OLPRUVA- sodium phenylbutyrate
Acer Therapeutics Inc.

HIGHLIGHTS OF PRESCRIBING INFORMATION
These highlights do not include all the information needed to use OLPRUVA™ safely and effectively. See full prescribing information for OLPRUVA.
OLPRUVA (sodium phenylbutyrate) for oral suspension
Initial U.S. Approval: 1996

INDICATIONS AND USAGE

- OLPRUVA is a nitrogen-binding agent indicated as adjunctive therapy to standard of care, which includes dietary management, for the chronic management of adult and pediatric patients weighing 20 kg or greater and with a body surface area (BSA) of 1.2 m^2 or greater, with urea cycle disorders (UCDs) involving deficiencies of carbamylphosphate synthetase (CPS), ornithine transcarbamylase (OTC), or argininosuccinic acid synthetase (AS). (1)

Limitations of Use:
OLPRUVA is not indicated for the treatment of acute hyperammonemia. (1)

DOSAGE AND ADMINISTRATION

- OLPRUVA treatment should be supervised by a healthcare provider experienced in the treatment of UCDs. For preparation and administration, see full prescribing information. (2.1, 2.4)
- The recommended dosage is 9.9 -13 g/m^2/day. (2.1)
- Monitor plasma ammonia levels to determine the need for dosage adjustment. (2.2)
- Monitor patients for potential neurotoxicity. (2.2)
- For patients with hepatic impairment, start at the lower end of the recommended dosing range. (2.3)

DOSAGE FORMS AND STRENGTHS

- For oral suspension: 2 g, 3 g, 4 g, 5 g, 6 g, and 6.67 g of sodium phenylbutyrate as pellets in packets for reconstitution. (3)

CONTRAINDICATIONS

None. (4)

WARNINGS AND PRECAUTIONS

- Neurotoxicity of Phenylacetate: Increased exposure to phenylacetate, the major metabolite of OLPRUVA, may be associated with neurotoxicity in patients with UCDs. Consider reducing the dose if neurotoxicity symptoms are present. (5.1)
- Hypokalemia: Renal excretion of phenylacetylglutamine may induce urinary loss of potassium. Monitor serum potassium during therapy and initiate appropriate treatment when necessary. (5.2)
- Conditions Associated with Edema: Calculate the total amount of sodium patients will be exposed to based on their body surface area. If a patient develops new-onset edema or worsening edema while on treatment, discontinue administration of OLPRUVA and initiate appropriate therapy. (5.3)

ADVERSE REACTIONS

Most common adverse reactions (incidence ≥ 3%) are menstrual dysfunction, decreased appetite, body odor and bad taste or taste aversion. (6)
To report SUSPECTED ADVERSE REACTIONS, contact Acer Therapeutics Inc. at 1-844-600-2237 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

DRUG INTERACTIONS

- Valproic Acid, Haloperidol, or Corticosteroids: May increase plasma ammonia levels; monitor ammonia levels closely. (7.1)
- Probenecid: May inhibit renal excretion of metabolites of OLPRUVA including phenylacetate and phenylacetylglutamine; monitor for potential neurotoxicity. (7.2)

See 17 for PATIENT COUNSELING INFORMATION and FDA-approved patient labeling.
Revised: 12/2022

FULL PRESCRIBING INFORMATION: CONTENTS*

* Sections or subsections omitted from the full prescribing information are not listed.

FULL PRESCRIBING INFORMATION

1 INDICATIONS AND USAGE

OLPRUVA is indicated as adjunctive therapy to standard of care, which includes dietary management, for the chronic management of adult and pediatric patients weighing 20 kg or greater and with a body surface area (BSA) of 1.2 m^2 or greater, with urea cycle disorders (UCDs) involving deficiencies of carbamylphosphate synthetase (CPS), ornithine transcarbamylase (OTC), or argininosuccinic acid synthetase (AS).

Limitations of Use

Episodes of acute hyperammonemia may occur in patients while on OLPRUVA. OLPRUVA is not indicated for the treatment of acute hyperammonemia, which can be a life-threatening medical emergency that requires rapid acting interventions to reduce plasma ammonia levels.

2 DOSAGE AND ADMINISTRATION

2.1 Recommended Dosage

OLPRUVA treatment should be supervised by a healthcare provider experienced in the treatment of urea cycle disorders.

The recommended dosage of OLPRUVA for patients with urea cycle disorders is 9.9 –13 g/m^2/day orally. Divide the calculated total daily dose into three to six doses. Administer as three to six divided doses and take with food.

Round each individual dose of OLPRUVA to the nearest available dosage strength. The maximum dosage is 20 grams per day. Combine OLPRUVA with dietary protein restriction and, in some cases, amino acid supplementation (e.g., essential amino acids, arginine, citrulline, and protein-free calorie supplements).

If a dose is missed, take the missed dose as soon as possible on the same day.

2.2 Dosage Administration and Monitoring

Monitor plasma ammonia levels to determine the need for dosage adjustment. Adjust the OLPRUVA dosage to maintain the plasma ammonia level within the normal range for the patient's age, taking into consideration their clinical condition (e.g., nutritional requirements, protein intake, growth parameters, etc.).

Monitor patients for potential neurotoxicity and obtain measurements of plasma phenylacetate and phenylacetylglutamine levels [*see Warnings and Precautions (5.1), Adverse Reactions (6)*]. If neurologic symptoms (e.g., vomiting, nausea, headache, somnolence, or confusion) are present in the absence of high ammonia levels or other incurrent illnesses, consider reducing the dose of OLPRUVA.

2.3 Dosage Adjustment in Patients with Hepatic Impairment

For patients with hepatic impairment, start at the lower end of the recommended dosing range and maintain patients on the lowest dose necessary to control plasma ammonia levels [*see Use in Specific Populations (8.7)*].

2.4 Preparation and Administration Instructions

For oral administration only. Do not administer via gastrostomy or nasogastric tubes.

1. Pour the entire contents of the Mix-Aid packet into approximately 4 ounces of water in a cup and stir, forming a suspension.
2. Pour the entire contents of the OLPRUVA packet(s) into the suspension and stir.
3. Drink the entire suspension within 5 minutes after stirring to minimize dissolution of coating. After 30 minutes, the suspension should be discarded.
4. Pour another 4 ounces of water into the cup and drink to make sure that any

OLPRUVA remaining in the cup is consumed.

3 DOSAGE FORMS AND STRENGTHS

For oral suspension:

2 g, 3 g, 4 g, 5 g, 6 g, and 6.67 g of sodium phenylbutyrate as white to off-white pellets in packet(s) for reconstitution.

4 CONTRAINDICATIONS

None.

5 WARNINGS AND PRECAUTIONS

5.1 Neurotoxicity of Phenylacetate

Increased exposure to phenylacetate, the major metabolite of OLPRUVA, may be associated with neurotoxicity in patients with UCDs. In a study of adult cancer patients receiving intravenous phenylacetate, 250-300 mg/kg/day for 14 days, repeated at 4-week intervals, signs and symptoms of neurotoxicity, which were reversible upon discontinuation, were seen at plasma concentrations ≥ 3.5 mmol/L, and included somnolence, fatigue, and light headedness [*see Adverse Reactions (6)*]. OLPRUVA is not approved for intravenous use or for treatment of patients with cancer.

If symptoms of vomiting, nausea, headache, somnolence, or confusion are present in the absence of high ammonia levels or other intercurrent illnesses, consider reducing the dose of OLPRUVA [*see Dosage and Administration (2.2)*].

Phenylacetate caused neurotoxicity when given subcutaneously in rat pups [*see Use in Specific Populations (8.4)*].

5.2 Hypokalemia

Renal excretion of phenylacetylglutamine may induce urinary loss of potassium. Monitor serum potassium during therapy and initiate appropriate treatment when necessary.

5.3 Conditions Associated with Edema

OLPRUVA contains 124 mg (5.4 mmol) of sodium per gram of sodium phenylbutyrate (12.4% w/w) and the Mix-Aid contains 5 mg of sodium per packet, corresponding to 2.5 g (108 mmol) of sodium in the maximum daily dose of 20 g of OLPRUVA. In order to decide if administration of OLPRUVA is appropriate in patients with diseases that involve edema, such as heart failure, cirrhosis, or nephrosis, calculate the total amount of sodium patients will be exposed to based on their BSAs [*see Dosage and Administration (2.1)*]. If a patient develops new-onset edema or worsening edema while on treatment, discontinue administration of OLPRUVA and initiate appropriate therapy.

6 ADVERSE REACTIONS

The following adverse reactions associated with the use of sodium phenylbutyrate were

identified in clinical studies or postmarketing reports. Because some of these reactions were reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Most common adverse reactions (incidence ≥ 3%) are amenorrhea or menstrual dysfunction (irregular menstrual cycles), decreased appetite, body odor and bad taste or taste aversion.

Less Common Clinical Adverse Reactions

Blood and lymphatic system disorders: aplastic anemia, ecchymoses

Cardiac disorders: arrhythmia

Gastrointestinal disorders: abdominal pain, gastritis, nausea and vomiting, constipation, rectal bleeding, peptic ulcer disease, pancreatitis

Metabolism and nutrition disorders: increased weight, edema

Nervous system disorders: syncope, headache

Psychiatric disorders: depression

Renal and urinary disorders: renal tubular acidosis

Skin and subcutaneous tissue disorders: rash

Laboratory Adverse Reactions

Blood and lymphatic system disorders: anemia, leukopenia and leukocytosis, thrombocytopenia, thrombocytosis

Hepatobiliary disorders: hyperbilirubinemia, increased blood alkaline phosphatase, increased transaminases

Metabolism and nutrition disorders: acidosis, alkalosis, hyperchloremia, hypophosphatemia, hyperuricemia, hyperphosphatemia, hypernatremia, hypokalemia, hypoalbuminemia, decreased total protein

Clinical Adverse Reactions with Use of Phenylacetate

Nervous system disorders: Neurotoxicity was reported in cancer patients receiving intravenous phenylacetate, the major metabolite of OLPRUVA (OLPRUVA is not approved for intravenous use or for treatment of patients with cancer). Signs and symptoms were predominately somnolence, fatigue, and dizziness (lightheadedness); less frequently reported were headache, dysgeusia, hypoacusis, disorientation, memory impairment, and exacerbation of a pre-existing neuropathy.

7 DRUG INTERACTIONS

7.1 Potential for Other Drugs to Affect Ammonia

Corticosteroids

Use of corticosteroids may cause the breakdown of body protein and increase plasma ammonia levels.

Valproic Acid and Haloperidol

Hyperammonemia may be induced by haloperidol and by valproic acid.

Monitor plasma ammonia levels closely when corticosteroids, valproic acid, or haloperidol is used concomitantly with OLPRUVA.

7.2 Potential for Other Drugs to Affect OLPRUVA

Probenecid

Probenecid may inhibit renal excretion of the metabolites of OLPRUVA including phenylacetate and phenylacetylglutamine. Monitor patients for potential neurotoxicity and measure plasma phenylacetate and phenylacetylglutamine levels when probenecid is used concomitantly with OLPRUVA [*see Dosage and Administration (2.2)*].

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Risk Summary

Available data with sodium phenylbutyrate use in pregnant women are insufficient to identify a drug associated risk of major birth defects, miscarriage or adverse maternal or fetal outcomes. Animal reproduction studies have not been conducted with sodium phenylbutyrate. Based on published animal data, phenylacetate may be neurotoxic to the developing brain (*see Data*).

There are serious risks to the mother and fetus associated with untreated urea cycle disorders during pregnancy which can result in serious morbidity and mortality to the mother and fetus (*see Clinical Considerations*).

The estimated background risk of major birth defects and miscarriage for the indicated population is unknown. All pregnancies have a background risk of birth defect, loss or other adverse outcomes. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2% to 4% and 15% to 20%, respectively.

Clinical Considerations

Disease-Associated Maternal and/or Embryo/Fetal Risk

Pregnancy is a time of increased metabolic demand which increases the risk for hyperammonemic episodes when metabolic demands are not met. Hyperammonemic episodes in pregnancy are associated with impaired cognition in the mother and an increased risk of maternal and fetal death.

Data

Animal Data

In rats, intrauterine exposure to phenylacetate produced lesions in the neonatal brain in layer 5 of the cortical pyramidal cells; dendritic spines were longer and thinner than normal and reduced in number.

8.2 Lactation

Risk Summary

There are no data on the presence of sodium phenylbutyrate and its metabolite in either human or animal milk, the effects on the breastfed infant, or the effects on milk production. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for OLPRUVA and any potential adverse effects on the breastfed infant from OLPRUVA or from the underlying maternal condition.

8.4 Pediatric Use

The safety and effectiveness of OLPRUVA have been established as adjunctive therapy to the standard of care, which includes dietary management, in the chronic management of pediatric patients weighing 20 kg or greater and with a body surface area 1.2 m^2 or greater, with urea cycle disorders (UCDs) involving deficiencies of carbamylphosphate synthetase (CPS), ornithine transcarbamylase (OTC), or argininosuccinic acid synthetase (AS).

OLPRUVA is not indicated for the treatment of acute hyperammonemia which can be a life-threatening medical emergency that requires rapid acting interventions to reduce plasma ammonia levels.

The sodium content of OLPRUVA has the potential to cause new-onset edema or worsening edema from salt and water retention, particularly in patients with underlying predisposing conditions [*see Warnings and Precautions (5.3)*].

OLPRUVA is not approved in pediatric patients weighing less than 20 kg or in pediatric patients weighing 20 kg or greater with a BSA of less than 1.2 m^2.

Neurotoxicity has been observed in juvenile animals with phenylacetate exposure [*see Warnings and Precautions (5.1)*].

Juvenile Animal Toxicity Data

When given subcutaneously to neonatal rats, 190-474 mg/kg phenylacetate caused decreased proliferation and increased loss of neurons, and it reduced CNS myelin. Cerebral synapse maturation was retarded, and the number of functioning nerve terminals in the cerebrum was reduced, which resulted in impaired brain growth.

8.5 Geriatric Use

Clinical studies of OLPRUVA did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences in responses between the elderly and younger patients. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal, or cardiac function and of concomitant disease or other drug therapy.

8.6 Renal Impairment

No studies with OLPRUVA were conducted in subjects with renal impairment. Monitor plasma ammonia levels when starting patients with impaired renal function on OLPRUVA [*see Clinical Pharmacology (12)*].

8.7 Hepatic Impairment

No studies with OLPRUVA were conducted in subjects with hepatic impairment. Start at the lower end of the recommended dosing range and maintain patients with hepatic impairment on the lowest dose necessary to control plasma ammonia levels [*see Clinical Pharmacology (12)*, *Dosage and Administration (2.3)*].

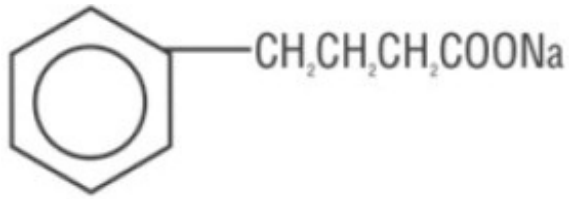
10 OVERDOSAGE

Overdoses of OLPRUVA exceeding ten-fold the maximum recommended dosage may produce emesis, CNS depression, metabolic acidosis with or without respiratory alkalosis, hypernatremia, hypokalemia, and hypophosphatemia. Symptoms of overdose overlap with those of acute hyperammonemia. If overdose occurs, discontinue OLPRUVA, monitor plasma phenylacetate and ammonia levels closely, and institute appropriate emergency management, which may include hemodialysis, continuous veno-venous hemofiltration (CVVH) or extracorporeal membrane oxygenation (ECMO).

11 DESCRIPTION

OLPRUVA (sodium phenylbutyrate) for oral suspension is a nitrogen binding agent. Sodium phenylbutyrate is a white to yellowish-white powder. It is freely soluble in water and in methanol, and practically insoluble in acetone and diethyl ether. It is known chemically as sodium 4-phenylbutyrate with a molecular weight of 186.19 and molecular formula $C_{10}H_{11}NaO_2$.

Structural Formula:



OLPRUVA is supplied in dosage envelopes containing 2 g (equivalent to 1.75 g phenylbutyrate), 3 g (equivalent to 2.63 g phenylbutyrate), 4 g (equivalent to 3.51 g phenylbutyrate), 5 g (equivalent to 4.38 g phenylbutyrate), 6 g (equivalent to 5.26 g phenylbutyrate), and 6.67 g (equivalent to 5.85 g phenylbutyrate) of sodium phenylbutyrate in one or two packets. OLPRUVA is a polymer coated formulation which contains the following inactive ingredients: amino methacrylate copolymer, hypromellose, microcrystalline cellulose, polyethylene glycol 6000, silicon dioxide, and talc.

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

Sodium phenylbutyrate is a pro-drug and is metabolized to phenylacetate. Phenylacetate is a metabolically active compound that conjugates with glutamine via acetylation to form phenylacetylglutamine. Phenylacetylglutamine is excreted by the kidneys, hence providing an alternate vehicle for waste nitrogen excretion.

12.2 Pharmacodynamics

In patients with urea cycle disorders, sodium phenylbutyrate decreased elevated plasma ammonia and glutamine levels.

12.3 Pharmacokinetics

The pharmacokinetics of phenylbutyrate and its metabolite phenylacetate were characterized in healthy adult subjects following a single oral administration of OLPRUVA (5 g of sodium phenylbutyrate) with suspension agent under fasted and fed conditions.

Absorption

The pharmacokinetic parameters for the maximum plasma concentration (C_{max}) and area under the plasma concentration-time curve (AUC) of phenylbutyrate and phenylacetate under fasted conditions are summarized in Table 1.

Table 1 C_{max} and AUC of Phenylbutyrate and Phenylacetate Following a Single Oral Dose Administration of OLPRUVA (5 g) in Healthy Subjects Under Fasted Conditions

PK Parameters	Phenylbutyrate Results (Mean ± SD)	Phenylacetate Results (Mean ± SD)
C_{max} (µg/mL)	229 ± 48	39 ± 14
AUC_{inf} (hr•µg/mL)	510 ± 129	183 ± 76

Effect of Food

Compared to those under fasted conditions, phenylbutyrate C_{max} was decreased by 50% and AUC_{inf} decreased by 39% when OLPRUVA was administered with a high-fat meal (total 980 calories with 55% fat). For the metabolite phenylacetate, C_{max} decreased by 32% and AUC_{inf} decreased by 29% with a high-fat meal compared to fasted conditions.

Distribution

The apparent volume of distribution of phenylbutyrate was 7.2 L under fasted conditions.

Elimination

The mean half-life of phenylbutyrate was 0.5 hours under fasted conditions. The mean half-life of phenylacetate was 1.2 hours under fasted conditions.

Metabolism

Following oral administration, sodium phenylbutyrate is metabolized by β-oxidation into phenylacetate which is converted to its coenzyme A ester, phenylacetyl-coenzyme A and further conjugated with glutamine to form phenylacetylglutamine. Phenylacetylglutamine is excreted by the kidneys. The major sites for metabolism of sodium phenylbutyrate are the liver and kidneys. Phenylacetate is also hydrolyzed by esterases in liver and blood.

Excretion

Approximately 80-100% of sodium phenylbutyrate is excreted by the kidneys within 24 hours as phenylacetylglutamine. For each gram of sodium phenylbutyrate administered, it is estimated that between 0.12-0.15 grams of phenylacetylglutamine

nitrogen are produced.

Specific Populations

Patients with Renal Impairment or Hepatic Impairment

OLPRUVA has not been studied in patients with renal impairment or in patients with hepatic impairment.

Drug Interaction Studies

In vitro or clinical studies with OLPRUVA for determination of potential drug-drug interaction have not been conducted.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

Carcinogenicity, mutagenicity, and fertility studies of sodium phenylbutyrate have not been conducted.

16 HOW SUPPLIED/STORAGE AND HANDLING

OLPRUVA (sodium phenylbutyrate) for oral suspension is available in dosage strengths of 2 g, 3 g, 4 g, 5 g, 6 g, and 6.67 g of sodium phenylbutyrate as white to off-white pellets. Each dose is packaged in a dosage envelope containing one or two packets of sodium phenylbutyrate for oral suspension and a suspending agent packet (labeled as Mix-Aid). A 30-day supply of OLPRUVA is provided in a kit containing 90 dosage envelopes.

Table 2 OLPRUVA Available Dosage Strengths

Dosage Strength	OLPRUVA packet(s) in each envelope	Envelope NDC	Kit NDC
2 g	one 2 g packet (NDC 72542-002-01)	72542-200-02	72542-200-09
3 g	one 3 g packet (NDC 72542-003-01)	72542-300-02	72542-300-09
4 g	two 2 g packets	72542-400-02	72542-400-18
5 g	one 2 g packet and one 3 g packet	72542-500-02	72542-500-18
6 g	two 3 g packets	72542-600-02	72542-600-18
6.67 g	one 3 g packet and one 3.67 g packet (NDC 72542-367-01)	72542-667-02	72542-667-18

Store OLPRUVA at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [see USP Controlled Room Temperature].

17 PATIENT COUNSELING INFORMATION

Advise the patient to read the FDA-approved patient labeling (Patient Information and Instructions for Use).

Neurotoxicity

Advise the patient or caregiver that neurotoxicity may occur during OLPRUVA treatment. Inform the patient or caregiver of the signs and symptoms of this risk and to contact the healthcare provider immediately if signs and symptoms occur [*see Warnings and Precautions (5.1)*].

Preparation and Administration

Inform the patient or caregiver that the OLPRUVA packet(s) must be mixed with the prepared Mix-Aid suspension and to drink the entire suspension within 5 minutes after stirring to minimize dissolution of coating. After 30 minutes, the suspension should be discarded [*see Dosage and Administration (2.3)*].

Inform the patient or caregiver that if a dose is missed, take the missed dose as soon as possible on the same day [*see Dosage and Administration (2.1)*].

acertherapeutics

Manufactured for:
Acer Therapeutics Inc.
300 Washington St.
Newton, MA 02458
For more information call Acer Therapeutics Inc. at 1-844-600-2237.

65003012

PATIENT INFORMATION
OLPRUVA™ (ol proo vah)
(sodium phenylbutyrate)
for oral suspension

What is OLPRUVA?

- OLPRUVA is a prescription medicine used along with certain therapy, including changes in diet, for the long-term management of adults and children weighing 44 pounds (20 kg) or greater and with a body surface area (BSA) of 1.2 m^2 or greater, with urea cycle disorders (UCDs), involving deficiencies of carbamylphosphate synthetase (CPS), ornithine transcarbamylase (OTC) or argininosuccinic acid synthetase (AS).
- Episodes of rapid increase of ammonia in the blood (acute hyperammonemia) may happen in people during treatment with OLPRUVA. OLPRUVA is not for the treatment of acute hyperammonemia, which can be life-threatening and requires emergency medical treatment.
- OLPRUVA is not approved in children weighing less than 44 pounds (20 kg) or in children weighing 44 pounds (20 kg) or greater with a BSA of less than 1.2 m^2.

Before taking OLPRUVA, tell your or your child's healthcare provider about all

of your medical conditions, including if you:

- have heart problems
- have kidney or liver problems
- are pregnant or plan to become pregnant. It is not known if OLPRUVA will harm your unborn baby.
- are breastfeeding or plan to breastfeed. It is not known if OLPRUVA passes into breastmilk. Talk to your healthcare provider about the best way to feed your baby during treatment with OLPRUVA.

Tell your healthcare provider about all the medicines you or your child take, including prescription and over-the-counter medicines, vitamins, and herbal supplements.

Certain medicines may increase the level of ammonia in your blood or cause serious side effects when taken during treatment with OLPRUVA. Especially tell your healthcare provider if you or your child take:

- corticosteroids
- valproic acid
- haloperidol
- probenecid

Know the medicines you take. Keep a list of them to show your or your child's healthcare provider and pharmacist when you get a new medicine.

How should I or my child take OLPRUVA?

Read the detailed Instructions for Use that comes with OLPRUVA for information about the right way to prepare and take a dose of OLPRUVA.

- Take OLPRUVA exactly as prescribed by your healthcare provider.
- Your healthcare provider may change your dose if needed. Do not change your dose unless your healthcare provider tells you to.
- Your healthcare provider will prescribe OLPRUVA based on your or your child's weight.
- Take your OLPRUVA dose with food.
- If you miss a dose of OLPRUVA, take it as soon as possible that same day.
- **Do not** give or take OLPRUVA through a gastrostomy or nasogastric tube.
- If you take too much OLPRUVA, call your healthcare provider or go to the nearest hospital emergency room right away.

What are the possible side effects of OLPRUVA?

OLPRUVA can cause serious side effects, including:

- **Nervous system problems (neurotoxicity).** Call your healthcare provider right away if you or your child get any of the following symptoms during treatment with OLPRUVA:
  - sleepiness
  - tiredness
  - lightheadedness
  - vomiting
  - nausea
  - headache
  - confusion
- **Low potassium levels in your blood (hypokalemia).** Your healthcare provider will monitor your blood potassium levels during treatment with OLPRUVA and treat if

needed.
- **Conditions related to swelling (edema).** OLPRUVA contains salt (sodium), which can cause swelling from salt and water retention. Your healthcare provider will decide if OLPRUVA is right for you if you have certain medical conditions that cause edema, such as heart failure, liver problems or kidney problems.

The most common side effects of OLPRUVA include:

- absent or irregular menstrual periods
- decreased appetite
- body odor
- bad taste or avoiding foods that you ate prior to getting sick (taste aversion)

Your healthcare provider may do certain blood tests to check you or your child for side effects during treatment with OLPRUVA.
These are not all of the possible side effects of OLPRUVA. Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

How should I store OLPRUVA?

- Store OLPRUVA at room temperature between 68°F and 77°F (20°C and 25°C).
- **Keep OLPRUVA and all medicines out of the reach of children.**

General information about the safe and effective use of OLPRUVA.
Medicines are sometimes prescribed for purposes other than those listed in a Patient Information leaflet. Do not use OLPRUVA for a condition for which it was not prescribed. Do not give OLPRUVA to other people, even if they have the same symptoms that you have. It may harm them. You can ask your pharmacist or healthcare provider for information about OLPRUVA that is written for health professionals.

What are the ingredients in OLPRUVA?
Active ingredient: sodium phenylbutyrate
Inactive ingredients: amino methacrylate copolymer, hypromellose, microcrystalline cellulose, polyethylene glycol 6000, silicon dioxide, and talc.

acertherapeutics

Manufactured for:
Acer Therapeutics Inc.
300 Washington St.
Newton, MA 02458
For more information, go to www.OLPRUVA.com or call Acer Therapeutics Inc. at 1-844-600-2237.

This Patient Information has been approved by the U.S. Food and Drug Administration. Issued: 12/2022

INSTRUCTIONS FOR USE
OLPRUVA™ (ol proo vah)
(sodium phenylbutyrate)
for oral suspension

Read this Instructions for Use before taking OLPRUVA oral suspension and each time

you get a refill. There may be new information. This Instructions for Use does not take the place of talking to your healthcare provider about your medical condition or treatment. Talk to your healthcare provider or pharmacist if you have any questions about how to take a dose of OLPRUVA.

This Instructions for Use contains information on how to prepare and take 1 dose of OLPRUVA.

Supplies needed to take 1 dose of OLPRUVA as prescribed:

- One dosage envelope containing OLPRUVA and Mix-Aid packets. The contents of 1 envelope equals 1 full dose.
- An open drinking cup
- A spoon
- Water

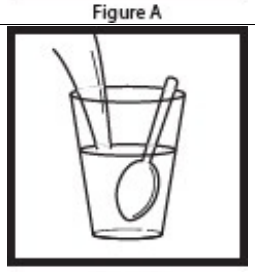
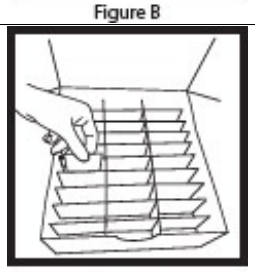
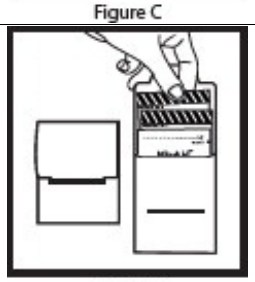
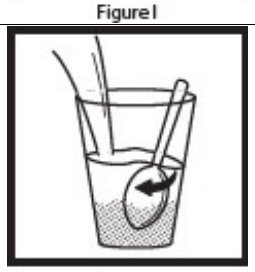
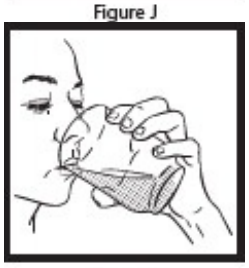
Step 1: Get an open drinking cup and spoon (See **Figure A**).	 Figure A
Step 2: Add about 4 ounces of water to an open drinking cup (See **Figure B**).	 Figure B
Step 3: Remove 1 dosage envelope from the kit (See **Figure C**). **Note:** Each kit is divided into 30 individual sections. Each section contains 3 dosage envelopes for a total of 90 dosage envelopes.	 Figure C
Step 4: Open the dosage envelope and remove all packets (1 packet of Mix-Aid and 1 or 2 packets of OLPRUVA) (See **Figure D**). **Note:** All packets in the dosage envelope must be used for 1 full dose.	 Figure D
Step 5: To open the Mix-Aid packet, tear or cut with scissors, straight across from the notch (See **Figures E and F**).	 Figure E

	 Figure F
Step 6: Add the full contents of the Mix-Aid packet to the water (in the open drinking cup) and stir with the spoon for at least 30 seconds (See **Figure G**). **Note:** The contents will not dissolve but will make the water thicker so that OLPRUVA does not sink to the bottom of the cup. **Do not drink yet.**	 Figure G
Step 7: To open the OLPRUVA packet(s), fold at the notch and tear or cut with scissors. Add the full contents of the OLPRUVA packet(s) to the open drinking cup containing the mixture from Step 6 (the water and Mix-Aid) and stir for 15 seconds (See **Figure H**). Drink the entire contents of the open drinking cup within 5 minutes to help prevent the coating from dissolving (See **Figure I**). **Note:** The entire contents of each packet must be used for 1 full dose.	 Figure H  Figure I
Step 8: To make sure that you get the full dose, pour another 4 ounces of water in the open drinking cup, stir (See **Figure J**) and drink the entire contents (See **Figure K**). OLPRUVA suspension is taken by mouth only. **Do not** take or give OLPRUVA suspension in a gastrostomy or nasogastric tube. The mixed OLPRUVA suspension should be thrown away (discarded) after 30 minutes, if not used right away.	 Figure J  Figure K

How should I store OLPRUVA?

- Store OLPRUVA at room temperature between 68°F and 77°F (20°C and 25°C).
- **Keep OLPRUVA and all medicines out of the reach of children.**

Manufactured for:
Acer Therapeutics Inc.
300 Washington St.
Newton, MA 02458
For more information, go to www.OLPRUVA.com or call Acer Therapeutics Inc. at 1-844-600-2237.

This Instructions for Use has been approved by the U.S. Food and Drug Administration.
Issued: 12/2022

Principal Display Panel – Mix-Aid Label

Tear or Cut

Mix-Aid™

Suspending agent for use with
OLPRUVA™ (sodium phenylbutyrate)
for oral suspension

Directions: Mix full contents of packet per patient instructions for use.

The contents of this packet will NOT dissolve but will make the water thicker to suspend OLPRUVA™.

NET WT. 0.11 OZ (3.1 g)

Tear or Cut

Mix-Aid™

Suspending agent for use with OLPRUVA™ (sodium phenylbutyrate) for oral suspension

Directions: Mix full contents of packet per patient instructions for use.

The contents of this packet will NOT dissolve but will make the water thicker to suspend OLPRUVA™.

NET WT. 0.11 OZ (3.1 g)

Ingredients: Food Starch - Modified.

Nutrition Facts Serv. size 1 Packet (3g),
Amount per serving: **Calories** 10,
Total Fat 0g (0% DV), **Sodium** 5mg (0% DV), **Total Carb.** 3g (1% DV), **Protein** 0g.
Not a significant source of sat. fat, trans fat, cholest., fiber, total sugars, added sugars, vit. D, calcium, iron and potas.

Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458
OLPRUVA™ is a trademark of Acer Therapeutics Inc.

8 60007 89340 7

2IT004350

LOT:

EXP:

Principal Display Panel - 2 g Carton Label

NDC 72542-200-09

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

2g

Rx Only

Recommended Dosage: See Prescribing Information.

Kit contains 90 dosage envelopes. Each envelope contains one OLPRUVA™ 2 gram packet and one Mix-Aid™ packet.

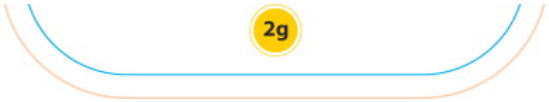
Each 2 g of sodium phenylbutyrate is equivalent to 1.75 g of phenylbutyrate.

See accompanying patient instructions for use.

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

Keep out of reach of children


OLPRUVA™
(sodium phenylbutyrate)
for oral suspension
2g
NDC 72542-200-09
Rx Only
Recommended Dosage: See Prescribing Information.
Kit contains 90 dosage envelopes. Each envelope contains one OLPRUVA™ 2 gram packet and one Mix-Aid™ packet.
Each 2 g of sodium phenylbutyrate is equivalent to 1.75 g of phenylbutyrate.
See accompanying patient instructions for use.
Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].
Keep out of reach of children
acer therapeutics



Principal Display Panel - 2 g Pouch Label

Fold at Notch
and Tear

NDC 72542-002-01

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

2g
per packet

Rx Only

Recommended Dosage: See Prescribing Information.

Each packet contains 2 g of sodium phenylbutyrate
equivalent to 1.75 g of phenylbutyrate.

See accompanying patient instructions for use.

Keep out of reach of children

acertherapeutics

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

EXP INFO HERE:

LOT INFO HERE:

3 7 2 5 4 2 0 0 2 0 1 0

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458

65003428

Principal Display Panel - 2 g Envelope Label

NDC 72542-200-02

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

2g

Rx Only

Keep out of reach of children

Recommended Dosage: See Prescribing Information.

Each envelope contains one OLPRUVA™ 2 gram packet and one Mix-Aid™ packet.

Each 2 g of sodium phenylbutyrate is equivalent to 1.75 g of phenylbutyrate.

acertherapeutics

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

OLPRUVA™
(sodium phenylbutyrate) for oral suspension

2g

Each envelope contains one OLPRUVA™ 2 gram packet and one Mix-Aid™ packet.
Each 2 g of sodium phenylbutyrate is equivalent to 1.75 g of phenylbutyrate.

See accompanying patient instructions for use.

acertherapeutics

Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

LOT 123456
EXP YYYY-MMM-DD

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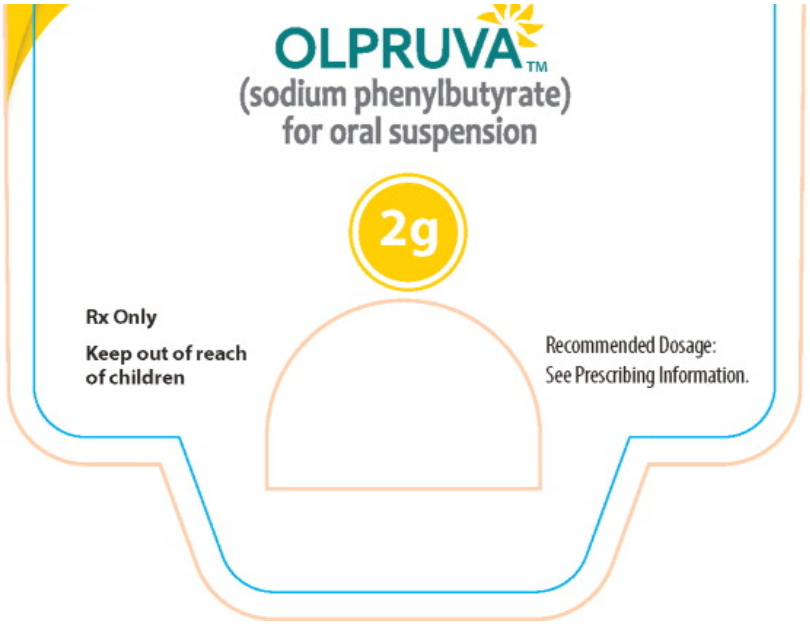
NDC 72542-200-02



Principal Display Panel - 3 g Carton Label

NDC 72542-300-09

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

3g

Rx Only

Recommended Dosage: See Prescribing Information.

Kit contains 90 dosage envelopes. Each envelope contains one OLPRUVA™ 3 gram packet and one Mix-Aid™ packet.

Each 3 g of sodium phenylbutyrate is equivalent to 2.63 g of phenylbutyrate.

See accompanying patient instructions for use.

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

Keep out of reach of children

acertherapeutics


OLPRUVA™
(sodium phenylbutyrate)
for oral suspension
3g
NDC 72542-300-09
Rx Only
Recommended Dosage: See Prescribing Information.
Kit contains 90 dosage envelopes. Each envelope contains one OLPRUVA™ 3 gram packet and one Mix-Aid™ packet.
Each 3 g of sodium phenylbutyrate is equivalent to 2.63 g of phenylbutyrate.
See accompanying patient instructions for use.
Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].
Keep out of reach of children
acer therapeutics

Principal Display Panel - 3 g Pouch Label

Fold at Notch
and Tear

NDC 72542-003-01

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

3g
per packet

Rx Only

Recommended Dosage: See Prescribing Information.

Each packet contains 3 g of sodium phenylbutyrate
equivalent to 2.63 g of phenylbutyrate.

See accompanying patient instructions for use.

Keep out of reach of children

acertherapeutics

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

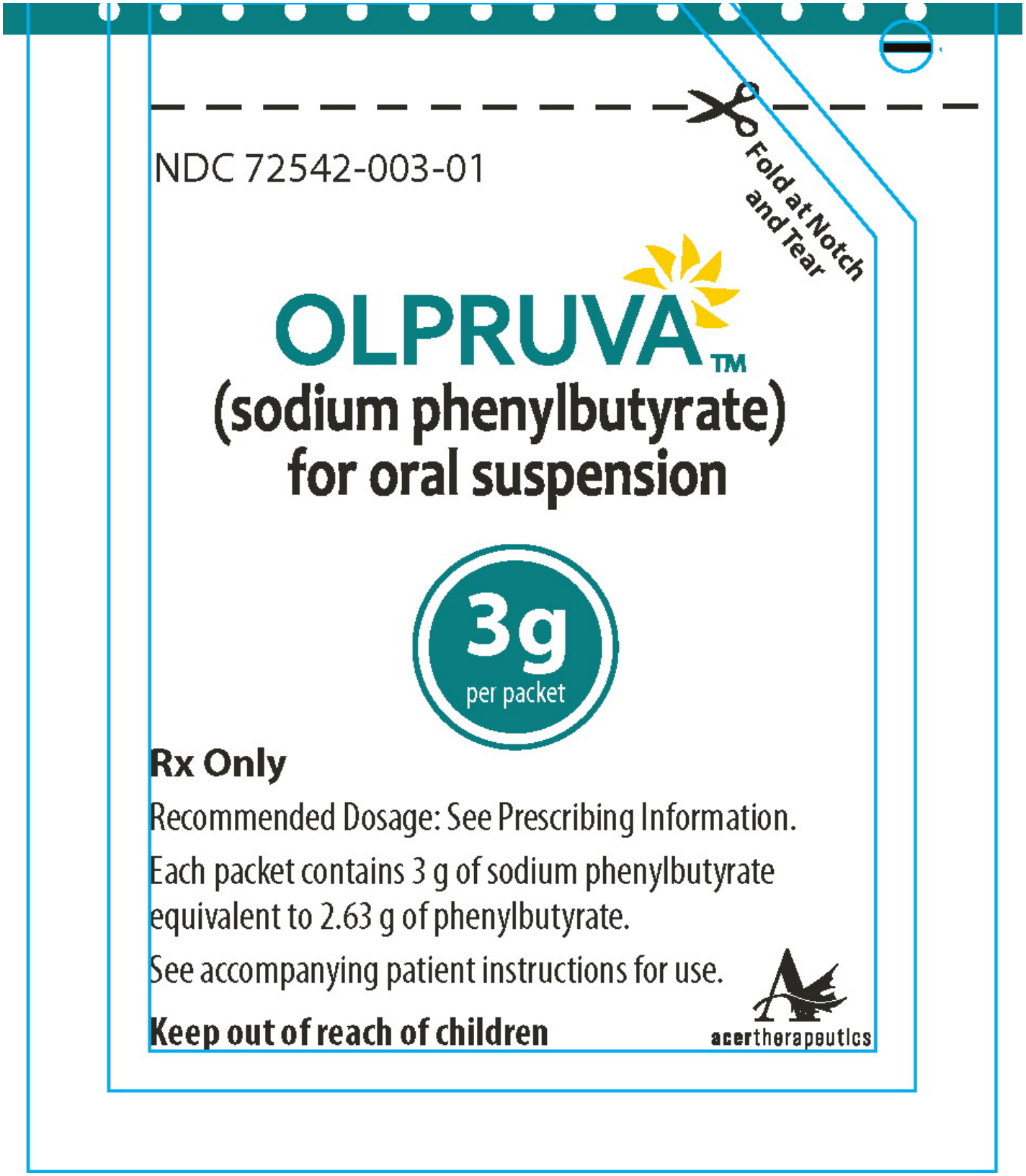
EXP INFO HERE:

LOT INFO HERE:

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458

65003429



Principal Display Panel - 3 g Envelope Label

NDC 72542-300-02

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

3g

Rx Only

**Keep out of reach
of children**

Recommended Dosage: See Prescribing Information.

Each envelope contains one OLPRUVA™ 3 gram packet and one Mix-Aid™ packet.

Each 3 g of sodium phenylbutyrate is equivalent to 2.63 g of phenylbutyrate.

acertherapeutics

**Store at 20°C to 25°C (68°F to 77°F); excursions permitted
between 15°C and 30°C (59°F and 86°F) [See USP Controlled
Room Temperature].**

OLPRUVA™
(sodium phenylbutyrate) for oral suspension

3g

Each envelope contains one OLPRUVA™ 3 gram packet and one Mix-Aid™ packet.
Each 3 g of sodium phenylbutyrate is equivalent to 2.63 g of phenylbutyrate.

See accompanying patient instructions for use.

Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458

acertherapeutics

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

LOT 123456
EXP YYYY-MMM-DD

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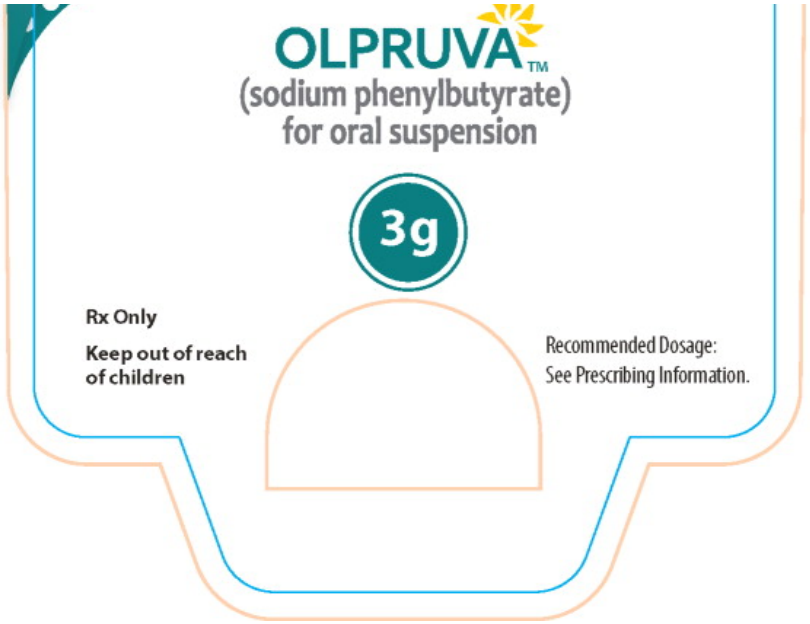
NDC 72542-300-02



Principal Display Panel - 4 g Carton Label

NDC 72542-400-18

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

4g

Rx Only

Recommended Dosage: See Prescribing Information.

Kit contains 90 dosage envelopes. Each envelope contains two OLPRUVA™ 2 gram packets and one Mix-Aid™ packet.

Each 4 g of sodium phenylbutyrate is equivalent to 3.51 g of phenylbutyrate.

See accompanying patient instructions for use.

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

Keep out of reach of children

acertherapeutics


OLPRUVA™
(sodium phenylbutyrate)
for oral suspension
4g
NDC 72542-400-18
Rx Only
Recommended Dosage: See Prescribing Information.
Kit contains 90 dosage envelopes. Each envelope contains two OLPRUVA™ 2 gram packets and one Mix-Aid™ packet.
Each 4 g of sodium phenylbutyrate is equivalent to 3.51 g of phenylbutyrate.
See accompanying patient instructions for use.
Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].
Keep out of reach of children
acer therapeutics
Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458

Principal Display Panel - 4 g Envelope Label

NDC 72542-400-02

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

4g

Rx Only

Keep out of reach
of children

Recommended Dosage: See Prescribing Information.

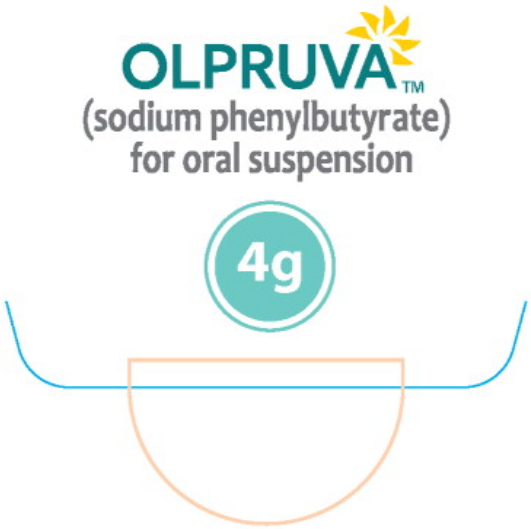
Each envelope contains two OLPRUVA™ 2 gram packets and one Mix-Aid™ packet.

Each 4 g of sodium phenylbutyrate is equivalent to 3.51 g of phenylbutyrate.

acertherapeutics

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

OLPRUVA™
(sodium phenylbutyrate) for oral suspension



Each envelope contains two OLPRUVA™ 2 gram packets and one Mix-Aid™ packet.
Each 4 g of sodium phenylbutyrate is equivalent to 3.51 g of phenylbutyrate.

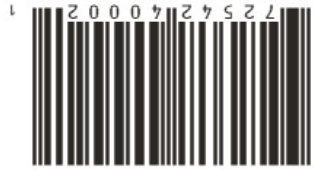
See accompanying patient instructions for use.

acertherapeutics

Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

LOT 123456
EXP YYYY-MMM-DD



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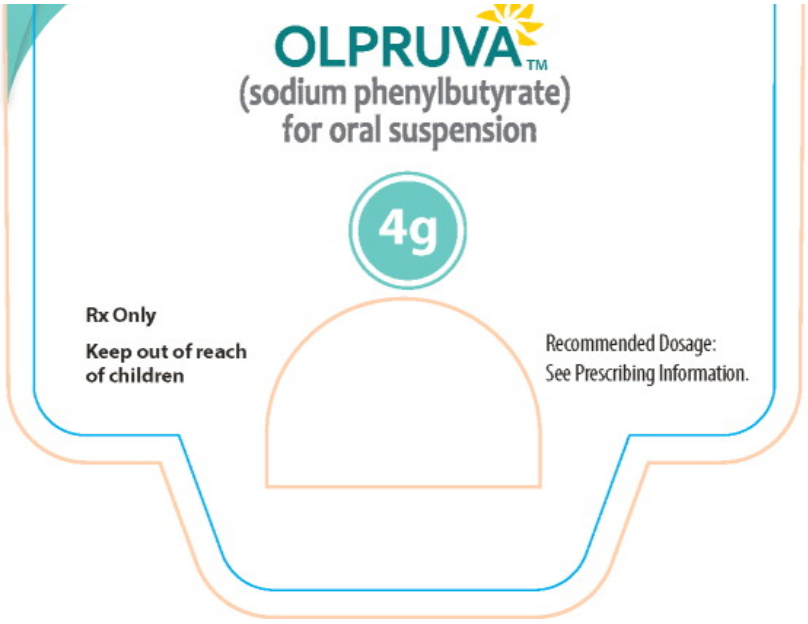
NDC 72542-400-02



Principal Display Panel - 5 g Carton Label

NDC 72542-500-18

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

5g

Rx Only

Recommended Dosage: See Prescribing Information.

Kit contains 90 dosage envelopes. Each envelope contains one OLPRUVA™ 2 gram packet, one OLPRUVA™ 3 gram packet, and one Mix-Aid™ packet.

Each 5 g of sodium phenylbutyrate is equivalent to 4.38 g of phenylbutyrate.

See accompanying patient instructions for use.

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

Keep out of reach of children

acertherapeutics


OLPRUVA™
(sodium phenylbutyrate)
for oral suspension
5g
NDC 72542-500-18
Rx Only
Recommended Dosage: See Prescribing Information.
Kit contains 90 dosage envelopes. Each envelope contains one OLPRUVA™ 2 gram packet, one OLPRUVA™ 3 gram packet, and one Mix-Aid™ packet.
Each 5 g of sodium phenylbutyrate is equivalent to 4.38 g of phenylbutyrate.
See accompanying patient instructions for use.
Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].
Keep out of reach of children
Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458
acertherapeutics

Principal Display Panel - 5 g Envelope Label

NDC 72542-500-02

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

5g

Rx Only

Keep out of reach
of children

Recommended Dosage: See Prescribing Information.

Each envelope contains one OLPRUVA™ 2 gram packet, one OLPRUVA™ 3 gram packet, and one Mix-Aid™ packet.

Each 5 g of sodium phenylbutyrate is equivalent to 4.38 g of phenylbutyrate.

acertherapeutics

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

OLPRUVA™
(sodium phenylbutyrate) for oral suspension

5g

Each envelope contains one OLPRUVA™ 2 gram packet, one OLPRUVA™ 3 gram packet, and one Mix-Aid™ packet. Each 5 g of sodium phenylbutyrate is equivalent to 4.38 g of phenylbutyrate.

See accompanying patient instructions for use.

acertherapeutics

Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

LOT 123456
EXP yyyy-MMM-DD

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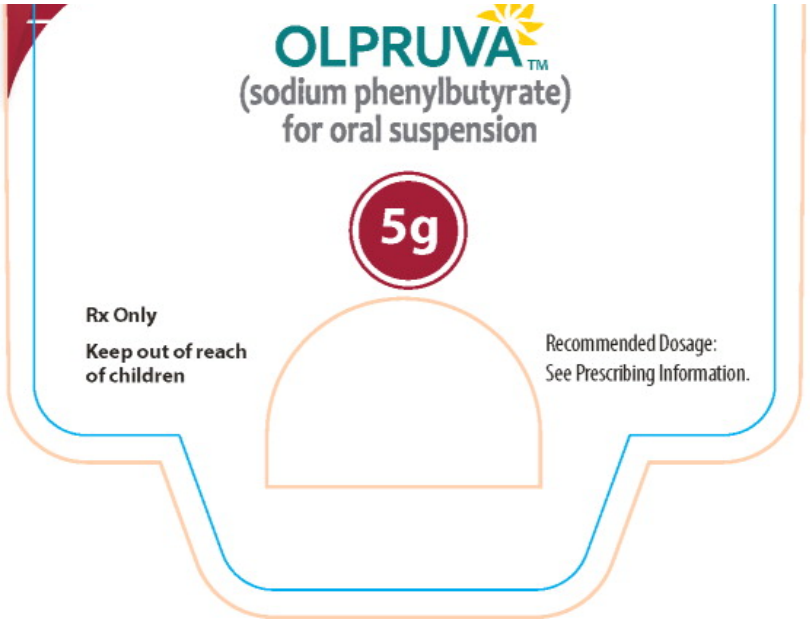
NDC 72542-500-02



Principal Display Panel - 6 g Carton Label

NDC 72542-600-18

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

6g

Rx Only

Recommended Dosage: See Prescribing Information.

Kit contains 90 dosage envelopes. Each envelope contains two OLPRUVA™ 3 gram packets and one Mix-Aid™ packet.

Each 6 g of sodium phenylbutyrate is equivalent to 5.26 g of phenylbutyrate.

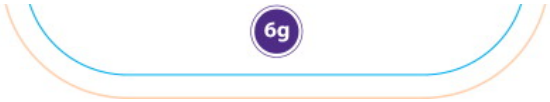
See accompanying patient instructions for use.

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

Keep out of reach of children

acertherapeutics


OLPRUVA™
(sodium phenylbutyrate)
for oral suspension
6g
NDC 72542-600-18
Rx Only
Recommended Dosage: See Prescribing Information.
Kit contains 90 dosage envelopes. Each envelope contains two OLPRUVA™ 3 gram packets and one Mix-Aid™ packet.
Each 6 g of sodium phenylbutyrate is equivalent to 5.26 g of phenylbutyrate.
See accompanying patient instructions for use.
Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].
Keep out of reach of children
acer therapeutics



Principal Display Panel - 6 g Envelope Label

NDC 72542-600-02

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

6g

Rx Only

Keep out of reach
of children

Recommended Dosage: See Prescribing Information.

Each envelope contains two OLPRUVA™ 3 gram packets and one Mix-Aid™ packet.

Each 6 g of sodium phenylbutyrate is equivalent to 5.26 g of phenylbutyrate.

acertherapeutics

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

OLPRUVA™
(sodium phenylbutyrate) for oral suspension

6g

Each envelope contains two OLPRUVA™ 3 gram packets and one Mix-Aid™ packet.
Each 6 g of sodium phenylbutyrate is equivalent to 5.26 g of phenylbutyrate.

See accompanying patient instructions for use.

Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458

acertherapeutics

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

LOT 123456
EXP YYYY-MMM-DD

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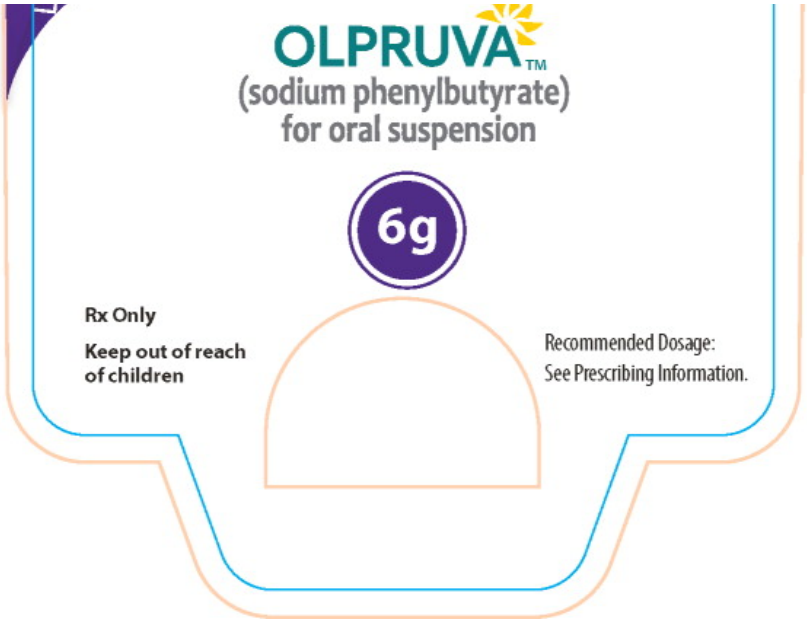
NDC 72542-600-02



Principal Display Panel - 6.67 g Carton Label

NDC 72542-667-18

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

6.67g

Rx Only

Recommended Dosage: See Prescribing Information.

Kit contains 90 dosage envelopes. Each envelope contains one OLPRUVA™ 3 gram packet, one OLPRUVA™ 3.67 gram packet, and one Mix-Aid™ packet.

Each 6.67 g of sodium phenylbutyrate is equivalent to 5.85 g of phenylbutyrate.

See accompanying patient instructions for use.

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

Keep out of reach of children

acertherapeutics


OLPRUVA™
(sodium phenylbutyrate)
for oral suspension
6.67g
NDC 72542-667-18
Rx Only
Recommended Dosage: See Prescribing Information.
Kit contains 90 dosage envelopes. Each envelope contains one OLPRUVA™ 3 gram packet, one OLPRUVA™ 3.67 gram packet, and one Mix-Aid™ packet.
Each 6.67 g of sodium phenylbutyrate is equivalent to 5.85 g of phenylbutyrate.
See accompanying patient instructions for use.
Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].
Keep out of reach of children
acer therapeutics
Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458

Principal Display Panel - 6.67 g Envelope Label

NDC 72542-667-02

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

6.67g

Rx Only

Keep out of reach
of children

Recommended Dosage: See Prescribing Information.

Each envelope contains one OLPRUVA™ 3 gram packet, one OLPRUVA™ 3.67 gram packet, and one Mix-Aid™ packet.

Each 6.67 g of sodium phenylbutyrate is equivalent to 5.85 g of phenylbutyrate.

acertherapeutics

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

OLPRUVA™
(sodium phenylbutyrate) for oral suspension

6.67g

Each envelope contains one OLPRUVA™ 3 gram packet, one OLPRUVA™ 3.67 gram packet, and one Mix-Aid™ packet. Each 6.67 g of sodium phenylbutyrate is equivalent to 5.85 g of phenylbutyrate.

See accompanying patient instructions for use.

acertherapeutics

Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

LOT 123456
EXP YYYY-MMM-DD

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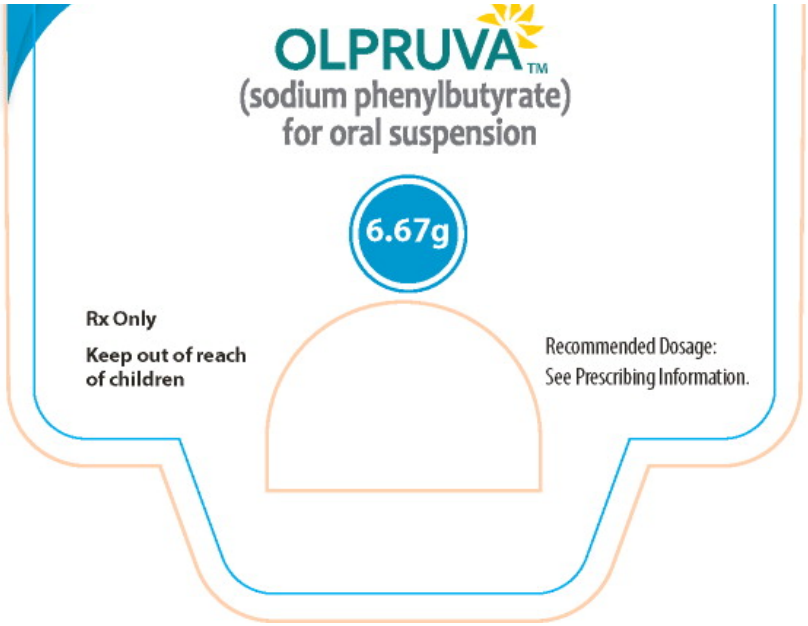
NDC 72542-667-02



Principal Display Panel - 3.67 g Pouch Label

Fold at Notch
and Tear

NDC 72542-367-01

OLPRUVA™

(sodium phenylbutyrate)
for oral suspension

3.67g
per packet

Rx Only

Recommended Dosage: See Prescribing Information.

Each packet contains 3.67 g of sodium phenylbutyrate equivalent to 3.22 g of phenylbutyrate.

See accompanying patient instructions for use.

Keep out of reach of children

acertherapeutics

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

EXP INFO HERE:

LOT INFO HERE:

Store at 20°C to 25°C (68°F to 77°F); excursions permitted between 15°C and 30°C (59°F and 86°F) [See USP Controlled Room Temperature].

Manufactured for:
Acer Therapeutics Inc.
300 Washington Street
Newton, MA 02458

65003430

NDC 72542-367-01

Fold at Notch and Tear

OLPRUVA™

(sodium phenylbutyrate) for oral suspension

3.67g per packet

Rx Only

Recommended Dosage: See Prescribing Information.

Each packet contains 3.67 g of sodium phenylbutyrate equivalent to 3.22 g of phenylbutyrate.

See accompanying patient instructions for use.

Keep out of reach of children

acertherapeutics

OLPRUVA
sodium phenylbutyrate kit

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG	**Item Code (Source)**	NDC:72542-200

Packaging				
#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-200-09	90 in 1 CARTON	12/22/2022	
1	NDC:72542-200-02	1 in 1 BOX; Type 0: Not a Combination Product		

Quantity of Parts		
Part #	Package Quantity	Total Product Quantity
Part 1	1 PACKET	1
Part 2	1 PACKET	1

Part 1 of 2

OLPRUVA

sodium phenylbutyrate for suspension

Product Information	
Item Code (Source)	NDC:72542-002
Route of Administration	ORAL

Active Ingredient/Active Moiety		
Ingredient Name	Basis of Strength	Strength
sodium phenylbutyrate (UNII: NT6K61736T) (phenylbutyric acid - UNII:7WY7YBI87E)	sodium phenylbutyrate	2 g

Inactive Ingredients	
Ingredient Name	Strength
Polyethylene glycol 6000 (UNII: 30IQX730WE)	
Silicon Dioxide (UNII: ETJ7Z6XBU4)	
Microcrystalline Cellulose (UNII: OP1R32D61U)	
Hypromellose 2910 (5 MPA.S) (UNII: R75537T0T4)	
Talc (UNII: 7SEV7J4R1U)	
DIMETHYLAMINOETHYL METHACRYLATE - BUTYL METHACRYLATE - METHYL METHACRYLATE COPOLYMER (UNII: 905HNO1SIH)	

Packaging				
#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-002-	1 in 1 PACKET; Type 0: Not a Combination		

1	01	Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Part 2 of 2

MIX-AID

starch, corn for suspension

Product Information

Item Code (Source)	NDC:72542-000
Route of Administration	ORAL

Inactive Ingredients

Ingredient Name	Strength
Starch, Corn (UNII: O8232NY3SJ)	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-000-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

OLPRUVA

sodium phenylbutyrate kit

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG	**Item Code (Source)**	NDC:72542-300

Packaging				
#	**Item Code**	**Package Description**	**Marketing Start Date**	**Marketing End Date**
1	NDC:72542-300-09	90 in 1 CARTON	12/22/2022	
1	NDC:72542-300-02	1 in 1 BOX; Type 0: Not a Combination Product		

Quantity of Parts		
Part #	**Package Quantity**	**Total Product Quantity**
Part 1	1 PACKET	1
Part 2	1 PACKET	1

Part 1 of 2

OLPRUVA

sodium phenylbutyrate for suspension

Product Information	
Item Code (Source)	NDC:72542-003
Route of Administration	ORAL

Active Ingredient/Active Moiety		
Ingredient Name	**Basis of Strength**	**Strength**
sodium phenylbutyrate (UNII: NT6K61736T) (phenylbutyric acid - UNII:7WY7YBI87E)	sodium phenylbutyrate	3 g

Inactive Ingredients	
Ingredient Name	**Strength**
Polyethylene glycol 6000 (UNII: 30IQX730WE)	
Silicon Dioxide (UNII: ETJ7Z6XBU4)	
Microcrystalline Cellulose (UNII: OP1R32D61U)	
Hypromellose 2910 (5 MPA.S) (UNII: R75537T0T4)	
Talc (UNII: 7SEV7J4R1U)	
DIMETHYLAMINOETHYL METHACRYLATE - BUTYL METHACRYLATE - METHYL METHACRYLATE COPOLYMER (UNII: 905HNO1SIH)	

Packaging				
#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-003-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Part 2 of 2

MIX-AID

starch, corn for suspension

Product Information	
Item Code (Source)	NDC:72542-000
Route of Administration	ORAL

Inactive Ingredients	
Ingredient Name	Strength
Starch, Corn (UNII: O8232NY3SJ)	

Packaging				
#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-000-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

OLPRUVA

sodium phenylbutyrate kit

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG	**Item Code (Source)**	NDC:72542-400

Packaging				
#	**Item Code**	**Package Description**	**Marketing Start Date**	**Marketing End Date**
1	NDC:72542-400-18	90 in 1 CARTON	12/22/2022	
1	NDC:72542-400-02	1 in 1 BOX; Type 0: Not a Combination Product		

Quantity of Parts		
Part #	**Package Quantity**	**Total Product Quantity**
Part 1	2 PACKET	2
Part 2	1 PACKET	1

Part 1 of 2

OLPRUVA

sodium phenylbutyrate for suspension

Product Information	
Item Code (Source)	NDC:72542-002
Route of Administration	ORAL

Active Ingredient/Active Moiety		
Ingredient Name	**Basis of Strength**	**Strength**
sodium phenylbutyrate (UNII: NT6K61736T) (phenylbutyric acid - UNII:7WY7YBI87E)	sodium phenylbutyrate	2 g

Inactive Ingredients	
Ingredient Name	**Strength**
Polyethylene glycol 6000 (UNII: 30IQX730WE)	
Silicon Dioxide (UNII: ETJ7Z6XBU4)	
Microcrystalline Cellulose (UNII: OP1R32D61U)	
Hypromellose 2910 (5 MPA.S) (UNII: R75537T0T4)	

Talc (UNII: 7SEV7J4R1U)	
DIMETHYLAMINOETHYL METHACRYLATE - BUTYL METHACRYLATE - METHYL METHACRYLATE COPOLYMER (UNII: 905HNO1SIH)	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-002-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Part 2 of 2

MIX-AID

starch, corn for suspension

Product Information

Item Code (Source)	NDC:72542-000
Route of Administration	ORAL

Inactive Ingredients

Ingredient Name	Strength
Starch, Corn (UNII: O8232NY3SJ)	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-000-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

OLPRUVA

sodium phenylbutyrate kit

Product Information

Product Type	HUMAN PRESCRIPTION DRUG	**Item Code (Source)**	NDC:72542-500

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-500-18	90 in 1 CARTON	12/22/2022	
1	NDC:72542-500-02	1 in 1 BOX; Type 0: Not a Combination Product		

Quantity of Parts

Part #	Package Quantity	Total Product Quantity
Part 1	1 PACKET	1
Part 2	1 PACKET	1
Part 3	1 PACKET	1

Part 1 of 3

OLPRUVA

sodium phenylbutyrate for suspension

Product Information

Item Code (Source)	NDC:72542-002
Route of Administration	ORAL

Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
sodium phenylbutyrate (UNII: NT6K61736T) (phenylbutyric acid - UNII:7WY7YBI87E)	sodium phenylbutyrate	2 g

Inactive Ingredients

Ingredient Name	Strength
Polyethylene glycol 6000 (UNII: 30IQX730WE)	
Silicon Dioxide (UNII: ETJ7Z6XBU4)	
Microcrystalline Cellulose (UNII: OP1R32D61U)	
Hypromellose 2910 (5 MPA.S) (UNII: R75537T0T4)	
Talc (UNII: 7SEV7J4R1U)	
DIMETHYLAMINOETHYL METHACRYLATE - BUTYL METHACRYLATE - METHYL METHACRYLATE COPOLYMER (UNII: 905HNO1SIH)	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-002-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Part 2 of 3

OLPRUVA

sodium phenylbutyrate for suspension

Product Information

Item Code (Source)	NDC:72542-003
Route of Administration	ORAL

Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
sodium phenylbutyrate (UNII: NT6K61736T) (phenylbutyric acid - UNII:7WY7YBI87E)	sodium phenylbutyrate	3 g

Inactive Ingredients

Ingredient Name	Strength
Polyethylene glycol 6000 (UNII: 30IQX730WE)	
Silicon Dioxide (UNII: ETJ7Z6XBU4)	
Microcrystalline Cellulose (UNII: OP1R32D61U)	
Hypromellose 2910 (5 MPA.S) (UNII: R75537T0T4)	
Talc (UNII: 7SEV7J4R1U)	
DIMETHYLAMINOETHYL METHACRYLATE - BUTYL METHACRYLATE - METHYL METHACRYLATE	

COPOLYMER (UNII: 905HNO1SIH)	

Packaging				
#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-003-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Part 3 of 3

MIX-AID

starch, corn for suspension

Product Information	
Item Code (Source)	NDC:72542-000
Route of Administration	ORAL

Inactive Ingredients	
Ingredient Name	Strength
Starch, Corn (UNII: O8232NY3SJ)	

Packaging				
#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-000-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

OLPRUVA

sodium phenylbutyrate kit

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG	**Item Code (Source)**	NDC:72542-600

Packaging				
#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-600-18	90 in 1 CARTON	12/22/2022	
1	NDC:72542-600-02	1 in 1 BOX; Type 0: Not a Combination Product		

Quantity of Parts		
Part #	Package Quantity	Total Product Quantity
Part 1	2 PACKET	2
Part 2	1 PACKET	1

Part 1 of 2

OLPRUVA

sodium phenylbutyrate for suspension

Product Information	
Item Code (Source)	NDC:72542-003
Route of Administration	ORAL

Active Ingredient/Active Moiety		
Ingredient Name	Basis of Strength	Strength
sodium phenylbutyrate (UNII: NT6K61736T) (phenylbutyric acid - UNII:7WY7YBI87E)	sodium phenylbutyrate	3 g

Inactive Ingredients	
Ingredient Name	Strength
Polyethylene glycol 6000 (UNII: 30IQX730WE)	

Silicon Dioxide (UNII: ETJ7Z6XBU4)	
Microcrystalline Cellulose (UNII: OP1R32D61U)	
Hypromellose 2910 (5 MPA.S) (UNII: R75537T0T4)	
Talc (UNII: 7SEV7J4R1U)	
DIMETHYLAMINOETHYL METHACRYLATE - BUTYL METHACRYLATE - METHYL METHACRYLATE COPOLYMER (UNII: 905HNO1SIH)	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-003-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Part 2 of 2

MIX-AID

starch, corn for suspension

Product Information

Item Code (Source)	NDC:72542-000
Route of Administration	ORAL

Inactive Ingredients

Ingredient Name	Strength
Starch, Corn (UNII: O8232NY3SJ)	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-000-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date

NDA	NDA214860	12/22/2022	

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

OLPRUVA

sodium phenylbutyrate kit

Product Information

Product Type	HUMAN PRESCRIPTION DRUG	**Item Code (Source)**	NDC:72542-667

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-667-18	90 in 1 CARTON	12/22/2022	
1	NDC:72542-667-02	1 in 1 BOX; Type 0: Not a Combination Product		

Quantity of Parts

Part #	Package Quantity	Total Product Quantity
Part 1	1 PACKET	1
Part 2	1 PACKET	1
Part 3	1 PACKET	1

Part 1 of 3

OLPRUVA

sodium phenylbutyrate for suspension

Product Information

Item Code (Source)	NDC:72542-003
Route of Administration	ORAL

Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
sodium phenylbutyrate (UNII: NT6K61736T) (phenylbutyric acid - UNII:7WY7YBI87E)	sodium phenylbutyrate	3 g

Inactive Ingredients	
Ingredient Name	**Strength**
Polyethylene glycol 6000 (UNII: 30IQX730WE)	
Silicon Dioxide (UNII: ETJ7Z6XBU4)	
Microcrystalline Cellulose (UNII: OP1R32D61U)	
Hypromellose 2910 (5 MPA.S) (UNII: R75537T0T4)	
Talc (UNII: 7SEV7J4R1U)	
DIMETHYLAMINOETHYL METHACRYLATE - BUTYL METHACRYLATE - METHYL METHACRYLATE COPOLYMER (UNII: 905HNO1SIH)	

Packaging				
#	**Item Code**	**Package Description**	**Marketing Start Date**	**Marketing End Date**
1	NDC:72542-003-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Part 2 of 3

OLPRUVA

sodium phenylbutyrate for suspension

Product Information	
Item Code (Source)	NDC:72542-367
Route of Administration	ORAL

Active Ingredient/Active Moiety		
Ingredient Name	**Basis of Strength**	**Strength**
sodium phenylbutyrate (UNII: NT6K61736T) (phenylbutyric acid - UNII:7WY7YBI87E)	sodium phenylbutyrate	3.67 g

Inactive Ingredients	
Ingredient Name	**Strength**
Polyethylene glycol 6000 (UNII: 30IQX730WE)	
Silicon Dioxide (UNII: ETJ7Z6XBU4)	

Microcrystalline Cellulose (UNII: OP1R32D61U)	
Hypromellose 2910 (5 MPA.S) (UNII: R75537T0T4)	
Talc (UNII: 7SEV7J4R1U)	
DIMETHYLAMINOETHYL METHACRYLATE - BUTYL METHACRYLATE - METHYL METHACRYLATE COPOLYMER (UNII: 905HNO1SIH)	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-367-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Part 3 of 3

MIX-AID

starch, corn for suspension

Product Information

Item Code (Source)	NDC:72542-000
Route of Administration	ORAL

Inactive Ingredients

Ingredient Name	Strength
Starch, Corn (UNII: O8232NY3SJ)	

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:72542-000-01	1 in 1 PACKET; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA214860	12/22/2022	

Labeler - Acer Therapeutics Inc. (079311509)

Establishment

Name	Address	ID/FEI	Business Operations
CH Chemie Uetikon GmbH		340717289	API MANUFACTURE(72542-200, 72542-300, 72542-400, 72542-500, 72542-600, 72542-667, 72542-002, 72542-003, 72542-367)

Establishment

Name	Address	ID/FEI	Business Operations
EMSL Analytical, Inc. DBA MPL Laboratories		080265475	ANALYSIS(72542-200, 72542-300, 72542-400, 72542-500, 72542-600, 72542-667, 72542-002, 72542-003, 72542-367)

Establishment

Name	Address	ID/FEI	Business Operations
Glatt Air Techniques Inc.		790220628	MANUFACTURE(72542-200, 72542-300, 72542-400, 72542-500, 72542-600, 72542-667, 72542-002, 72542-003, 72542-367)

Establishment

Name	Address	ID/FEI	Business Operations
Sharp Clinical Services LLC		079209266	PACK(72542-200, 72542-300, 72542-400, 72542-500, 72542-600, 72542-667, 72542-002, 72542-003, 72542-367)

Revised: 12/2022 Acer Therapeutics Inc.