

BACLOFEN- baclofen suspension

Wilshire Pharmaceuticals, Inc.

HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use Baclofen safely and effectively. See full prescribing information for baclofen.

Baclofen oral suspension
Initial U.S. Approval: 1977

INDICATIONS AND USAGE

- Baclofen is a gamma-aminobutyric acid (GABA-ergic) agonist indicated for the treatment of spasticity resulting from multiple sclerosis, particularly for the relief of flexor spasms and concomitant pain, clonus, and muscular rigidity. (1)
- Baclofen may also be of some value in patients with spinal cord injuries and other spinal cord diseases. (1)

Limitations of Use

Baclofen is not indicated in the treatment of skeletal muscle spasm resulting from rheumatic disorders. (1)

DOSAGE AND ADMINISTRATION

- Baclofen is a concentrated formulation. Verify the dose of the product prior to dispensing. (2.1)
- Initiate baclofen with a low dosage, preferably in divided doses, administered orally. Increase gradually based on clinical response and tolerability. (2.2)
- The maximum dosage is 80 mg daily (20 mg four times a day). (2.2)
- When discontinuing, reduce the dosage slowly. (2.3)

DOSAGE FORMS AND STRENGTHS

Oral Suspension: 25 mg per 5 mL (5 mg/mL) (3)

CONTRAINDICATIONS

- Hypersensitivity to baclofen (4)

WARNINGS AND PRECAUTIONS

- Abrupt discontinuation of baclofen has resulted in serious adverse reactions including death; therefore, reduce the dosage slowly when baclofen is discontinued. (5.1)
- Neonatal withdrawal symptoms can occur; gradually reduce the dosage and discontinue baclofen before delivery. (5.2)
- Baclofen can cause drowsiness and sedation. Patients should avoid the operation of automobiles or other dangerous machinery until they know how the drug affects them. Advise patients that the central nervous system effects of baclofen may be additive to those of alcohol and other CNS depressants. (5.3)
- Baclofen can cause exacerbation of the following: psychotic disorders, schizophrenia, or confusional states; autonomic dysreflexia; epilepsy. Use with caution in patients with these conditions. (5.5, 5.6, 5.7)

ADVERSE REACTIONS

- The most common (up to 15% or more) adverse reactions in patients were drowsiness, dizziness, and weakness. (6.1)

To report SUSPECTED ADVERSE REACTIONS, contact Wilshire Pharmaceuticals at 1-877-495-6856 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

USE IN SPECIFIC POPULATIONS

- Pregnancy: Based on animal data, may cause fetal harm. (8.1)
- Because baclofen is excreted unchanged through the kidneys it may be necessary to reduce the dosage in patients with impaired renal function. (8.6)

FULL PRESCRIBING INFORMATION: CONTENTS*

1 INDICATIONS AND USAGE

2 DOSAGE AND ADMINISTRATION

- 2.1 Important Information
- 2.2 Recommended Dosage
- 2.3 Administration Instructions
- 2.4 Discontinuation of Baclofen

3 DOSAGE FORMS AND STRENGTHS

4 CONTRAINDICATIONS

5 WARNINGS AND PRECAUTIONS

- 5.1 Adverse Reactions from Abrupt Withdrawal of Baclofen
- 5.2 Neonatal Withdrawal Symptoms
- 5.3 Drowsiness and Sedation
- 5.4 Poor Tolerability in Stroke Patients
- 5.5 Exacerbation of Psychotic Disorders, Schizophrenia, or Confusional States
- 5.6 Exacerbation of Autonomic Dysreflexia
- 5.7 Exacerbation of Epilepsy
- 5.8 Posture and Balance Effects
- 5.9 Ovarian Cysts

6 ADVERSE REACTIONS

- 6.1 Clinical Trials Experience

7 DRUG INTERACTIONS

- 7.1 CNS Depressants and Alcohol

8 USE IN SPECIFIC POPULATIONS

- 8.1 Pregnancy
- 8.2 Lactation
- 8.4 Pediatric Use
- 8.5 Geriatric Use
- 8.6 Renal Impairment

10 OVERDOSAGE

- 10.1 Symptoms of Baclofen Overdose
- 10.2 Treatment for Overdose

11 DESCRIPTION

12 CLINICAL PHARMACOLOGY

- 12.1 Mechanism of Action
- 12.2 Pharmacodynamics
- 12.3 Pharmacokinetics

13 NONCLINICAL TOXICOLOGY

- 13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

14 CLINICAL STUDIES

16 HOW SUPPLIED/STORAGE AND HANDLING

- 16.1 How Supplied
- 16.2 Storage and Handling

17 PATIENT COUNSELING INFORMATION

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

FULL PRESCRIBING INFORMATION

1 INDICATIONS AND USAGE

Baclofen is indicated for the treatment of spasticity resulting from multiple sclerosis, particularly for the relief of flexor spasms and concomitant pain, clonus, and muscular rigidity.

Baclofen may also be of some value in patients with spinal cord injuries and other spinal cord diseases.

Limitations of Use

Baclofen is not indicated in the treatment of skeletal muscle spasm resulting from rheumatic disorders.

2 DOSAGE AND ADMINISTRATION

2.1 Important Information

Baclofen is a concentrated formulation. Verify the strength and the dose of the product prior to prescribing, dispensing, and administering.

2.2 Recommended Dosage

Initiate baclofen with a low dosage, preferably in divided doses, administered orally. The following gradually increasing dosage regimen is suggested, but should be adjusted based on clinical response and tolerability:

- 1 mL (5 mg) three times a day for three days
- 2 mL (10 mg) three times a day for three days
- 3 mL (15 mg) three times a day for three days
- 4 mL (20 mg) three times a day for three days

Additional increases may be necessary up to the maximum recommended dosage of 80 mg daily [4 mL (20 mg) four times a day].

2.3 Administration Instructions

Shake well baclofen oral suspension before administration. Discard unused portion 2 months after first opening.

A calibrated measuring device is recommended to measure and deliver the prescribed dose accurately. A household teaspoon or tablespoon is not an adequate measuring device.

2.4 Discontinuation of Baclofen

When discontinuing baclofen, reduce the dosage slowly and avoid abrupt withdrawal from the drug to help minimize the risk of adverse reactions [see *Warnings and Precautions* (5.1)].

3 DOSAGE FORMS AND STRENGTHS

Oral Suspension: 25 mg per 5 mL (5 mg/mL) baclofen as a concentrated orange to yellow- colored, grape-flavored suspension.

4 CONTRAINDICATIONS

Baclofen oral suspension is contraindicated in patients with hypersensitivity to baclofen.

5 WARNINGS AND PRECAUTIONS

5.1 Adverse Reactions from Abrupt Withdrawal of Baclofen

Abrupt discontinuation of baclofen, regardless of the cause, has resulted in adverse reactions that include hallucinations, seizures, high fever, altered mental status, exaggerated rebound spasticity, and muscle rigidity, that in rare cases has advanced to rhabdomyolysis, multiple organ-system failure, and death. Therefore, reduce the dosage slowly when baclofen is discontinued, unless the clinical situation justifies a rapid withdrawal.

5.2 Neonatal Withdrawal Symptoms

Withdrawal symptoms in neonates whose mothers were treated with oral baclofen throughout pregnancy have been reported starting hours to days after delivery. The symptoms of withdrawal in these infants have included increased muscle tone, tremor, jitteriness, and seizure. If the potential benefit justifies the potential risk to the fetus and baclofen is continued during pregnancy, gradually reduce the dosage and discontinue baclofen before delivery. If slow withdrawal is not feasible, advise the parents or caregivers of the exposed neonate of the potential for neonatal withdrawal.

5.3 Drowsiness and Sedation

Drowsiness and sedation have been reported in up to 63% of patients taking baclofen, the active ingredient in baclofen [see *Adverse Reactions* (6.1)]. Patients should avoid operation of automobiles or other dangerous machinery and activities made hazardous by decreased alertness when starting baclofen or increasing the dose until they know how the drug affects them. Advise patients that the central nervous system depressant effects of baclofen may be additive to those of alcohol and other CNS depressants.

5.4 Poor Tolerability in Stroke Patients

Baclofen should be used with caution in patients who have had a stroke. Baclofen has not significantly benefited patients with stroke. These patients have also shown poor tolerability to the drug.

5.5 Exacerbation of Psychotic Disorders, Schizophrenia, or Confusional

States

Baclofen should be used with caution in patients suffering from psychotic disorders, schizophrenia, or confusional states. If treated with baclofen, these patients should be kept under careful surveillance because exacerbations of these conditions have been observed with oral baclofen administration.

5.6 Exacerbation of Autonomic Dysreflexia

Baclofen should be used with caution in patients with a history of autonomic dysreflexia. The presence of nociceptive stimuli or abrupt withdrawal of baclofen may cause an autonomic dysreflexic episode.

5.7 Exacerbation of Epilepsy

Baclofen should be used with caution in patients with epilepsy. Deterioration in seizure control has been reported in patients taking baclofen.

5.8 Posture and Balance Effects

Baclofen should be used with caution in patients where spasticity is utilized to sustain upright posture and balance in locomotion or whenever spasticity is utilized to obtain increased function.

5.9 Ovarian Cysts

A dose-related increase in incidence of ovarian cysts was observed in female rats treated chronically with oral baclofen. Ovarian cysts have been found by palpation in about 4% of the multiple sclerosis patients who were treated with oral baclofen for up to one year. In most cases, these cysts disappeared spontaneously while patients continued to receive the drug. Ovarian cysts are estimated to occur spontaneously in approximately 1% to 5% of the normal female population.

6 ADVERSE REACTIONS

The following clinically significant adverse reactions are described elsewhere in the labeling:

- Adverse Reactions from Abrupt Withdrawal of Baclofen *[see Warnings and Precautions (5.1)]*
- Neonatal Withdrawal Symptoms *[see Warnings and Precautions (5.2)]*
- Drowsiness and Sedation *[see Warnings and Precautions (5.3)]*
- Poor Tolerability in Stroke Patients *[see Warnings and Precautions (5.4)]*
- Exacerbation of Psychotic Disorders, Schizophrenia, or Confusional States *[see Warnings and Precautions (5.5)]*
- Exacerbation of Autonomic Dysreflexia *[see Warnings and Precautions (5.6)]*
- Exacerbation of Epilepsy *[see Warnings and Precautions (5.7)]*
- Posture and Balance Effects *[see Warnings and Precautions (5.8)]*
- Ovarian Cysts *[see Warnings and Precautions (5.9)]*

6.1 Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction

rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

The most common adverse reaction is transient drowsiness. In one controlled study of 175 patients, transient drowsiness was observed in 63% of those receiving baclofen compared to 36% of those in the placebo group. Other common adverse reactions (up to 15%) are dizziness and weakness. Adverse reactions with a frequency of $\geq 1\%$ are listed in Table 1.

Table 1. Common ($\geq 1\%$) Adverse Reactions in Patients Treated with Baclofen for Spasticity

ADVERSE REACTION	PERCENT
Drowsiness	10-63%
Dizziness	5-15%
Weakness	5-15%
Nausea	4-12%
Confusion	1-11%
Hypotension	0-9%
Headache	4-8%
Insomnia	2-7%
Constipation	2-6%
Urinary Frequency	2-6%
Fatigue	2-4%

The following adverse reactions not included in Table 1, classified by body system, were also reported:

Neuropsychiatric: euphoria, excitement, depression, hallucinations, paresthesia, muscle pain, tinnitus, slurred speech, coordination disorder, tremor, rigidity, dystonia, ataxia, blurred vision, nystagmus, strabismus, miosis, mydriasis, diplopia, dysarthria, epileptic seizure

Cardiovascular: dyspnea, palpitation, chest pain, syncope

Gastrointestinal: dry mouth, anorexia, taste disorder, abdominal pain, vomiting, diarrhea, and positive test for occult blood in stool

Genitourinary: enuresis, urinary retention, dysuria, impotence, inability to ejaculate, nocturia, hematuria

Other: rash, pruritus, ankle edema, excessive perspiration, weight gain, nasal congestion

The following laboratory tests have been found to be abnormal in patients receiving baclofen: increased SGOT, elevated alkaline phosphatase, and elevation of blood sugar.

7 DRUG INTERACTIONS

7.1 CNS Depressants and Alcohol

Baclofen can cause CNS depression, including drowsiness and sedation, which may be additive when used concomitantly with other CNS depressants or alcohol [see *Warnings and Precautions* (5.3)].

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Risk Summary

There are no adequate data on the risk of major birth defects, miscarriages, or other maternal adverse outcomes associated with the use of baclofen in pregnant women. There are adverse effects on fetal outcomes associated with withdrawal from baclofen after delivery (see *Clinical Considerations*). Oral administration of baclofen to pregnant rats resulted in an increased incidence of fetal structural abnormalities at a dose that was also associated with maternal toxicity. The background risk of major birth defects and miscarriage for the indicated population is unknown. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2-4% and 15-20%, respectively.

Clinical Considerations

Fetal/Neonatal Adverse Reactions

Baclofen may increase the risk of late-onset neonatal withdrawal symptoms [see *Warnings and Precautions* (5.2)].

Data

Animal Data

Baclofen given orally has been shown to increase the incidence of omphaloceles (ventral hernias) in fetuses of rats given approximately 13 times on a mg/kg basis, or 3 times on a mg/m² basis, the maximum oral dose recommended for human use; this dose also caused reductions in food intake and weight gain in the dams. This abnormality was not seen in mice or rabbits.

8.2 Lactation

Risk Summary

At recommended oral doses, baclofen is present in human milk. There are no human data on the effects of baclofen on milk production. Withdrawal symptoms can occur in breastfed infants when maternal administration of baclofen is stopped, or when breastfeeding is stopped [see *Warnings and Precautions* (5.2)]. There are no adequate data on other effects of baclofen on the breastfed infant.

The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for baclofen and any potential adverse effects on the

breastfed infant from baclofen or from the underlying maternal condition.

8.4 Pediatric Use

Safety and effectiveness in pediatric patients below the age of 12 have not been established.

8.5 Geriatric Use

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. This drug is known to be substantially excreted by the kidney, and the risk of adverse reactions to this drug may be greater in patients with impaired renal function. Because elderly patients are more likely to have decreased renal function, care should be taken in dose selection, and it may be useful to monitor renal function [*see Use in Specific Populations (8.6)*].

8.6 Renal Impairment

Because baclofen is primarily excreted unchanged through the kidneys, baclofen should be given with caution to patients with renal impairment, and it may be necessary to reduce the dosage.

10 OVERDOSAGE

10.1 Symptoms of Baclofen Overdose

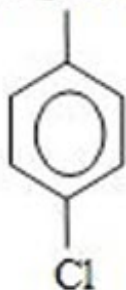
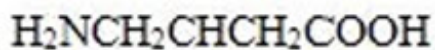
With overdose of baclofen, patients may present in coma or with progressive drowsiness, lightheadedness, dizziness, somnolence, accommodation disorders, respiratory depression, seizures, or hypotonia progressing to loss of consciousness.

10.2 Treatment for Overdose

The treatment of baclofen overdose includes gastric decontamination, maintaining an adequate airway and respirations.

11 DESCRIPTION

Baclofen oral suspension is a gamma-aminobutyric acid (GABA-ergic) agonist available as 25 mg per 5 mL (5 mg/mL) suspension for oral administration. Its chemical name is 4-amino-3-(4-chlorophenyl)-butanoic acid, and its structural formula is:



Molecular formula is $\text{C}_{10}\text{H}_{12}\text{ClNO}_2$.

Molecular Weight is 213.66 g/mol.

Baclofen USP is a white to off-white, odorless or practically odorless crystalline powder. It is slightly soluble in water, very slightly soluble in methanol, and insoluble in chloroform.

The baclofen oral suspension inactive ingredients are: artificial grape flavor, citric acid anhydrous, D&C yellow No. 10, FD&C red No. 40, hydroxyethyl cellulose, propylene glycol, purified water, simethicone emulsion, sodium benzoate, and sucralose.

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

The precise mechanism of action of baclofen is not fully understood. Baclofen inhibits both monosynaptic and polysynaptic reflexes at the spinal level, possibly by decreasing excitatory neurotransmitter release from afferent terminals, although actions at supraspinal sites may also occur and contribute to its clinical effect. Baclofen is a structural analog of the inhibitory neurotransmitter gamma-aminobutyric acid (GABA) and may exert its effects by stimulation of the GABA_B receptor subtype.

12.2 Pharmacodynamics

Baclofen has been shown to have general CNS depressant properties, as indicated by the production of sedation with tolerance, somnolence, ataxia, and respiratory and cardiovascular depression [see *Warnings and Precautions* (5.3), *Adverse Reactions* (6.1), and *Overdosage* (10.1)].

12.3 Pharmacokinetics

A pharmacokinetic study in healthy adult male and female subjects under fasting conditions at 20 mg dose level demonstrated similar bioavailability for baclofen oral suspension and oral tablets.

Absorption

The peak plasma concentrations of baclofen were achieved in about 1 hour from administration of baclofen oral suspension in the fasted state, and the apparent elimination half-life is about 5.6 hours.

Effect of Food

Administration of baclofen with a high-fat meal resulted in 9% decrease in AUC and 33% decrease in C_{\max} compared to the fasted state.

Elimination

Baclofen is excreted primarily by the kidney in unchanged form, and there is relatively large intersubject variation in absorption and/or elimination.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

Carcinogenesis

No increase in tumors was seen in rats receiving baclofen orally for two years at approximately 30 to 60 times on a mg/kg basis, or 10 to 20 times on a mg/m² basis, the maximum oral dose recommended for human use.

Mutagenesis

Genetic toxicology assays have not been conducted for baclofen.

Impairment of Fertility

Studies to evaluate the effects of baclofen on fertility have not been conducted.

14 CLINICAL STUDIES

The efficacy of baclofen is based upon a bioavailability study in healthy adults comparing baclofen oral tablets to baclofen [see *Clinical Pharmacology* (12.3)].

16 HOW SUPPLIED/STORAGE AND HANDLING

16.1 How Supplied

Baclofen oral suspension contains 25 mg per 5 mL (5 mg/mL) baclofen. It is a concentrated orange to yellow-colored, grape-flavored suspension and is supplied in high-density polyethylene (HDPE) bottles with white, polypropylene, child-resistant closures with a foam liner and heat induction layered inner seal.

120 mL, NDC 52536-600-11

300 mL, NDC 52536-600-12

16.2 Storage and Handling

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

Discard unused portion 2 months after first opening.

17 PATIENT COUNSELING INFORMATION

Administration Instructions

Inform patients that baclofen is a concentrated formulation. Instruct patients or caregivers to use an oral dosing syringe and not to use a household teaspoon to correctly measure the prescribed amount of medication. Inform patients that oral dosing syringes may be obtained from their pharmacy. Instruct patients to shake before using [*see Dosage and Administration (2.1, 2.3)*].

Risks Related to Sudden Withdrawal of Baclofen

Advise patients and caregivers not to discontinue use of baclofen without consulting with their healthcare provider because sudden withdrawal of baclofen can result in serious complications that include hallucinations, seizures, high fever, confusion, muscle stiffness, multiple organ-system failure, and death [*see Warnings and Precautions (5.1)*]. Inform patients that early symptoms of baclofen withdrawal may include increased spasticity, itching, and tingling of extremities.

Neonatal Withdrawal Symptoms

Advise patients to notify their healthcare provider if they are pregnant, plan to become pregnant, or plan to breastfeed [*see Warnings and Precautions (5.2) and Use in Specific Populations (8.2)*].

Increased Risk of Drowsiness with Alcohol and Other CNS Depressants

Advise patients that baclofen may cause drowsiness, and that they should avoid the operation of automobiles or other dangerous machinery, or activities made hazardous by decreased alertness when starting baclofen or increasing the dose until they know how the drug affects them [*see Warnings and Precautions (5.3)*]. Inform patients and their caregivers that the drowsiness associated with baclofen use can be worsened by alcohol and other CNS depressants. Advise patients to read all medicine labels carefully, and to tell their healthcare provider about all prescription and nonprescription drugs they may use.

Storage

Instruct patients to store baclofen at room temperature and to discard unused portion 2 months after first opening [*see How Supplied/Storage and Handling (16.2)*].

Manufactured for:

Wilshire Pharmaceuticals, Inc.
Atlanta, GA 30328 USA

PN: PI-00729

REV: 01

PRINCIPAL DISPLAY PANEL - Bottle Label



Bottle Label

NDC 52536-600-11

Rx Only

**Baclofen
Oral Suspension**

25 mg per 5 mL

(5 mg/mL)

Concentrated Formulation

ATTENTION: This is a **concentrated** baclofen formulation of 25 mg/5 mL (5 mg/mL).

Manufactured for:

WILSHIRE®

PHARMACEUTICALS, INC.

Atlanta, GA 30328 USA

120 mL

**KEEP THIS AND ALL
MEDICATIONS OUT OF THE
REACH OF CHILDREN**

Each mL contains 5 mg of baclofen USP

Recommended Dosage:

See prescribing information.

Store at 20°C to 25°C (68°F to 77°F)

excursions permitted from 15°C to 30°C (59°F to 86°F)

[see USP Controlled Room Temperature].

Ensure tamper evident seal on the bottle is present and intact before using.

Date of first opening ____ / ____ / ____

Discard unused portion 2 months after first opening.

Part #: ASSY00721

REV 01 02/23

SHAKE BEFORE USING

BACLOFEN baclofen suspension				
Product Information				
Product Type		HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:52536-600
Route of Administration		ORAL		
Active Ingredient/Active Moiety				
Ingredient Name			Basis of Strength	Strength
BACLOFEN (UNII: H789N3FKE8) (BACLOFEN - UNII:H789N3FKE8)			BACLOFEN	5 mg in 1 mL
Inactive Ingredients				
Ingredient Name				Strength
ANHYDROUS CITRIC ACID (UNII: XF417D3PSL)				
D&C YELLOW NO. 10 (UNII: 35SW5USQ3G)				
FD&C RED NO. 40 (UNII: WZB9127XOA)				
HYDROXYETHYL CELLULOSE, UNSPECIFIED (UNII: T4V6TWG28D)				
PROPYLENE GLYCOL (UNII: 6DC9Q167V3)				
WATER (UNII: 059QF0KO0R)				
DIMETHICONE (UNII: 92RU3N3Y1O)				
SILICON DIOXIDE (UNII: ETJ7Z6XBU4)				
SODIUM BENZOATE (UNII: OJ245FE5EU)				
SUCRALOSE (UNII: 96K6UQ3ZD4)				
Product Characteristics				
Color			Score	
Shape			Size	
Flavor		GRAPE	Imprint Code	
Contains				
Packaging				
#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:52536-600-11	1 in 1 CARTON	04/01/2023	
1		120 mL in 1 BOTTLE; Type 0: Not a Combination Product		
2	NDC:52536-600-12	1 in 1 CARTON	04/01/2023	
2		300 mL in 1 BOTTLE; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA authorized generic	NDA215602	04/01/2023	

Labeler - Wilshire Pharmaceuticals, Inc. (078657245)

Revised: 2/2023

Wilshire Pharmaceuticals, Inc.