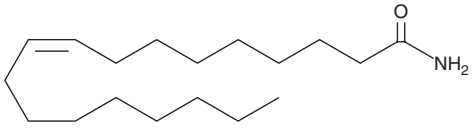
PRODUCT INFORMATION

Oleamide

Item No. 90375

CAS Registry No.:	301-02-0
Formal Name:	9Z-octadecenamide
Synonym:	*cis*-9-Octadecenamide
MF:	$C_{18}H_{35}NO$
FW:	281.5
Purity:	≥98%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥1 year



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

Laboratory Procedures

Oleamide is supplied as a crystalline solid. A stock solution may be made by dissolving the oleamide in the solvent of choice. Oleamide is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of oleamide in these solvents is approximately 22, 20, and 14 mg/ml, respectively.

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. Organic solvent-free aqueous solutions of oleamide can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of oleamide in PBS, pH 7.2, is approximately 0.05 mg/ml. Store aqueous solutions of oleamide on ice and use within 12 hours of preparation. Although the aqueous solutions of oleamide may be stable for more than 12 hours, we strongly recommend using a fresh preparation each day.

Description

Oleamide is an amide of oleic acid (Item No. 90260) and an agonist of cannabinoid 1 (CB_1) receptors (K_i = 8.13 µM in a radioligand binding assay).[1] It is selective for CB_1 over CB_2 receptors, where it inhibits binding of the CB receptor full agonist CP 55,940 by only 42.5% in HEK-293T cells expressing human CB_2 receptors when used at a concentration of 100 µM. Oleamide (10 µM) inhibits cAMP accumulation induced by forskolin (Item No. 11018) in N1E 115 mouse neuroblastoma cells, an effect that is reversed by the CB_1 antagonist SR141716A. Oleamide was first identified in the cerebrospinal fluid of sleep-deprived cats, and it has also been detected in the cerebrospinal fluid of rats and humans.[2] In rats, it induces physiological sleep when administered at doses ranging from 5 to 50 mg and increases food intake when administered into the nucleus accumbens shell, and in group-housed and socially isolated mice, it has anxiolytic-like effects.[2-4] Oleamide also induces transactivation of PPARα, PPARβ, and PPARγ and inhibits activity of the sarco/endoplasmic reticulum Ca^{2+}-ATPase (SERCA) at concentrations in the low micromolar range.[5]

References

1. Leggett, J.D., Aspley, S., Beckett, S.R., *et al. Br. J. Pharmacol.* **141(2)**, 253-262 (2004).
2. Cravatt, B.F., Prospero-Garcia, O., Siuzdak, G., *et al. Science* **268(5216)**, 1506-1509 (1995).
3. Soria-Gómez, E., Márquez-Diosdado, M.I., Montes-Rodríguez, C.J., *et al. Int. J. Neuropsychopharmacol.* **13(9)**, 1247-1254 (2010).
4. Wei, X.Y., Yang, J.Y., Dong, Y.X., *et al. Prog. Neuropsychopharmacol. Biol. Psychiatry* **31(6)**, 1189-1195 (2007).
5. Yamamaoto, S., Takehara, M., and Ushimaru, M. *Biochim. Biophys. Acta* **1861(1 Pt A)**, 3399-3405 (2016).

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