LORAZEPAM - lorazepam tablet RedPharm Drug Inc.

LORAZEPAM tablet

PRECAUTIONS

General

Acetaminophen and codeine phosphate tablets should be prescribed with caution in certain special-risk patients, such as the elderly or debilitated, and those with severe impairment of renal or hepatic function, head injuries, elevated intracranial pressure, acute abdominal conditions, hypothyroidism, urethral stricture, Addison's disease, or prostatic hypertrophy.

Ultra-Rapid Metabolizers of Codeine

Some individuals may be ultra-rapid metabolizers due to a specific CYP2D6*2x2 genotype. These individuals convert codeine into its active metabolite, morphine, more rapidly and completely than other people. This rapid conversion results in higher than expected serum morphine levels. Even at labeled dosage regiments, individuals who are ultra-rapid metabolizers may experience overdose symptoms such as extreme sleepiness, confusion or shallow breathing.

The prevalence of this CYP2D6 phenotype varies widely and has been estimated at 0.5 to 1% in Chinese and Japanese, 0.5 to 1% in Hispanics, 1 to 10% in Caucasians, 3% in African Americans, and 16 to 28% in North Africans, Ethiopians and Arabs. Data is not available for other ethnic groups.

When physicians prescribe codeine-containing drugs, they should choose the lowest effective dose for the shortest period of time and should inform their patients about these risks and the signs of morphine overdose (see **PRECAUTIONS**, **Nursing Mothers**).

Information for Patients

Caution patients that some people have a variation in a liver enzyme and change codeine into morphine more rapidly and completely than other people. These people are ultra-rapid metabolizers and are more likely to have higher-than-normal levels of morphine in their blood after taking codeine which can result in overdose symptoms such as extreme sleepiness, confusion, or shallow breathing. In most cases, it is unknown if someone is an ultra-rapid codeine metabolizer.

Nursing mothers taking codeine can also have higher morphine levels in their breast milk if they are ultra-rapid metabolizers. These higher levels of morphine in breast milk may lead to life-threatening or fatal side effects in nursing babies. Instruct nursing mothers to watch for signs of morphine toxicity in their infants including increased sleepiness (more than usual), difficulty breastfeeding, breathing difficulties, or limpness. Instruct nursing mothers to talk to the baby's doctor immediately if they notice these signs and, if they cannot reach the doctor right away, to take the baby to an emergency room or call 911 (or local emergency services).

Codeine may impair mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery. Such tasks should be avoided while taking this product.

Alcohol and other CNS depressants may produce an additive CNS depression, when taken with this combination product, and should be avoided.

Codeine may be habit-forming. Patients should take the drug only for as long as it is prescribed, in the amounts prescribed, and no more frequently than prescribed.

Laboratory Tests

In patients with severe hepatic or renal disease, effects of therapy should be monitored with serial liver and/or renal function tests.

Drug Interactions

This drug may enhance the effects of: other narcotic analgesics, alcohol, general anesthetics, tranquilizers such as chlordiazepoxide, sedative-hypnotics, or other CNS depressants, causing increased CNS depression.

Drug/Laboratory Test Interactions

Codeine may increase serum amylase levels.

Acetaminophen may produce false-positive test results for urinary 5-hydroxyindoleacetic acid.

Carcinogenesis, Mutagenesis, Impairment of Fertility

No adequate studies have been conducted in animals to determine whether acetaminophen and codeine have a potential for carcinogenesis or mutagenesis. No adequate studies have been conducted in animals to determine whether acetaminophen has a potential for impairment of fertility.

Acetaminophen and codeine have been found to have no mutagenic potential using the Ames Salmonella-Microsomal Activation test, the Basc test on Drosophila germ cells, and the Micronucleus test on mouse bone marrow.

Pregnancy

Teratogenic Effects

Pregnancy category C

Codeine

A study in rats and rabbits reported no teratogenic effect of codeine administered during the period of organogenesis in doses ranging from 5 to 120 mg/kg. In the rat, doses at the 120 mg/kg level, in the toxic range for the adult animal, were associated with an increase in embryo resorption at the time of implantation. In another study a single 100 mg/kg dose of codeine administered to pregnant mice reportedly resulted in delayed ossification in the offspring.

There are no adequate and well-controlled studies in pregnant women. Acetaminophen and codeine phosphate should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nonteratogenic Effects

Dependence has been reported in newborns whose mothers took opiates regularly during pregnancy. Withdrawal signs include irritability, excessive crying, tremors, hyperreflexia, fever, vomiting, and diarrhea. These signs usually appear during the first few days of life.

Labor and Delivery

Narcotic analgesics cross the placental barrier. The closer to delivery and the larger the dose used, the greater the possibility of respiratory depression in the newborn. Narcotic analgesics should be avoided during labor if delivery of a premature infant is anticipated. If the mother has received narcotic analgesics during labor, newborn infants should be observed closely for signs of respiratory depression. Resuscitation may be required (see **OVERDOSAGE**). The effect of codeine, if any, on the later growth, development, and functional maturation of the child is unknown.

Nursing Mothers

Acetaminophen is excreted in breast milk in small amounts, but the significance of its effects on nursing infants is not known. Because of the potential for serious adverse reactions in nursing infants from acetaminophen, a decision should be made whether to discontinue the drug, taking into account the importance of the drug to the mother.

Codeine is secreted into human milk. In women with normal codeine metabolism (normal CYP2D6 activity), the amount of codeine secreted into human milk is low and dose-dependent. Despite the common use of codeine products to manage postpartum pain, reports of adverse events in infants are rare. However, some women are ultra-rapid metabolizers of codeine. These women achieve higher-than-expected serum levels of codeine's active metabolite, morphine, leading to higher-than-expected levels of morphine in breast milk and potentially dangerously high serum morphine levels in their breastfed infants. Therefore, maternal use of codeine can potentially lead to serious adverse reactions, including death, in nursing infants.

The prevalence of this CYP2D6 phenotype varies widely and has been estimated at 0.5 to 1% in Chinese and Japanese, 0.5 to 1% in Hispanics, 1 to 10% in Caucasians, 3% in African Americans, and 16 to 28% in North Africans, Ethiopians and Arabs. Data is not available for other ethnic groups.

The risk of infant exposure to codeine and morphine through breast milk should be weighed against the benefits of breastfeeding for both the mother and baby. Caution should be exercised when codeine is administered to a nursing woman. If a codeine containing product is selected, the lowest dose should be prescribed for the shortest period of time to achieve the desired clinical effect. Mothers using codeine should be informed about when to seek immediate medical care and how to identify the signs and symptoms of neonatal toxicity, such as drowsiness or sedation, difficulty breastfeeding, breathing difficulties, and decreased tone, in their baby. Nursing mothers who are ultra-rapid metabolizers may also experience overdose symptoms such as extreme sleepiness, confusion or shallow breathing. Prescribers should closely monitor mother-infant pairs and notify treating pediatricians about the use of codeine during breastfeeding (see **PRECAUTIONS**, **General**, *Ultra-Rapid Metabolizers of Codeine*).

DRUG ABUSE AND DEPENDENCE

Controlled Substance

Acetaminophen and codeine phosphate tablets are classified as a Schedule III controlled substance.

Abuse and Dependence

Codeine can produce drug dependence of the morphine type and, therefore, has the potential for being abused. Psychological dependence, physical dependence, and tolerance may develop upon repeated administration and it should be prescribed and administered with the same degree of caution appropriate to the use of other oral narcotic medications.

DESCRIPTION

Lorazepam, an antianxiety agent, has the chemical formula, 7-chloro-5-(*o*-chlorophenyl)-1,3-dihydro-3-hydroxy-2H-1,4-benzodiazepin-2-one:

It is a nearly white powder almost insoluble in water. Each lorazepam tablet, to be taken orally, contains 0.5 mg, 1 mg or 2 mg of lorazepam. The inactive ingredients present are lactose, magnesium stearate, microcrystalline cellulose and polacrilin potassium.

CLINICAL PHARMACOLOGY

Studies in healthy volunteers show that in single high doses lorazepam has a tranquilizing action on the central nervous system with no appreciable effect on the respiratory or cardiovascular systems.

Lorazepam is readily absorbed with an absolute bioavailability of 90 percent. Peak concentrations in plasma occur approximately 2 hours following administration. The peak plasma level of lorazepam from a 2 mg dose is approximately 20 mg/mL.

The mean half-life of unconjugated lorazepam in human plasma is about 12 hours and for its major metabolite, lorazepam glucuronide, about 18 hours. At clinically relevant concentrations, lorazepam is approximately 85% bound to plasma proteins. Lorazepam is rapidly conjugated at its 3-hydroxy group into lorazepam glucuronide which is then excreted in the urine. Lorazepam glucuronide has no demonstrable CNS activity in animals.

The plasma levels of lorazepam are proportional to the dose given. There is no evidence of accumulation of lorazepam on administration up to six months.

Studies comparing young and elderly subjects have shown that advancing age does not have a significant effect on the pharmacokinetics of lorazepam. However, in one study involving single intravenous doses of 1.5 to 3 mg of lorazepam injection, mean total body clearance of lorazepam decreased by 20% in 15 elderly subjects of 60 to 84 years of age compared to that in 15 younger subjects of 19 to 38 years of age.

INDICATIONS AND USAGE

Lorazepam is indicated for the management of anxiety disorders or for the short-term relief of the symptoms of anxiety or anxiety associated with depressive symptoms. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic.

The effectiveness of lorazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

CONTRAINDICATIONS

Lorazepam is contraindicated in patients with

- hypersensitivity to be nzodiazepines or to any components of the formulation.

- acute narrow-angle glaucoma.

WARNINGS

Pre-existing depression may emerge or worsen during use of benzodiazepines including lorazepam. Lorazepam is not recommended for use in patients with a primary depressive disorder or psychosis.

Use of benzodiazepines, including lorazepam, both used alone and in combination with other CNS depressants, may lead to potentially fatal respiratory depression. (See **PRECAUTIONS**, **Clinically Significant Drug Interactions**)

Use of benzodiazepines, including lorazepam, may lead to physical and psychological dependence.

As with all patients on CNS-depressant drugs, patients receiving lorazepam should be warned not to operate dangerous machinery or motor vehicles and that their tolerance for alcohol and other CNS depressants will be diminished.

Physical And Psychological Dependence

The use of benzodiazepines, including lorazepam, may lead to physical and psychological dependence. The risk of dependence increases with higher doses and longer term use and is further increased in patients with a history of alcoholism or drug abuse or in patients with significant personality disorders. The dependence potential is reduced when lorazepam is used at the appropriate dose for short-term treatment. Addiction-prone individuals (such as drug addicts or alcoholics) should be under careful surveillance when receiving lorazepam or other psychotropic agents.

In general, benzodiazepines should be prescribed for short periods only (e.g. 2- 4 weeks). Extension of the treatment period should not take place without reevaluation of the need for continued therapy. Continuous long-term use of product is not recommended. Withdrawal symptoms (e.g. rebound insomnia) can appear following cessation of recommended doses after as little as one week of therapy. Abrupt discontinuation of product should be avoided and a gradual dosage-tapering schedule followed after extended therapy.

Abrupt termination of treatment may be accompanied by withdrawal symptoms. Symptoms reported following discontinuation of benzodiazepines include headache, anxiety, tension, depression, insomnia, restlessness, confusion, irritability, sweating, rebound phenomena, dysphoria, dizziness, derealization, depersonalization, hyperacusis, numbness/tingling of extremities, hypersensitivity to light, noise, and physical contact/perceptual changes, involuntary movements, nausea, vomiting, diarrhea, loss of appetite, hallucinations/delirium, convulsions/seizures, tremor, abdominal cramps, myalgia, agitation, palpitations, tachycardia, panic attacks, vertigo, hyperreflexia, short-term memory loss, and hyperthermia. Convulsions/seizures may be more common in patients with pre-existing seizure disorders or who are taking other drugs that lower the convulsive threshold such as antidepressants.

There is evidence that tolerance develops to the sedative effects of benzodiazepines.

Lorazepam may have abuse potential, especially in patients with a history of drug and/or alcohol abuse.

PRECAUTIONS

In patients with depression, a possibility for suicide should be borne in mind; benzodiazepines should not be used in such patients without adequate anti-depressant therapy.

Lorazepam should be used with caution in patients with compromised respiratory function (e.g. COPD, sleep apnea syndrome).

Elderly or debilitated patients may be more susceptible to the sedative effects of lorazepam. Therefore, these patients should be monitored frequently and have their dosage adjusted carefully according to patient response; the initial dosage should not exceed 2 mg.

Paradoxical reactions have been occasionally reported during benzodiazepine use. Such reactions may be more likely to occur in children and the elderly. Should these occur, use of the drug should be discontinued.

The usual precautions for treating patients with impaired renal and hepatic function should be observed. As with all benzodiazepines, the use of lorazepam may worsen hepatic encephalopathy; therefore, lorazepam should be used with caution in patients with severe hepatic insufficiency and/or encephalopathy. Dosage for patients with severe hepatic insufficiency should be adjusted carefully according to patient response; lower doses may be sufficient in such patients.

In patients where gastrointestinal or cardiovascular disorders coexist with anxiety, it should be noted that lorazepam has not been shown to be of significant benefit in treating the gastrointestinal or cardiovascular component.

Esophageal dilation occurred in rats treated with lorazepam for more than one year at 6 mg/kg/day. The no-effect dose was 1.25 mg/kg/day (approximately 6 times the maximum human therapeutic dose of 10 mg per day). The effect was reversible only when the treatment was withdrawn within two months of first observation of the phenomenon. The clinical significance of this is unknown. However, use of lorazepam for prolonged periods and in geriatric patients requires caution, and there should be frequent monitoring for symptoms of upper G.I. disease.

Safety and effectiveness of lorazepam in children of less than 12 years have not been established.

Information for Patients

To assure the safe and effective use of lorazepam, patients should be informed that, since benzodiazepines may produce psychological and physical dependence, it is advisable that they consult with their physician before either increasing the dose or abruptly discontinuing this drug.

Essential Laboratory Tests

Some patients on lorazepam have developed leukopenia, and some have had elevations of LDH. As with other benzodiazepines, periodic blood counts and liver-function tests are recommended for patients on long-term therapy.

Clinically Significant Drug Interactions

The benzodiazepines, including lorazepam, produce increased CNS-depressant effects when administered with other CNS depressants such as alcohol, barbiturates, antipsychotics, sedative/hypnotics, anxiolytics, antidepressants, narcotic analgesics, sedative antihistamines, anticonvulsants, and anesthetics.

Concomitant use of clozapine and lorazepam may produce marked sedation, excessive salivation, hypotension, ataxia, delirium, and respiratory arrest.

Concurrent administration of lorazepam with valproate results in increased plasma concentrations and reduced clearance of lorazepam. Lorazepam dosage should be reduced to approximately 50% when coadministered with valproate.

Concurrent administration of lorazepam with probenecid may result in a more rapid onset or prolonged effect of lorazepam due to increased half-life and decreased total clearance. Lorazepam dosage needs to be reduced by approximately 50% when coadministered with probenecid.

The effects of probenecid and valproate on lorazepam may be due to inhibition of glucuronidation.

Administration of the ophylline or aminophylline may reduce the sedative effects of benzodiazepines, including lorazepam.

Carcinogenesis And Mutagenesis

No evidence of carcinogenic potential emerged in rats during an 18-month study with lorazepam. No studies regarding mutagenesis have been performed.

Pregnancy

Reproductive studies in animals were performed in mice, rats, and two strains of rabbits. Occasional anomalies (reduction of tarsals, tibia, metatarsals, malrotated limbs, gastroschisis, malformed skull, and microphthalmia) were seen in drug-treated rabbits without relationship to dosage. Although all of these anomalies were not present in the concurrent control group, they have been reported to occur randomly in historical controls. At doses of 40 mg/kg and higher, there was evidence of fetal resorption and increased fetal loss in rabbits which was not seen at lower doses.

The clinical significance of the above findings is not known. However, an increased risk of congenital malformations associated with the use of minor tranquilizers (chlordiazepoxide, diazepam, and meprobamate) during the first trimester of pregnancy has been suggested in several studies. Because the use of these drugs is rarely a matter of urgency, the use of lorazepam during this period should be avoided. The possibility that a woman of childbearing potential may be pregnant at the time of institution of therapy should be considered. Patients should be advised that if they become pregnant, they should communicate with their physician about the desirability of discontinuing the drug.

In humans, blood levels obtained from umbilical cord blood indicate placental transfer of lorazepam and lorazepam glucuronide. Infants of mothers who ingested benzodiazepines for several weeks or more preceding delivery have been reported to have withdrawal symptoms during the postnatal period. Symptoms such as hypoactivity, hypotonia, hypothermia, respiratory depression, apnea, feeding problems, and impaired metabolic response to cold stress have been reported in neonates born of mothers who have received benzodiazepines during the late phase of pregnancy or at delivery.

Nursing Mothers

Lorazepam has been detected in human breast milk; therefore, it should not be administered to breast-feeding women, unless the expected benefit to the woman outweighs the potential risk to the infant.

Sedation and inability to suckle have occurred in neonates of lactating mothers taking benzodiazepines. Infants of lactating mothers should be observed for pharmacological effects (including sedation and irritability).

Geriatric Use

Clinical studies of lorazepam generally were not adequate to determine whether subjects aged 65 and over respond differently than younger subjects; however, the incidence of sedation and unsteadiness was observed to increase with age (see **ADVERSE REACTIONS**).

Age does not appear to have a significant effect on lorazepam kinetics (see **CLINICAL PHARMACOLOGY**).

Clinical circumstances, some of which may be more common in the elderly, such as hepatic or renal impairment, should be considered. Greater sensitivity (e.g., sedation) of some older individuals cannot be ruled out. In general, dose selection for an elderly patient should be cautious, and lower doses may be sufficient in these patients (see **DOSAGE AND ADMINISTRATION**).

ADVERSE REACTIONS

Most adverse reactions to benzodiazepines, including CNS effects and respiratory depression, are dose dependent, with more severe effects occurring with high doses.

In a sample of about 3500 patients treated for anxiety, the most frequent adverse reaction to lorazepam was sedation (15.9%), followed by dizziness (6.9%), weakness (4.2%), and unsteadiness (3.4%). The incidence of sedation and unsteadiness increased with age.

Other adverse reactions to benzodiazepines, including lorazepam are fatigue, drowsiness, amnesia, memory impairment, confusion, disorientation, depression, unmasking of depression, disinhibition, euphoria, suicidal ideation/attempt, ataxia, asthenia, extrapyramidal symptoms, convulsions/seizures tremor, vertigo, eye-function/visual disturbance (including diplopia and blurred vision), dysarthria/slurred speech, change in libido, impotence, decreased orgasm; headache, coma; respiratory depression, apnea, worsening of sleep apnea, worsening of obstructive pulmonary disease; gastrointestinal symptoms including nausea, change in appetite, constipation, jaundice, increase in bilirubin, increase in liver transaminases, increase in alkaline phosphatase; hypersensitivity reactions, anaphylactic/oid reactions; dermatological symptoms, allergic skin reactions, alopecia; S IADH, hyponatremia; thrombocytopenia, agranulocytosis, pancytopenia; hypothermia; and autonomic manifestations.

Paradoxical reactions, including anxiety, excitation, agitation, hostility, aggression, rage, sleep disturbances/insomnia, sexual arousal, and hallucinations may occur. Small decreases in blood pressure and hypotension may occur but are usually not clinically significant, probably being related to the relief of anxiety produced by lorazepam.

OVERDOSAGE

In postmarketing experience, overdose with lorazepam has occurred predominantly in combination with alcohol and/or other drugs. Therefore, in the management of overdosage, it should be borne in mind that multiple agents may have been taken.

Symptoms

Overdosage of benzodiazepines is usually manifested by varying degrees of central nervous system depression ranging from drowsiness to coma. In mild cases, symptoms include drowsiness, mental confusion, paradoxical reactions, dysarthria and lethargy. In more serious cases, and especially when other drugs or alcohol were ingested, symptoms may include ataxia, hypotonia, hypotension, cardiovascular depression, respiratory depression, hypnotic state, coma, and death.

MANAGEMENT

General supportive and symptomatic measures are recommended; vital signs must be monitored and the patient closely observed. When there is a risk of aspiration, induction of emesis is not recommended. Gastric lavage may be indicated if performed soon after ingestion or in symptomatic patients. Administration of activated charcoal may also limit drug absorption. Hypotension, though unlikely, usually may be controlled with norepinephrine bitartrate injection. Lorazepam is poorly dialyzable. Lorazepam glucuronide, the inactive metabolite, may be highly dialyzable.

The benzodiazepine antagonist flumazenil may be used in hospitalized patients as an adjunct to, not as a substitute for, proper management of benzodiazepine overdose. The prescriber should be aware of a risk of seizure in association with flumazenil treatment, particularly in long-term benzodiazepine users and in cyclic antidepressant overdose. The complete flumazenil package insert including CONTRAINDICATIONS, WARNINGS, and PRECAUTIONS should be consulted prior to use.

DOSAGE AND ADMINISTRATION

Lorazepam is administered orally. For optimal results, dose, frequency of administration, and duration of therapy should be individualized according to patient response. To facilitate this, 0.5 mg, 1 mg, and 2 mg tablets are available.

The usual range is 2 to 6 mg/day given in divided doses, the largest dose being taken before bedtime,

but the daily dosage may vary from 1 to 10 mg/day.

For anxiety, most patients require an initial dose of 2 to 3 mg/day given b.i.d. or t.i.d.

For insomnia due to anxiety or transient situational stress, a single daily dose of 2 to 4 mg may be given, usually at bedtime.

For elderly or debilitated patients, an initial dosage of 1 to 2 mg/day in divided doses is recommended, to be adjusted as needed and tolerated.

The dosage of lorazepam should be increased gradually when needed to help avoid adverse effects. When higher dosage is indicated, the evening dose should be increased before the daytime doses.

HOW SUPPLIED

Lorazepam Tablets USP are available in the following dosage strengths:

0.5 mg: white, scored, round flat faced beveled edge, debossed with **240** over **0.5** on one side and **WATSON** on the other side, supplied in bottles of 100, 500 and 1000.

1 mg: white, scored, round flat faced beveled edge, debossed with **241** over **1** on one side and **WATSON** on the other side, supplied in bottles of 100, 500 and 1000.

2 mg: white, scored, round flat faced beveled edge, debossed with **242** over **2** on one side and **WATSON** on the other side, supplied in bottles of 100, 500 and 1000.

Store at 20°-25°C (68°-77°F). [See USP controlled room temperature.] Dispense in a tight, light-resistant container as defined in the USP.

Manufactured by:

Watson Laboratories, Inc.

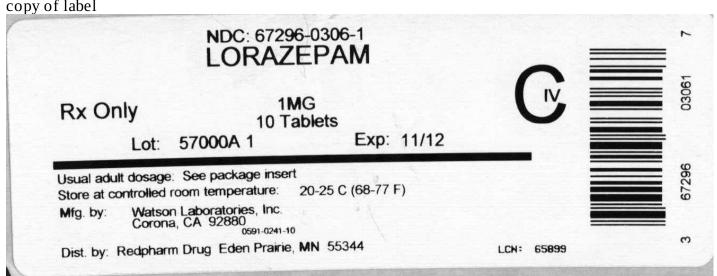
Corona, CA 92880 USA

Revised: June 2008

0608B 173019

Package Label

copy of label



LORAZEPAM

lorazepam tablet

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:67296- 0306(NDC:0591-0241)
Route of Administration	ORAL	DEA Schedule	CIV

Active Ingredient/Active Moiety				
Ingredient Name	Basis of Strength	Strength		
LORAZEPAM (UNII: O26FZP769L) (LORAZEPAM - UNII:O26FZP769L)	LORAZEPAM	1 mg		

Inactive Ingredients			
Ingredient Name	Strength		
LACTOSE (UNII: J2B2A4N98G)			
MAGNESIUM STEARATE (UNII: 70097M6I30)			
CELLULO SE, MICRO CRYSTALLINE (UNII: OP1R32D61U)			
PO LACRILIN PO TASSIUM (UNII: 0 BZ5A0 0 FQU)			

Product Characteristics			
Color	white	Score	2 pieces
Shape	ROUND	Size	7mm
Flavor		Imprint Code	241;1;WATSON
Contains			

P	ackaging			
#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:67296-0306-1	10 in 1 BOTTLE		

Marketing Information			
Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
ANDA	ANDA072927	10/31/1991	

Labeler - RedPharm Drug Inc. (008039641)

Establishment				
Name	Address	ID/FEI	Business Operations	
Watson Laboratories, Inc.		840054118	analysis, label, manufacture, pack	

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