

# Valproic acid . sodium

## HDAC inhibitor

Valproic acid . sodium is a versatile compound widely recognized for its therapeutic applications in treating epilepsy and bipolar disorder. Beyond its conventional uses, Valproic acid . sodium exhibits significant potential as a histone deacetylase (HDAC) inhibitor. HDACs are enzymes that remove acetyl groups from histone proteins, leading to chromatin condensation and transcriptional repression.

Valproic acid . sodium targets multiple HDAC classes, particularly Class I (HDAC1-3, 8) and Class IIa (HDAC4-5, 7, 9), thereby promoting hyperacetylation of histones H3 and H4. This hyperacetylation results in a more open chromatin structure, facilitating gene expression and potentially inducing cellular differentiation and growth arrest in transformed cells. These properties make Valproic acid . sodium a promising candidate for repurposing as a chemotherapeutic agent in cancer treatment.

Key features and applications include:

- **Anticonvulsant Properties:** Valproic acid . sodium is primarily known for its effectiveness in treating various types of seizures, including generalized, partial, and absence seizures. It increases the levels of gamma-aminobutyric acid (GABA) in the brain, which helps to calm neuronal activity and prevent seizures.
- **Mood Stabilization:** It is widely used in managing bipolar disorder, helping to stabilize mood swings and prevent manic episodes.
- **HDAC Inhibition:** Valproic acid . sodium acts as a histone deacetylase (HDAC) inhibitor, promoting gene expression by altering chromatin structure. Accordingly, it is being explored as a potential chemotherapeutic agent.

Relevant disease states include:

- **Epilepsy:** Effective in managing various forms of epilepsy, including generalized and partial seizures.
- **Bipolar Disorder:** Used to stabilize mood and prevent manic episodes.

- **Cancer:** Investigated for its potential in cancer therapy due to its ability to induce cellular differentiation and growth arrest.

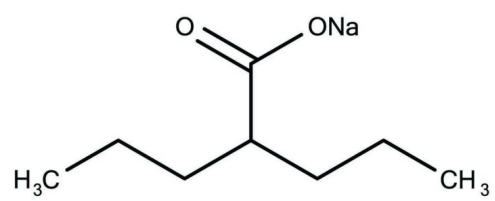
Ordering Information

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|                 |    |
|-----------------|----|
| ENZ-CHM367-0005 | 5g |
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Manuals, SDS & CofA

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## Handling & Storage

|                    |  |
|--------------------|--|
| Use/Stability      | As indicated on product label or CoA when stored as recommended. |
| Short Term Storage | -20°C  |
| Long Term Storage  | -20°C  |
| Shipping           | Ambient Temperature  |

## Regulatory Status

RUO - Research Use Only

## Product Details

|                  |   |
|------------------|---|
| Alternative Name | 2-Propylpentanoic acid . Na, Sodium Valproate |
| Appearance       | White solid.                                  |
| CAS              | 1069-66-5                                     |
| Couple Target    | HDAC  |
| Couple Type      | Inhibitor                                     |
| Formula          | $C_8H_{15}NaO_2$                              |
| Identity         | Determined by NMR.                            |
| MW               | 166.2   |
| Purity           | ≥98% (TLC)                                    |
| Solubility       | Soluble in water (up to 50 mg/mL).            |



ENZO LIFE SCIENCES,  
INC.  
Phone: 800.942.0430  
[info-  
usa@enzolifesciences.com](mailto:info-usa@enzolifesciences.com)

European Sales Office  
ENZO LIFE SCIENCES  
(ELS) AG  
Phone: +41 61 926 8989  
[info-  
eu@enzolifesciences.com](mailto:info-eu@enzolifesciences.com)

Belgium, The Netherlands  
& Luxembourg  
Phone: +32 3 466 0420  
[info-  
be@enzolifesciences.com](mailto:info-be@enzolifesciences.com)

France  
Phone: +33 472 440 655  
[info-  
fr@enzolifesciences.com](mailto:info-fr@enzolifesciences.com)

Germany  
Phone: +49 7621 5500 526  
[info-  
de@enzolifesciences.com](mailto:info-de@enzolifesciences.com)

UK & Ireland  
Phone (UK customers):  
0845 601 1488  
Phone: +44 1392 825900  
[info-  
uk@enzolifesciences.com](mailto:info-uk@enzolifesciences.com)