Print Date: Apr 22nd 2020

Certificate of Analysis

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Product Name: **Valproic acid, sodium salt** **Catalog No.: 2815** **Batch No.: 1**

CAS Number: 1069-66-5 EC Number: 213-961-8

IUPAC Name: Sodium 2-propylpentanoate

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_8H_{15}NaO_2.0.2H_2O$

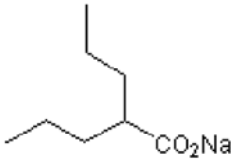
Batch Molecular Weight: 169.79

Physical Appearance: White crystalline solid

Solubility: water to 100 mM
DMSO to 50 mM

Storage: Desiccate at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

^{1}H NMR: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	56.59	9.14	
Found	56.88	9.21	

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Product Information

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IUPAC Name: Sodium 2-propylpentanoate

Description:

Histone deacetylase inhibitor (IC_{50} = 400 µM) that exhibits anticancer, anti-inflammatory and neuroprotective effects. Displays anticonvulsive activity via an increase in GABA levels and decreases Aβ production in animal models of Alzheimer's disease. Also attenuates NMDA-mediated excitation, blocks voltage-gated Na^+ channels and modulates firing of neurons. Enables induction of pluripotent stem cells from somatic cells by Oct4 and Sox2. Can induce autophagy by inhibiting inositol synthesis. Identified by chemoinformatics as targeting human host proteins that interact with SARS-CoV-2.

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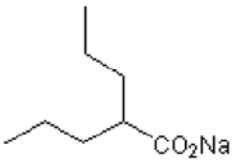

Storage: Desiccate at RT

Solubility & Usage Info:

water to 100 mM
DMSO to 50 mM

CAUTION - This product is extremely hygroscopic and we recommend that it is desiccated upon arrival.

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Gordon *et al* (2020) A SARS-CoV-2-human protein-protein interaction map reveals drug targets and potential drug-repurposing. BioRxiv - Paper not yet peer reviewed.

Huangfu *et al* (2008) Induction of pluripotent stem cells from primary human fibroblasts with only Oct4 and Sox2. Nat.Biotechnol. ***26*** 1269. PMID: 18849973.

Qing *et al* (2008) Valproic acid inhibits Aβ production, neuritic plaque formation, and behavioural defects in Alzheimer's disease mouse models. J.Exp.Med. ***205*** 2781. PMID: 18955571.

Kim *et al* (2007) Histone deacetylase inhibitors exhibit anti-inflammatory and neuroprotective effects in a rat permanent ischemic model of stroke: multiple mechanisms of action. J.Pharmacol.Exp.Ther. ***321*** 892. PMID: 17371805.

Kostrouchova *et al* (2007) Valproic acid, a molecular lead to multiple regulatory pathways. Folia Biologica ***53*** 37. PMID: 17448293.

Phiel *et al* (2001) Histone deacetylase is a direct target of valproic acid, a potent anticonvulsant, mood stabilizer, and teratogen. J.Biol.Chem. ***276*** 36734. PMID: 11473107.

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