



TrailBio[®] Valproic Acid (Sodium Salt) User Instructions

Product Configurations

Catalog Number	Size	Quantity
TB26985	5 g	1 vial

Product Description

Category	Specification
Product	Valproic Acid (Sodium Salt)
Synonyms	Sodium 2-propylpentanoate, Valproate sodium, Sodium valproate
CAS Number	1069-66-5
MDL Number	MFCD00078604
Formula	C ₈ H ₁₅ NaO ₂
Molecular Weight	166.19 g/mol
Storage (Solid)	4 °C for up to 2 years
Storage (Solution)	-80 °C for up to 6 months or -20 °C for up to 1 month, store sealed away from moisture
Shipping	Ambient temperature
Chemical Structure	The chemical structure shows a central carbon atom bonded to a carboxylate group (C(=O)O⁻) and a sodium ion (Na⁺). This central carbon is also bonded to two ethyl groups (CH₂CH₃), one on the left and one on the right. The structure is drawn in a skeletal format with explicit labels for the carboxylate oxygen, the sodium ion, and the terminal methyl groups.

Quality & Analytical Specifications

Test Parameter	Specification
Solid Appearance (Color)	White to off-white
Purity	≥98%

Solubility

Solvent	Solubility	Notes
H ₂ O	125 mg/mL (752.15 mM)	May require sonication
DMSO	10 mg/ml (60.17 mM)	May require sonication

Solution Preparation Guide

Amount	1 mM	5 mM	10 mM
1 mg	6.017 ml	1.203 ml	0.602 ml
5 mg	30.086 ml	6.017 ml	3.009 ml
10 mg	60.172 ml	12.034 ml	6.017 ml

Biological Description

Valproic acid (sodium salt) is a small-molecule epigenetic modulator that primarily inhibits histone deacetylase (HDAC) activity. This inhibition increases histone acetylation and can alter the expression of genes associated with cell proliferation, survival, and differentiation. Valproic acid can also affect GABA levels and associated neurotransmission. It can be used to study epigenetic regulation, neuronal development, stem cell differentiation, autophagy, and apoptosis.

Associated Pathways and Applications

Category	Description
Associated Pathways	HDAC-mediated chromatin regulation; histone acetylation; Wnt/β-catenin; Notch signaling; autophagy; apoptosis
Applications	Chromatin and gene-regulation studies; cellular reprogramming; neural differentiation models; stem and progenitor cell culture; organoid model development

Activity & Targets

Target	IC ₅₀
HDAC1	400 μM
HDACs	0.5 - 2 mM

Notes

- When using DMSO-based stock solutions, maintain a final DMSO concentration of <0.5% in cell culture applications to minimize potential cellular toxicity, unless a higher concentration has been validated for the specific cell type.
 - Avoid repeated freeze–thaw cycles. Prepare single-use aliquots when possible.
 - The compound may collect on the vial cap or neck during shipping. Before opening the vial, centrifuge it briefly to bring the contents to the bottom.
 - A Certificate of Analysis (CoA) is available upon request. Please contact support@trailbio.com.
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