

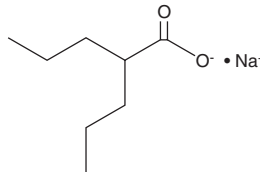
# PRODUCT INFORMATION



## Valproic Acid (sodium salt)

Item No. 13033

**CAS Registry No.:** 1069-66-5  
**Formal Name:** 2-propyl-pentanoic acid, monosodium salt  
**Synonyms:** 2-Propylvaleric Acid, Valproate, VPA  
**MF:** C<sub>8</sub>H<sub>15</sub>O<sub>2</sub> • Na  
**FW:** 166.2  
**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

Valproic acid (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the valproic acid (sodium salt) in the solvent of choice, which should be purged with an inert gas. Valproic acid (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of valproic acid (sodium salt) in ethanol is approximately 30 mg/ml and approximately 5 mg/ml in DMSO and DMF.

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 valproic acid (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of valproic acid (sodium salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Valproic acid is an analog of the natural fatty acid valeric acid that inhibits class I histone deacetylases (HDACs) with an IC<sub>50</sub> value of approximately 2 mM.<sup>1</sup> It decreases the number of axon branches in sensory neurons isolated from newborn rat dorsal root ganglia, an effect that is reversed by inositol-1,4,5-trisphosphate (1,4,5-IP<sub>3</sub>).<sup>2</sup> *In vivo*, valproic acid inhibits amyloid-β deposition and neuritic plaque formation and decreases escape latency in Morris water maze, indicating improved memory performance, in the APP23 transgenic mouse model of Alzheimer's disease.<sup>3</sup> Valproic acid has anticonvulsant activity in the pentylenetetrazol seizure threshold test in mice (ED<sub>50</sub> = 0.71 mmol/kg) but induces neurotoxicity when administered at doses greater than or equal to 1.2 mmol/kg.<sup>4</sup> Formulations containing valproic acid have been used in the treatment of bipolar disorder and various seizure disorders.

### References

1. Göttlicher, M., Minucci, S., Zhu, P., *et al.* *EMBO J.* **20(24)**, 6969-6978 (2001).
2. Williams, R.S.B., Cheng, L., Mudge, A.W., *et al.* *Nature* **417**, 292-295 (2002).
3. Qing, H., He, G., Ly, P.T.T., *et al.* *J. Exp. Med.* **205(12)**, 2781-2789 (2008).
4. Elmazar, M.M., Hauck, R.S., and Nau, H. *J. Pharm. Sci.* **82(12)**, 1255-1258 (1993).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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#### 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