

## Product Data Sheet

Product Name: N-Benzylpalmitamide

Cat. No.: GC13063

### Chemical Properties

Cas. No. 74058-71-2

Chemical Name N-(phenylmethyl)-hexadecanamide

SMILES O=C(CCCCCCCCCCCCCCCC)NCC1=CC=CC=C1

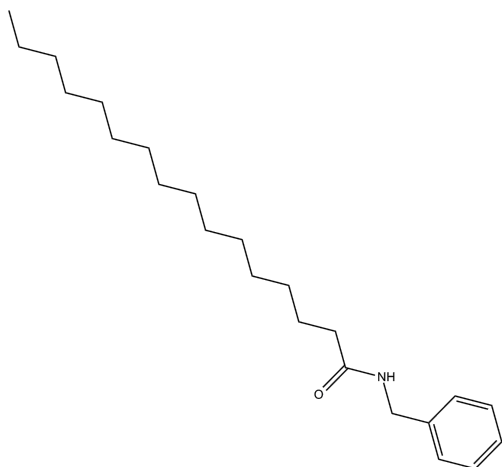
Formula  $C_{23}H_{39}NO$  M.Wt 345.6

Solubility  $\leq 2\text{mg/ml}$  in organic solvent ethanol Storage Store at  $-20^{\circ}\text{C}$

General tips For obtaining a higher solubility, please warm the tube at  $37^{\circ}\text{C}$  and shake it in the ultrasonic bath for a while. Stock solution can be stored below  $-20^{\circ}\text{C}$  for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



### Background

N-Benzylpalmitamide is an inhibitor of fatty acid amide hydrolase (FAAH) [1].

The fatty acid amide hydrolase (FAAH) is a mammalian integral membrane enzyme responsible for the hydrolysis of anandamide, an endocannabinoid. The FAAH is involved in degrading the fatty acid amide family of endogenous signaling lipids, including the endogenous cannabinoid anandamide and

**Caution: Product has not been fully validated for medical applications. For research use only.**

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the sleep-inducing substance oleamide. FAAH belongs to is a member of amidase signature (AS) family. The FAAH integrates into cell membranes and terminates fatty acid amide signaling in vivo [2]. Genetic mutations in FAAH may constitute important risk factors for problem drug use and support a potential link between functional abnormalities in the endogenous cannabinoid system and drug abuse and dependence [3].

N-Benzylpalmitamide was a long-chain fatty acid amide isolated from the maca (*L. meyenii*) plant and was structurally related to cannabinoids. N-Benzylpalmitamide was a moderate inhibitor of FAAH and inhibited 44% activity of FAAH at 500  $\mu$ M [1].

### References:

- [1] Wu H, Kelley C J, Pino-Figueroa A, et al. Macamides and their synthetic analogs: evaluation of in vitro FAAH inhibition[J]. Bioorganic & medicinal chemistry, 2013, 21(17): 5188-5197.
- [2] Deutsch D G, Ueda N, Yamamoto S. The fatty acid amide hydrolase (FAAH)[J]. Prostaglandins, Leukotrienes and Essential Fatty Acids (PLEFA), 2002, 66(2): 201-210.
- [3] Sipe J C, Chiang K, Gerber A L, et al. A missense mutation in human fatty acid amide hydrolase associated with problem drug use[J]. Proceedings of the National Academy of Sciences, 2002, 99(12): 8394-8399.

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