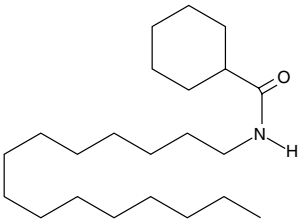
Product Information

N-Cyclohexanecarbonylpentadecylamine

Item No. 10007739

CAS Registry No.: 702638-84-4
Formal Name: N-pentadecyl-cyclohexanecarboxamide
MF: $C_{22}H_{43}NO$
FW: 337.6
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that N-cyclohexanecarbonylpentadecylamine be stored as supplied at -20°C. It should be stable for at least two years.

N-Cyclohexanecarbonylpentadecylamine is supplied as a crystalline solid. A stock solution may be made by dissolving the N-cyclohexanecarbonylpentadecylamine in an organic solvent purged with an inert gas. N-cyclohexanecarbonylpentadecylamine has a solubility in ethanol of approximately 2 mg/ml.

If aqueous stock solutions are required for biological experiments, they can best be prepared by diluting the organic solvent into aqueous buffers or isotonic saline. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Numerous analogs of fatty acyl ethanolamides potentiate the intrinsic biological activity of endocannabinoids.[1] This potentiation is ascribed either to inhibition of AEA reuptake into neurons, or inhibition of fatty acid amide hydrolase (FAAH) within the neurons.[2] However, Ueda, *et al.,* have recently cloned another amidase, the acidic palmitoyl ethanolamidase (PEAase), that promotes the hydrolysis of PEA.[3] N-cyclohexanecarbonylpentadecylamine is a selective inhibitor of acidic PEAase, inhibiting the enzyme with an IC_{50} of 4.5 µM, while failing to inhibit FAAH even at 100 µM.[4]

References

1. Khanolkar, A.D. and Makriyannis, A. Structure-activity relationships of anandamide, an endogenous cannabinoid ligand. *Life Sci.* **65**, 607-616 (1999).
2. Deutsch, D.G., Glaser, S.T., Howell, J.M., *et al.* The cellular uptake of anandamide is coupled to its breakdown by fatty-acid amide hydrolase. *J. Biol. Chem.* **276(10)**, 6967-6973 (2001).
3. Ueda, N., Yamanaka, K., and Yamamoto, S. Purification and characterization of an acid amidase selective for N-palmitoylethanolamine, a putative endogenous anti-inflammatory substance. *J. Biol. Chem.* **276(38)**, 35552-35557 (2001).
4. Tsuboi, K., Hilligsmann, C., Vandevoorde, S., *et al.* N-cyclohexanecarbonylpentadecylamine: A selective inhibitor of the acid amidase hydrolysing N-acylethanolamines, as a tool to distinguish acid amidase from fatty acid amide hydrolase. *Biochem J.* **379**, 99-106 (2004).

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