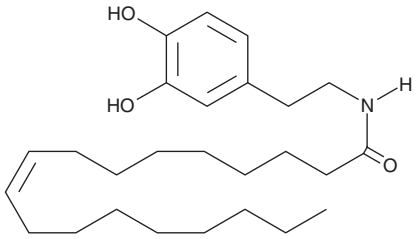
PRODUCT INFORMATION

N-Oleoyl Dopamine

Item No. 10115

CAS Registry No.:	105955-11-1
Formal Name:	N-[2-(3,4-dihydroxyphenyl)ethyl]-9Z-octadecenamide
Synonym:	ODA
MF:	$C_{26}H_{43}NO_3$
FW:	417.6
Purity:	≥98%
UV/Vis.:	λ_{max}: 283 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

N-Oleoyl dopamine (ODA) is supplied as a crystalline solid. A stock solution may be made by dissolving the ODA in the solvent of choice, which should be purged with an inert gas. ODA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of ODA in these solvents is approximately 50, 20, and 30 mg/ml, respectively.

ODA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, ODA should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. ODA has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

ODA is a selective, endogenous vanilloid receptor 1 (VR1) agonist isolated from bovine brain.[1] Structurally, it is the amide of oleic acid and dopamine and is therefore a "hybrid" analog which incorporates components of both the anandamide-like and dopamine neurotransmitter pathways. ODA binds to the human recombinant VR1 with a K_i of 36 nM making it equipotent to capsaicin and slightly more potent than N-arachidonoyl dopamine in this assay.[1] It causes hyperalgesia and nocifensive behavior that is blocked by the VR1 antagonist iodo-resiniferatoxin. ODA is selective for VR1 based on observations that it has weak affinity for the rat CB_1 receptor (K_i of 1.6 µM) and is a very weak inhibitor of FAAH. ODA is also a potent inhibitor of 5-lipoxygenase from rat basophilic leukemia-1 (RBL-1) cells, with a IC_{50} of 7.5 nM.[2,3]

References

1. Chu, C.J., Huang, S.M., De Petrocellis, L., *et al.* N-oleoyldopamine, a novel endogenous capsaicin-like lipid that produces hyperalgesia. *J. Biol. Chem.* **278(16)**, 13633-13639 (2003).
2. Tseng, C.F., Iwakami, S., Mikajiri, A., *et al.* Inhibition of *in vitro* prostaglandin and leukotriene biosyntheses by cinnamoyl-*β*-phenethylamine and *N*-acyldopamine derivatives. *Chem. Pharm. Bull. (Tokyo)* **40(2)**, 396-400 (1992).
3. Iwakami, S., Shibuya, M., Tseng, C.F., *et al.* Inhibition of arachidonate 5-lipoxygenase by phenolic compounds. *Chem. Pharm. Bull. (Tokyo)* **34(9)**, 3960-3963 (1986).

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