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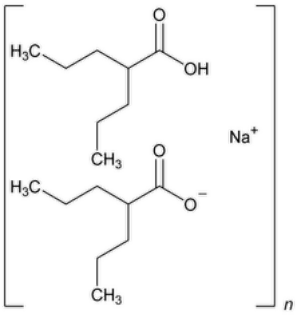
Divalproex Sodium



$(C_{16}H_{31}NaO_4)_n$ 310.41 (repeating unit molecular weight)
Pentanoic acid, 2-propyl-, sodium salt (2:1);
Sodium hydrogen bis(2-propylvalerate) oligomer.

DEFINITION
Divalproex Sodium contains NLT 98.0% and NMT 102.0% of available valproic acid ($C_8H_{16}O_2$).

IDENTIFICATION
Change to read:

• **A.** ▲Spectroscopic Identification Tests ⟨197⟩, *Infrared Spectroscopy*: **197K**▲ (CN 1-May-2020)

• **B.** Identification Tests—General ⟨191⟩, *Chemical Identification Tests*,*Sodium*
Sample: 100 mg of Divalproex Sodium
Analysis: Ignite the *Sample,* and dissolve the residue in 2 mL of water. Proceed as indicated in the chapter, starting with "Add 2 mL".
Acceptance criteria: Meets the requirements

• **C.** The retention time of the major peak of the *Sample solution* corresponds to that of the *Standard solution*, as obtained in the *Assay*.

ASSAY

• **Procedure**
Buffer: 3.5 g of monobasic sodium phosphate in 900 mL of water. Adjust with phosphoric acid to a pH of 3.5. Dilute with water to 1 L.
Mobile phase: Acetonitrile and *Buffer* (50:50)
Impurity stock solution: 0.5 mg/mL of USP Valproic Acid Related Compound A RS in acetonitrile
Standard stock solution: 5.0 mg/mL of USP Valproic Acid RS in *Mobile phase*
System suitability solution: 0.5 mg/mL of valproic acid from the *Standard stock solution*, and 5 µg/mL of valproic acid related compound A from the *Impurity stock solution* in *Mobile phase*
Standard solution: 0.5 mg/mL of USP Valproic Acid RS from the *Standard stock solution* in *Mobile phase*
Sample solution: 0.5 mg/mL of Divalproex Sodium in *Mobile phase*
Chromatographic system
(See *Chromatography ⟨621⟩, System Suitability*.)
Mode: LC
Detector: UV 215 nm
Column: 4.6-mm × 15-cm; 5-µm packing L7
Flow rate: 1 mL/min
Injection volume: 20 µL
Run time: NLT 1.8 times the retention time of valproic acid
System suitability
Sample: *System suitability solution*
[Note—The relative retention times for valproic acid related compound A and valproic acid are 0.69 and 1.0, respectively.]
Suitability requirements
Resolution: NLT 5.0 between valproic acid related compound A and valproic acid
Tailing factor: NMT 1.5 for valproic acid
Relative standard deviation: NMT 2.0% for valproic acid

Analysis

Samples: *Standard solution* and *Sample solution*

Calculate the percentage of available valproic acid ($C_8H_{16}O_2$) in the portion of Divalproex Sodium taken:

$$\text{Result} = (r_U/r_S) \times (C_S/C_U) \times (M_{r1}/M_{r2}) \times (1/M) \times 100$$

r_U = peak area from the *Sample solution*

r_S = peak area from the *Standard solution*

C_S = concentration of USP Valproic Acid RS in the *Standard solution* (mg/mL)

C_U = concentration of the *Sample solution* (mg/mL)

M_{r1} = molecular weight for divalproex sodium repeating unit, 310.41

M_{r2} = molecular weight for valproic acid, 144.21

M = number of moles of valproic acid per mole of divalproex sodium repeating unit, 2

Acceptance criteria: 98.0%–102.0%

SPECIFIC TESTS

• **Water Determination ⟨921⟩, *Method I*:** NMT 1.0%

ADDITIONAL REQUIREMENTS

• **Packaging and Storage:** Preserve in tight containers. Store at room temperature.

• **USP Reference Standards ⟨11⟩**

USP Divalproex Sodium RS

USP Valproic Acid RS

USP Valproic Acid Related Compound A RS

Diallyl acetic acid;
Also known as 2-Allylpent-4-enoic acid.
$C_8H_{12}O_2$ 140.18

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
DIVALPROEX SODIUM	Documentary Standards Support	SM42020 Small Molecules 4

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
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