.

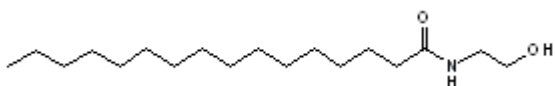
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Batch Molecular Structure:



Storage: Store at RT

CAUTION - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

Solubility & Usage Info:

DMSO to 20 mM

ethanol to 25 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Lambert et al (2001) Anticonvulsant activity of *N*-palmitoylethanolamide, a putative endocannabinoid, in mice. *Epilepsia* **42** 321. PMID: 11442148.

Lambert et al (2002) The palmitoylethanolamide family: a new class of anti-inflammatory agents? *Curr.Med.Chem.* **9** 663. PMID: 11945130.

Lo Verme et al (2005) The search for the palmitoylethanolamide receptor. *Life Sci.* **77** 1685. PMID: 15963531.

Re et al (2005) Palmitoylethanolamide, endocannabinoids and related cannabimimetic compounds in protection against tissue inflammation and pain: potential use in companion animals. *Vet.J.* **173** 21. PMID: 16324856.

Ryberg et al (2007) The orphan receptor GPR55 is a novel cannabinoid receptor. *Br.J.Pharmacol.* **152** 1092. PMID: 17876302.

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