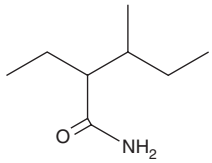
PRODUCT INFORMATION

Valnoctamide

Item No. 18456

CAS Registry No.: 4171-13-5
Formal Name: 2-ethyl-3-methyl-pentanamide
Synonyms: NSC 32363, NSC 34092, Valmethamide, Valoctamidum
MF: $C_8H_{17}NO$
FW: 143.2
Purity: ≥95%
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

Valnoctamide is supplied as a crystalline solid. A stock solution may be made by dissolving the valnoctamide in the solvent of choice, which should be purged with an inert gas. Valnoctamide is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of valnoctamide in these solvents is approximately 25, 30, and 16 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 valnoctamide can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of valnoctamide in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Valnoctamide is an isomer of the valproic acid amide, valpromide. It has been marketed as an anxiolytic and sedative compound and suppresses neuropathic pain.[1,2] Unlike valpromide, valnoctamide is not metabolized to its acid form, valnoctic acid, *in vivo* and has no teratogenicity.[1] It abolishes the activity of *myo*-inositol-1-phosphate synthase in human brain crude homogenates (K_i = 0.18 mM).[3] Valnoctamide suppresses electrographic seizures in animal models of status epilepticus, suggesting potential applications in managing epilepsy.[4]

References

1. Rogawski, M.A. Diverse mechanisms of antiepileptic drugs in the development pipeline. *Epilepsy Res.* **69(3)**, 273-294 (2006).
2. Winkler, I., Blotnik, S., Shimshoni, J., *et al*. Efficacy of antiepileptic isomers of valproic acid and valpromide in a rat model of neuropathic pain. *Br. J. Pharmacol.* **146**, 198-208 (2005).
3. Shaltiel, G., Mark, S., Kofman, O., *et al*. Effect of valproate derivatives on human brain *myo*-inositol-1-phosphate (MIP) synthase activity and amphetamine-induced rearing. *Pharmacol. Rep.* **59(4)**, 402-407 (2007).
4. Spampanato, J. and Dudek, F.E. Valnoctamide enhances phasic inhibition: A potential target mechanism for the treatment of benzodiazepine-refractory status epilepticus. *Epilepsia* **55(9)**, e94-e98 (2014).

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