

SUMATRIPTAN SUCCINATE- sumatriptan succinate injection, solution

Sandoz Inc

HIGHLIGHTS OF PRESCRIBING INFORMATION

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

Sumatriptan Succinate Injection, for subcutaneous use

Initial U.S. Approval: 1992

----- INDICATIONS AND USAGE -----

Sumatriptan Succinate Injection is a serotonin (5-HT_{1B/1D}) receptor agonist (triptan) indicated for:

- Acute treatment of migraine with or without aura in adults (1)
- Acute treatment of cluster headache in adults (1)

Limitations of Use:

- Use only if a clear diagnosis of migraine or cluster headache has been established (1)
- Not indicated for the prophylactic therapy of migraine or cluster headache attacks (1)

----- DOSAGE AND ADMINISTRATION -----

- For subcutaneous use only (2.1)
- Acute treatment of migraine: single dose of 1 to 6 mg (2.1)
- Acute treatment of cluster headache: single dose of 6 mg (2.1)
- Maximum dose in a 24-hour period: 12 mg, separate doses by at least 1 hour (2.1)
- Patients receiving doses other than 4 or 6 mg: Use the 6-mg single-dose vial (2.3)

----- DOSAGE FORMS AND STRENGTHS -----

- Injection: 4- and 6-mg single-dose pre-filled syringe cartridges for use with autoinjector pen (3)
- Injection: 6-mg single-dose vial (3)

----- CONTRAINDICATIONS -----

- History of coronary artery disease or coronary artery vasospasm (4)
- Wolff-Parkinson-White syndrome or other cardiac accessory conduction pathway disorders (4)
- History of stroke, transient ischemic attack, or hemiplegic or basilar migraine (4)
- Peripheral vascular disease (4)
- Ischemic bowel disease (4)
- Uncontrolled hypertension (4)
- Recent (within 24 hours) use of another 5-HT₁ agonist (e.g., another triptan) or of an ergotamine-containing medication (4)
- Concurrent or recent (past 2 weeks) use of monoamine oxidase-A inhibitor (4)
- Hypersensitivity to sumatriptan (angioedema and anaphylaxis seen) (4)
- Severe hepatic impairment (4)

----- WARNINGS AND PRECAUTIONS -----

- Myocardial ischemia/infarction and Prinzmetal's angina: Perform cardiac evaluation in patients with multiple cardiovascular risk factors (5.1)
- Arrhythmias: Discontinue Sumatriptan Succinate if occurs (5.2)
- Chest/throat/neck/jaw pain, tightness, pressure, or heaviness: Generally not associated with myocardial ischemia; evaluate for coronary artery disease in patients at high risk (5.3)
- Cerebral hemorrhage, subarachnoid hemorrhage, and stroke: Discontinue Sumatriptan Succinate if occurs (5.4)
- Gastrointestinal ischemic reactions and peripheral vasospastic reactions: Discontinue Sumatriptan Succinate if occurs (5.5)
- Medication overuse headache: Detoxification may be necessary (5.6)

- Serotonin syndrome: Discontinue Sumatriptan Succinate if occurs (5.7)
- Seizures: Use with caution in patients with epilepsy or a lowered seizure threshold (5.10)

----- **ADVERSE REACTIONS** -----

Most common adverse reactions ($\geq 5\%$ and $>$ placebo) were injection site reactions, tingling, dizziness/vertigo, warm/hot sensation, burning sensation, feeling of heaviness, pressure sensation, flushing, feeling of tightness, and numbness (6.1) **To report SUSPECTED ADVERSE REACTIONS, contact Sandoz Inc. at 1-800-525-8747 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)

See 17 for PATIENT COUNSELING INFORMATION and FDA-approved patient labeling.

Revised: 12/2015

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FULL PRESCRIBING INFORMATION

1 INDICATIONS AND USAGE

Sumatriptan Succinate Injection is indicated in adults for (1) the acute treatment of migraine, with or without aura, and (2) the acute treatment of cluster headache.

Limitations of Use:

- Use only if a clear diagnosis of migraine or cluster headache has been established. If a patient has no response to the first migraine or cluster headache attack treated with Sumatriptan Succinate Injection, reconsider the diagnosis before Sumatriptan Succinate Injection is administered to treat any subsequent attacks.
- Sumatriptan Succinate Injection is not indicated for the prevention of migraine or cluster headache attacks.

2 DOSAGE AND ADMINISTRATION

2.1 Dosing Information

The maximum single recommended adult dose of Sumatriptan Succinate Injection for the acute treatment of migraine or cluster headache is 6 mg injected subcutaneously. For the treatment of migraine, if side effects are dose limiting, lower doses (1 mg to 5 mg) may be used [see *Clinical Studies (14.1)*]. For the treatment of cluster headache, the efficacy of lower doses has not been established.

The maximum cumulative dose that may be given in 24 hours is 12 mg, two 6-mg injections separated by at least 1 hour. A second 6-mg dose should only be considered if some response to a first injection was observed.

2.2 Administration Using the Autoinjector Pen

An autoinjector device is available for use with 4-mg and 6-mg prefilled syringe cartridges. With this device, the needle penetrates approximately 1/4 inch (5 to 6 mm). The injection is intended to be given subcutaneously, and intramuscular or intravascular delivery must be avoided. Instruct patients on the proper use of the autoinjector pen and direct them to use injection sites with an adequate skin and subcutaneous thickness to accommodate the length of the needle.

2.3 Administration of Doses of Sumatriptan Succinate Other than 4 or 6 mg

In patients receiving doses other than 4 mg or 6 mg, use the 6-mg single-dose vial; do not use the autoinjector pen. Visually inspect the vial for particulate matter and discoloration before administration.

Do not use if particulates and discolorations are noted.

3 DOSAGE FORMS AND STRENGTHS

- Injection: 4-mg and 6-mg single-dose prefilled syringe cartridges for use with the autoinjector pen.
- Injection: 6-mg single-dose vial.

4 CONTRAINDICATIONS

Sumatriptan Succinate Injection is contraindicated in patients with:

- Ischemic coronary artery disease (CAD) (angina pectoris, history of myocardial infarction, or documented silent ischemia) or coronary artery vasospasm, including Prinzmetal's angina [*see Warnings and Precautions (5.1)*].
- Wolff-Parkinson-White syndrome or arrhythmias associated with other cardiac accessory conduction pathway disorders [*see Warnings and Precautions (5.2)*].
- History of stroke or transient ischemic attack (TIA) or history of hemiplegic or basilar migraine because these patients are at a higher risk of stroke [*see Warnings and Precautions (5.4)*].
- Peripheral vascular disease [*see Warnings and Precautions (5.5)*].
- Ischemic bowel disease [*see Warnings and Precautions (5.5)*].
- Uncontrolled hypertension [*see Warnings and Precautions (5.8)*].
- Recent use (i.e., within 24 hours) of ergotamine-containing medication, ergot-type medication (such as dihydroergotamine or methysergide), or another 5-hydroxytryptamine₁ (5-HT₁) agonist [*see Drug Interactions (7.1, 7.3)*].
- Concurrent administration of a monoamine oxidase (MAO)-A inhibitor or recent (within 2 weeks) use of an MAO-A inhibitor [*see Drug Interactions (7.2), Clinical Pharmacology (12.3)*].
- Hypersensitivity to sumatriptan (angioedema and anaphylaxis seen) [*see Warnings and Precautions (5.9)*].
- Severe hepatic impairment [*see Clinical Pharmacology (12.3)*].

5 WARNINGS AND PRECAUTIONS

5.1 Myocardial Ischemia, Myocardial Infarction, and Prinzmetal's Angina

The use of Sumatriptan Succinate Injection is contraindicated in patients with ischemic or vasospastic CAD. There have been rare reports of serious cardiac adverse reactions, including acute myocardial infarction, occurring within a few hours following administration of Sumatriptan Succinate Injection. Some of these reactions occurred in patients without known CAD. Sumatriptan Succinate Injection may cause coronary artery vasospasm (Prinzmetal's angina), even in patients without a history of CAD.

Perform a cardiovascular evaluation in triptan-naïve patients who have multiple cardiovascular risk factors (e.g., increased age, diabetes, hypertension, smoking, obesity, strong family history of CAD) prior to receiving Sumatriptan Succinate Injection. If there is evidence of CAD or coronary artery vasospasm, Sumatriptan Succinate Injection is contraindicated. For patients with multiple cardiovascular risk factors who have a negative cardiovascular evaluation, consider administering the first dose of Sumatriptan Succinate Injection in a medically supervised setting and performing an electrocardiogram (ECG) immediately following administration of Sumatriptan Succinate Injection. For such patients, consider periodic cardiovascular evaluation in intermittent long-term users of Sumatriptan Succinate Injection.

5.2 Arrhythmias

Life-threatening disturbances of cardiac rhythm, including ventricular tachycardia and ventricular fibrillation leading to death, have been reported within a few hours following the administration of 5-HT₁ agonists. Discontinue Sumatriptan Succinate Injection if these disturbances occur. Sumatriptan Succinate Injection is contraindicated in patients with Wolff-Parkinson-White syndrome or arrhythmias associated with other cardiac accessory conduction pathway disorders.

5.3 Chest, Throat, Neck, and/or Jaw Pain/Tightness/Pressure

Sensations of tightness, pain, pressure, and heaviness in the precordium, throat, neck, and jaw commonly occur after treatment with Sumatriptan Succinate Injection and are usually non-cardiac in origin. However, perform a cardiac evaluation if these patients are at high cardiac risk. The use of Sumatriptan Succinate Injection is contraindicated in patients with CAD and those with Prinzmetal's variant angina.

5.4 Cerebrovascular Events

Cerebral hemorrhage, subarachnoid hemorrhage, and stroke have occurred in patients treated with 5-HT₁ agonists, and some have resulted in fatalities. In a number of cases, it appears possible that the cerebrovascular events were primary, the 5-HT₁ agonist having been administered in the incorrect belief that the symptoms experienced were a consequence of migraine when they were not. Also, patients with migraine may be at increased risk of certain cerebrovascular events (e.g., stroke, hemorrhage, TIA). Discontinue Sumatriptan Succinate Injection if a cerebrovascular event occurs.

Before treating headaches in patients not previously diagnosed with migraine or cluster headache or in patients who present with atypical symptoms, exclude other potentially serious neurological conditions. Sumatriptan Succinate Injection is contraindicated in patients with a history of stroke or TIA.

5.5 Other Vasospasm Reactions

Sumatriptan Succinate Injection may cause non-coronary vasospastic reactions, such as peripheral vascular ischemia, gastrointestinal vascular ischemia and infarction (presenting with abdominal pain and bloody diarrhea), splenic infarction, and Raynaud's syndrome. In patients who experience symptoms or signs suggestive of non-coronary vasospasm reaction following the use of any 5-HT₁ agonist, rule out a vasospastic reaction before receiving additional Sumatriptan Succinate Injections.

Reports of transient and permanent blindness and significant partial vision loss have been reported with the use of 5-HT₁ agonists. Since visual disorders may be part of a migraine attack, a causal relationship between these events and the use of 5-HT₁ agonists have not been clearly established.

5.6 Medication Overuse Headache

Overuse of acute migraine drugs (e.g., ergotamine, triptans, opioids, or combination of these drugs for 10 or more days per month) may lead to exacerbation of headache (medication overuse headache). Medication overuse headache may present as migraine-like daily headaches, or as a marked increase in frequency of migraine attacks. Detoxification of patients, including withdrawal of the overused drugs, and treatment of withdrawal symptoms (which often includes a transient worsening of headache) may be necessary.

5.7 Serotonin Syndrome

Serotonin syndrome may occur with Sumatriptan Succinate Injection, particularly during co-administration with selective serotonin reuptake inhibitors (SSRIs), serotonin norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants (TCAs), and MAO inhibitors [see *Drug Interactions (7.4)*]. Serotonin syndrome symptoms may include mental status changes (e.g., agitation, hallucinations, coma), autonomic instability (e.g., tachycardia, labile blood pressure, hyperthermia), neuromuscular aberrations (e.g., hyperreflexia, incoordination), and/or gastrointestinal symptoms (e.g., nausea, vomiting, diarrhea). The onset of symptoms usually occurs within minutes to hours of receiving a new or a greater dose of a

serotonergic medication. Discontinue Sumatriptan Succinate Injection if serotonin syndrome is suspected.

5.8 Increase in Blood Pressure

Significant elevation in blood pressure, including hypertensive crisis with acute impairment of organ systems, has been reported on rare occasions in patients treated with 5-HT₁ agonists, including patients without a history of hypertension. Monitor blood pressure in patients treated with Sumatriptan Succinate Injection. Sumatriptan Succinate Injection is contraindicated in patients with uncontrolled hypertension.

5.9 Anaphylactic/Anaphylactoid Reactions

Anaphylactic/anaphylactoid reactions have occurred in patients receiving sumatriptan. Such reactions can be life threatening or fatal. In general, anaphylactic reactions to drugs are more likely to occur in individuals with a history of sensitivity to multiple allergens. Sumatriptan Succinate Injection is contraindicated in patients with a history of hypersensitivity reaction to sumatriptan.

5.10 Seizures

Seizures have been reported following administration of sumatriptan. Some have occurred in patients with either a history of seizures or concurrent conditions predisposing to seizures. There are also reports in patients where no such predisposing factors are apparent. Sumatriptan Succinate Injection should be used with caution in patients with a history of epilepsy or conditions associated with a lowered seizure threshold.

6 ADVERSE REACTIONS

The following serious adverse reactions are described below and elsewhere in the labeling:

- Myocardial ischemia, myocardial infarction, and Prinzmetal's angina [*see Warnings and Precautions (5.1)*]
- Arrhythmias [*see Warnings and Precautions (5.2)*]
- Chest, throat, neck, and/or jaw pain/tightness/pressure [*see Warnings and Precautions (5.3)*]
- Cerebrovascular events [*see Warnings and Precautions (5.4)*]
- Other vasospasm reactions [*see Warnings and Precautions (5.5)*]
- Medication overuse headache [*see Warnings and Precautions (5.6)*]
- Serotonin syndrome [*see Warnings and Precautions (5.7)*]
- Increase in blood pressure [*see Warnings and Precautions (5.8)*]
- Hypersensitivity reactions [*see Contraindications (4), Warnings and Precautions (5.9)*]
- Seizures [*see Warnings and Precautions (5.10)*]

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 with rates in the clinical trials of another drug and may not reflect the rates observed in practice.

Migraine Headache

Table 1 lists adverse reactions that occurred in 2 US placebo-controlled clinical trials in migraine patients (Studies 2 and 3) following either a single 6 mg dose of Sumatriptan Succinate Injection or placebo. Only reactions that occurred at a frequency of 2% or more in groups treated with Sumatriptan Succinate Injection 6 mg and that occurred at a frequency greater than the placebo group are included in Table 1.

Table 1. Adverse Reactions in Pooled Placebo-Controlled Trials in Patients with Migraine

(Studies 2 and 3)

	Sumatriptan Succinate Injection 6 mg Subcutaneous (n = 547) %	Placebo (n = 370) %
Atypical sensations	42	9
Tingling	14	3
Warm/hot sensation	11	4
Burning sensation	7	<1
Feeling of heaviness	7	1
Pressure sensation	7	2
Feeling of tightness	5	<1
Numbness	5	2
Feeling strange	2	<1
Tight feeling in head	2	<1
Cardiovascular		
Flushing	7	2
Chest discomfort	5	1
Tightness in chest	3	<1
Pressure in chest	2	<1
Ear, nose, and throat		
Throat discomfort	3	<1

Discomfort: nasal cavity/sinuses	2	<1
Injection site reaction ^a	59	24
Miscellaneous		
Jaw discomfort	2	0
Musculoskeletal		
Weakness	5	<1
Neck pain/stiffness	5	<1
Myalgia	2	<1
Neurological		
Dizziness/vertigo	12	4
Drowsiness/sedation	3	2
Headache	2	<1
Skin		
Sweating	2	1

^a Includes injection site pain, stinging/burning, swelling, erythema, bruising, bleeding.

The incidence of adverse reactions in controlled clinical trials was not affected by gender or age of the patients. There were insufficient data to assess the impact of race on the incidence of adverse reactions.

Cluster Headache

In the controlled clinical trials assessing the efficacy of Sumatriptan Succinate Injection as a treatment for cluster headache (Studies 4 and 5), no new significant adverse reactions were detected that had not already been identified in trials of sumatriptan succinate in patients with migraine.

Overall, the frequency of adverse reactions reported in the trials of cluster headache was generally lower than in the migraine trials. Exceptions include reports of paresthesia (5% Sumatriptan Succinate Injection, 0% placebo), nausea and vomiting (4% Sumatriptan Succinate Injection, 0% placebo), and bronchospasm (1% Sumatriptan Succinate Injection, 0% placebo).

6.2 Postmarketing Experience

The following adverse reactions have been identified during postapproval use of sumatriptan tablets, nasal spray, and injection. Because these reactions are 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.

Cardiovascular

Hypotension, palpitations.

Neurological

Dystonia, tremor.

7 DRUG INTERACTIONS

7.1 Ergot-containing Drugs

Ergot-containing drugs have been reported to cause prolonged vasospastic reactions. Because these effects may be additive, use of ergotamine-containing or ergot-type medications (like dihydroergotamine or methysergide) and Sumatriptan Succinate Injection within 24 hours of each other is contraindicated.

7.2 Monoamine Oxidase-A Inhibitors

MAO-A inhibitors increase systemic exposure by 2-fold. Therefore, the use of Sumatriptan Succinate Injection in patients receiving MAO-A inhibitors is contraindicated [see *Clinical Pharmacology (12.3)*].

7.3 Other 5-HT₁ Agonists

Because their vasospastic effects may be additive, co-administration of Sumatriptan Succinate Injection and other 5-HT₁ agonists (e.g., triptans) within 24 hours of each other is contraindicated.

7.4 Selective Serotonin Reuptake Inhibitors/Serotonin Norepinephrine Reuptake Inhibitors and Serotonin Syndrome

Cases of serotonin syndrome have been reported during co-administration of triptans and SSRIs, SNRIs, TCAs, and MAO inhibitors [see *Warnings and Precautions (5.7)*].

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Pregnancy Category C

There are no adequate and well-controlled trials of Sumatriptan Succinate Injection in pregnant women. In developmental toxicity studies in rats and rabbits, oral administration of sumatriptan to pregnant animals was associated with embryoletality, fetal abnormalities, and pup mortality. When administered by the intravenous route to pregnant rabbits, sumatriptan was embryoletal. Sumatriptan Succinate Injection should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Oral administration of sumatriptan to pregnant rats during the period of organogenesis resulted in an increased incidence of fetal blood vessel (cervicothoracic and umbilical) abnormalities. The highest no-effect dose for embryofetal developmental toxicity in rats was 60 mg/kg/day, or approximately 100 times the single maximum recommended human dose (MRHD) of 6 mg administered subcutaneously on a mg/m² basis. Oral administration of sumatriptan to pregnant rabbits during the period of organogenesis resulted in increased incidences of embryoletality and fetal cervicothoracic vascular and skeletal abnormalities. Intravenous administration of sumatriptan to pregnant rabbits during the period of organogenesis resulted in an increased incidence of embryoletality. The highest oral and intravenous no-effect doses for developmental toxicity in rabbits were 15 and 0.75 mg/kg/day, or approximately 50 and 2 times, respectively, the single MRHD of 6 mg administered subcutaneously on a mg/m² basis.

Oral administration of sumatriptan to rats prior to and throughout gestation resulted in embryofetal

toxicity (decreased body weight, decreased ossification, increased incidence of skeletal abnormalities). The highest no-effect dose was 50 mg/kg/day, or approximately 80 times the single MRHD of 6 mg administered subcutaneously on a mg/m² basis. In offspring of pregnant rats treated orally with sumatriptan during organogenesis, there was a decrease in pup survival. The highest no-effect dose for this effect was 60 mg/kg/day, or approximately 100 times the single MRHD of 6 mg administered subcutaneously on a mg/m² basis. Oral treatment of pregnant rats with sumatriptan during the latter part of gestation and throughout lactation resulted in a decrease in pup survival. The highest no-effect dose for this finding was 100 mg/kg/day, or approximately 160 times the single MRHD of 6 mg administered subcutaneously on a mg/m² basis.

8.3 Nursing Mothers

Sumatriptan is excreted in human milk following subcutaneous administration. Infant exposure to sumatriptan can be minimized by avoiding breastfeeding for 12 hours after treatment with Sumatriptan Succinate Injection.

8.4 Pediatric Use

Safety and effectiveness in pediatric patients have not been established. Sumatriptan Succinate Injection is not recommended for use in patients younger than 18 years of age.

Two controlled clinical trials evaluated sumatriptan nasal spray (5 to 20 mg) in 1,248 pediatric migraineurs 12 to 17 years of age who treated a single attack. The trials did not establish the efficacy of sumatriptan nasal spray compared with placebo in the treatment of migraine in pediatric patients. Adverse reactions observed in these clinical trials were similar in nature to those reported in clinical trials in adults.

Five controlled clinical trials (2 single-attack trials, 3 multiple-attack trials) evaluating oral sumatriptan (25 to 100 mg) in pediatric patients 12 to 17 years of age enrolled a total of 701 pediatric migraineurs. These trials did not establish the efficacy of oral sumatriptan compared with placebo in the treatment of migraine in pediatric patients. Adverse reactions observed in these clinical trials were similar in nature to those reported in clinical trials in adults. The frequency of all adverse reactions in these patients appeared to be both dose- and age-dependent, with younger patients reporting reactions more commonly than older pediatric patients.

Postmarketing experience documents that serious adverse reactions have occurred in the pediatric population after use of subcutaneous, oral, and/or intranasal sumatriptan. These reports include reactions similar in nature to those reported rarely in adults, including stroke, visual loss, and death. A myocardial infarction has been reported in a 14-year-old male following the use of oral sumatriptan; clinical signs occurred within 1 day of drug administration. Clinical data to determine the frequency of serious adverse reactions in pediatric patients who might receive subcutaneous, oral, or intranasal sumatriptan are not presently available.

8.5 Geriatric Use

Clinical trials of sumatriptan succinate injection did not include sufficient numbers of patients 65 years of age and older to determine whether they respond differently from younger patients. 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.

A cardiovascular evaluation is recommended for geriatric patients who have other cardiovascular risk factors (e.g., diabetes, hypertension, smoking, obesity, strong family history of CAD) prior to receiving Sumatriptan Succinate Injection [see *Warnings and Precautions* (5.1)].

10 OVERDOSAGE

Coronary vasospasm was observed after intravenous administration of Sumatriptan Succinate Injection [see *Contraindications (4)*]. Overdoses would be expected from animal data (dogs at 0.1 g/kg, rats at 2 g/kg) to possibly cause convulsions, tremor, inactivity, erythema of the extremities, reduced respiratory rate, cyanosis, ataxia, mydriasis, injection site reactions (desquamation, hair loss, and scab formation), and paralysis.

The elimination half-life of sumatriptan is about 2 hours [see *Clinical Pharmacology (12.3)*]; therefore, monitoring of patients after overdose with Sumatriptan Succinate Injection should continue for at least 10 hours or while symptoms or signs persist.

It is unknown what effect hemodialysis or peritoneal dialysis has on the serum concentrations of sumatriptan.

11 DESCRIPTION

Sumatriptan Succinate Injection contains sumatriptan succinate, a selective 5-HT_{1B/1D} receptor agonist. Sumatriptan succinate is chemically designated as 3-[2-(dimethylamino)ethyl]-N-methyl-indole-5-methanesulfonamide succinate (1:1), and it has the following structure:

The empirical formula is C₁₄H₂₁N₃O₂S•C₄H₆O₄, representing a molecular weight of 413.5. Sumatriptan succinate is a white to off-white powder that is readily soluble in water and in saline.

Sumatriptan Succinate Injection is a clear, colorless to pale yellow, sterile, nonpyrogenic solution for subcutaneous injection. Each 0.5 mL of Sumatriptan Succinate Injection 8 mg/mL solution contains 4 mg of sumatriptan (base) as the succinate salt and 3.8 mg of sodium chloride, USP in Water for Injection, USP. Each 0.5 mL of Sumatriptan Succinate Injection 12 mg/mL solution contains 6 mg of sumatriptan (base) as the succinate salt and 3.5 mg of sodium chloride, USP in Water for Injection, USP. The pH range of both solutions is approximately 4.2 to 5.3. The osmolality of both injections is 291 mOsmol.

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

Sumatriptan binds with high affinity to human cloned 5-HT_{1B/1D} receptors. Sumatriptan presumably exerts its therapeutic effects in the treatment of migraine and cluster headaches through agonist effects at the 5-HT_{1B/1D} receptors on intracranial blood vessels and sensory nerves of the trigeminal system, which result in cranial vessel constriction and inhibition of pro-inflammatory neuropeptide release.

12.2 Pharmacodynamics

Blood Pressure

Significant elevation in blood pressure, including hypertensive crisis, has been reported in patients with

and without a history of hypertension [see *Warnings and Precautions (5.8)*].

Peripheral (Small) Arteries

In healthy volunteers (N = 18), a trial evaluating the effects of sumatriptan on peripheral (small vessel) arterial reactivity failed to detect a clinically significant increase in peripheral resistance.

Heart Rate

Transient increases in blood pressure observed in some patients in clinical trials carried out during sumatriptan's development as a treatment for migraine were not accompanied by any clinically significant changes in heart rate.

12.3 Pharmacokinetics

Absorption and Bioavailability

The bioavailability of sumatriptan via subcutaneous site injection to 18 healthy male subjects was 97% ± 16% of that obtained following intravenous injection.

After a single 6-mg subcutaneous manual injection into the deltoid area of the arm in 18 healthy males (age: 24 ± 6 years, weight: 70 kg), the maximum serum concentration (C_{max}) of sumatriptan was (mean ± standard deviation) 74 ± 15 ng/mL and the time to peak concentration (T_{max}) was 12 minutes after injection (range: 5 to 20 minutes). In this trial, the same dose injected subcutaneously in the thigh gave a C_{max} of 61 ± 15 ng/mL by manual injection versus 52 ± 15 ng/mL by autoinjector techniques. The T_{max} or amount absorbed was not significantly altered by either the site or technique of injection.

Distribution

Protein binding, determined by equilibrium dialysis over the concentration range of 10 to 1,000 ng/mL is low, approximately 14% to 21%. The effect of sumatriptan on the protein binding of other drugs has not been evaluated.

Following a 6-mg subcutaneous injection into the deltoid area of the arm in 9 males (mean age: 33 years, mean weight: 77 kg) the volume of distribution central compartment of sumatriptan was 50 ± 8 liters and the distribution half-life was 15 ± 2 minutes.

Metabolism

In vitro studies with human microsomes suggest that sumatriptan is metabolized by MAO, predominantly the A isoenzyme. Most of a radiolabeled dose of sumatriptan excreted in the urine is the major metabolite indole acetic acid (IAA) or the IAA glucuronide, both of which are inactive.

Elimination

After a single 6-mg subcutaneous dose, 22% ± 4% was excreted in the urine as unchanged sumatriptan and 38% ± 7% as the IAA metabolite.

Following a 6-mg subcutaneous injection into the deltoid area of the arm, the systemic clearance of sumatriptan was 1,194 ± 149 mL/min and the terminal half-life was 115 ± 19 minutes.

Specific Populations

Age

The pharmacokinetics of sumatriptan in the elderly (mean age: 72 years, 2 males and 4 females) and in subjects with migraine (mean age: 38 years, 25 males and 155 females) were similar to that in healthy male subjects (mean age: 30 years).

Hepatic Impairment

The effect of mild to moderate hepatic disease on the pharmacokinetics of subcutaneously administered sumatriptan has been evaluated. There were no significant differences in the pharmacokinetics of subcutaneously administered sumatriptan in moderately hepatically impaired subjects compared with

healthy controls. The pharmacokinetics of subcutaneously administered sumatriptan in patients with severe hepatic impairment has not been studied. The use of Sumatriptan Succinate Injection in this population is contraindicated [see *Contraindications (4)*].

Race

The systemic clearance and C_{max} of subcutaneous sumatriptan were similar in black (n = 34) and Caucasian (n = 38) healthy male subjects.

Drug Interaction Studies

Monoamine Oxidase-A Inhibitors

In a trial of 14 healthy females, pretreatment with an MAO-A inhibitor decreased the clearance of subcutaneous sumatriptan, resulting in a 2-fold increase in the area under the sumatriptan plasma concentration-time curve (AUC), corresponding to a 40% increase in elimination half-life.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

Carcinogenesis

In carcinogenicity studies in mouse and rat in which sumatriptan was administered orally for 78 weeks and 104 weeks, respectively, at doses up to 160 mg/kg/day (the highest dose in rat was reduced from 360 mg/kg/day during Week 21). The highest dose to mice and rats was approximately 130 and 260 times the single MRHD of 6 mg administered subcutaneously on a mg/m^2 basis. There was no evidence in either species of an increase in tumors related to sumatriptan administration.

Mutagenesis

Sumatriptan was negative in in vitro (bacterial reverse mutation [Ames], gene cell mutation in Chinese hamster V79/HGPRT, chromosomal aberration in human lymphocytes) and in vivo (rat micronucleus) assays.

Impairment of Fertility

When sumatriptan was administered by subcutaneous injection to male and female rats prior to and throughout the mating period, there was no evidence of impaired fertility at doses up to 60 mg/kg/day or approximately 100 times the single human dose of 6 mg on a mg/m^2 basis. When sumatriptan (5, 50, 500 mg/kg/day) was administered orally to male and female rats prior to and throughout the mating period, there was a treatment-related decrease in fertility, secondary to a decrease in mating in animals treated with doses greater than 5 mg/kg/day. It is not clear whether this finding was due to an effect on males or females or both.

13.2 Animal Toxicology and/or Pharmacology

Corneal Opacities

Dogs receiving oral sumatriptan developed corneal opacities and defects in the corneal epithelium. Corneal opacities were seen at the lowest dose tested, 2 mg/kg/day, and were present after 1 month of treatment. Defects in the corneal epithelium were noted in a 60-week study. Earlier examinations for these toxicities were not conducted and no-effect doses were not established; however, the relative plasma exposure at the lowest dose tested was approximately 3 times the human exposure after a 6-mg subcutaneous dose.

14 CLINICAL STUDIES

14.1 Migraine

In controlled clinical trials enrolling more than 1,000 patients during migraine attacks who were experiencing moderate or severe pain and 1 or more of the symptoms enumerated in Table 3, onset of relief began as early as 10 minutes following a 6-mg Sumatriptan Succinate Injection. Lower doses of sumatriptan succinate injection may also prove effective, although the proportion of patients obtaining adequate relief was decreased and the latency to that relief is greater with lower doses.

In Study 1, 6 different doses of Sumatriptan Succinate Injection (n = 30 each group) were compared with placebo (n = 62), in a single-attack, parallel-group design, the dose-response relationship was found to be as shown in Table 2.

Table 2. Proportion of Patients with Migraine Relief and Incidence of Adverse Reactions by Time and by Sumatriptan Succinate Dose in Study 1

Dose of Sumatriptan Succinate Injection	Percent Patients with Relief ^a				Adverse Reactions Incidence (%)
	at 10 Minutes	at 30 Minutes	at 1 Hour	at 2 Hours	
Placebo	5	15	24	21	55
1 mg	10	40	43	40	63
2 mg	7	23	57	43	63
3 mg	17	47	57	60	77
4 mg	13	37	50	57	80
6 mg	10	63	73	70	83
8 mg	23	57	80	83	93

^aRelief is defined as the reduction of moderate or severe pain to no or mild pain after dosing without use of rescue medication.

In 2 randomized, placebo-controlled clinical trials of Sumatriptan Succinate Injection 6 mg in 1,104 patients with moderate or severe migraine pain (Studies 2 and 3), the onset of relief was less than 10 minutes. Headache relief, as defined by a reduction in pain from severe or moderately severe to mild or no headache, was achieved in 70% of the patients within 1 hour of a single 6-mg subcutaneous dose of Sumatriptan Succinate Injection. Approximately 82% and 65% of patients treated with Sumatriptan Succinate Injection 6 mg had headache relief and were pain free within 2 hours, respectively.

Table 3 shows the 1- and 2-hour efficacy results for Sumatriptan Succinate Injection 6 mg in Studies 2 and 3.

Table 3. Proportion of Patients with Pain Relief and Relief of Migraine Symptoms after 1 and 2 Hours of Treatment in Studies 2 and 3

	Study 2		Study 3	
	Placebo (n = 190)	Sumatriptan Succinate Injection 6 mg (n = 384)	Placebo (n = 180)	Sumatriptan Succinate Injection 6 mg (n = 350)
1-Hour Data				
Patients with pain relief (grade 0/1)	18%	70% ^a	26%	70% ^a
Patients with no pain	5%	48% ^a	13%	49% ^a
Patients without nausea	48%	73% ^a	50%	73% ^a
Patients without photophobia	23%	56% ^a	25%	58% ^a
Patients with little or no clinical disability ^b	34%	76% ^a	34%	76% ^a
	Study 2		Study 3	

2-Hour Data	Placebo^c	Sumatriptan Succinate Injection 6 mg^d	Placebo^c	Sumatriptan Succinate Injection 6 mg^d
Patients with pain relief (grade 0/1)	31%	81% ^a	39%	82% ^a
Patients with no pain	11%	63% ^a	19%	65% ^a
Patients without nausea	56%	82% ^a	63%	81% ^a
Patients without photophobia	31%	72% ^a	35%	71% ^a
Patients with little or no clinical disability ^b	42%	85% ^a	49%	84% ^a

^a $P < 0.05$ versus placebo.

^bA successful outcome in terms of clinical disability was defined prospectively as ability to work mildly impaired or ability to work and function normally.

^cIncludes patients that may have received an additional placebo injection 1 hour after the initial injection.

^dIncludes patients that may have received an additional 6 mg of Sumatriptan Succinate Injection 1 hour after the initial injection.

Sumatriptan Succinate Injection also relieved photophobia, phonophobia (sound sensitivity), nausea, and vomiting associated with migraine attacks. Similar efficacy was seen when patients self-administered Sumatriptan Succinate Injection using the autoinjector pen.

The efficacy of sumatriptan succinate injection was unaffected by whether or not the migraine was associated with aura, duration of attack, gender or age of the patient, or concomitant use of common migraine prophylactic drugs (e.g., beta-blockers).

14.2 Cluster Headache

The efficacy of Sumatriptan Succinate Injection in the acute treatment of cluster headache was demonstrated in 2 randomized, double-blind, placebo-controlled, 2-period crossover trials (Studies 4 and 5). Patients 21 to 65 years of age were enrolled and were instructed to treat a moderate to very severe headache within 10 minutes of onset. Headache relief was defined as a reduction in headache severity to mild or no pain. In both trials, the proportion of individuals gaining relief at 10 or 15 minutes was significantly greater among patients receiving 6 mg of Sumatriptan Succinate Injection compared with those who received placebo (see Table 4).

Table 4. Proportion of Patients with Cluster Headache Relief by Time in Studies 4 and 5

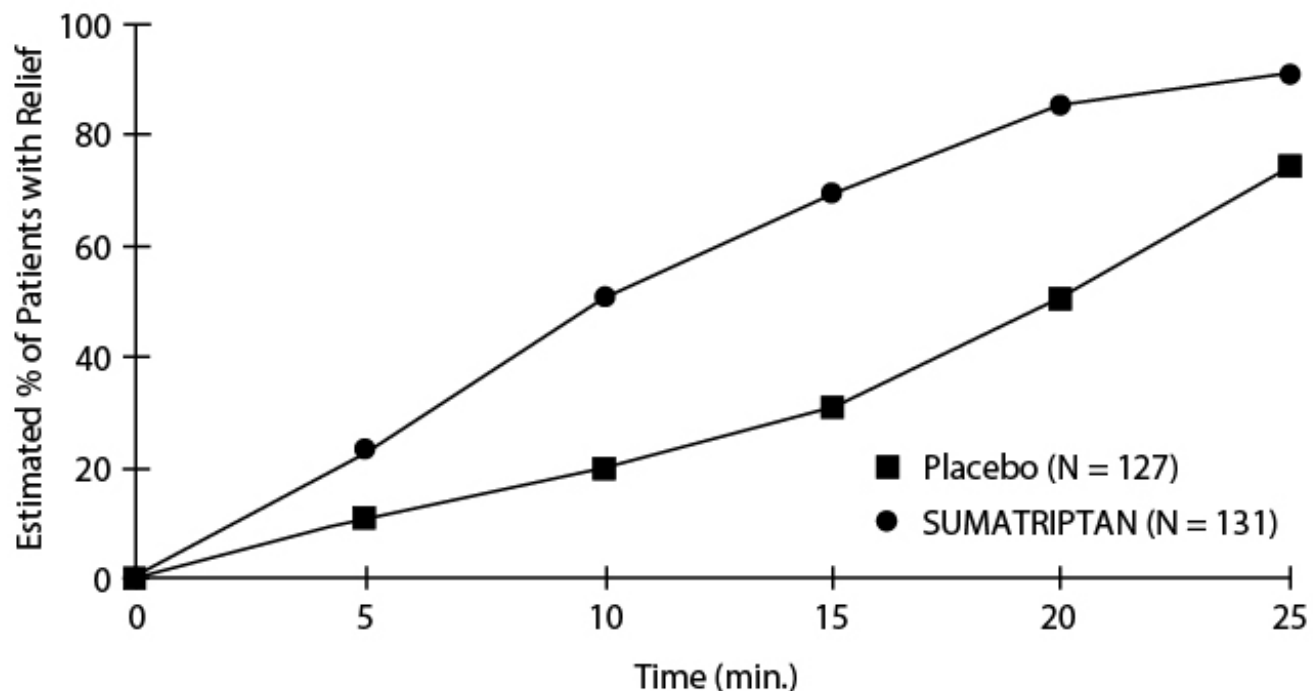
	Study 4		Study 5	
	Placebo (n = 39)	Sumatriptan Succinate Injection 6 mg (n = 39)	Placebo (n = 88)	Sumatriptan Succinate Injection 6 mg (n = 92)
Patients with pain relief (no/mild)				
5 Minutes post-injection	8%	21%	7%	23% ^a
10 Minutes post-injection	10%	49% ^a	25%	49% ^a
15 Minutes post-injection	26%	74% ^a	35%	75% ^a

^a $P < 0.05$.

(n = Number of headaches treated.)

An estimate of the cumulative probability of a patient with a cluster headache obtaining relief after being treated with either sumatriptan succinate injection or placebo is presented in Figure 1.

Figure 1. Time to Relief of Cluster Headache from Time of Injection^a



^aThe figure uses Kaplan-Meier (product limit) Survivorship Plot. Patients taking rescue medication were censored at 15 minutes.

The plot was constructed with data from patients who either experienced relief or did not require (request) rescue medication within a period of 2 hours following treatment. As a consequence, the data in the plot are derived from only a subset of the 258 headaches treated (rescue medication was required in 52 of the 127 placebo-treated headaches and 18 of the 131 headaches treated with Sumatriptan Succinate Injection).

Other data suggest that treatment with Sumatriptan Succinate Injection is not associated with an increase in early recurrence of headache and has little effect on the incidence of later-occurring headaches (i.e., those occurring after 2, but before 18 or 24 hours).

16 HOW SUPPLIED/STORAGE AND HANDLING

Sumatriptan Succinate Injection contains sumatriptan (base) as the succinate salt and is supplied as a clear, colorless to pale yellow, sterile, nonpyrogenic solution as follows:

Prefilled Syringe and/or Autoinjector Pen: Each pack contains a Patient Information and Instructions for Use leaflet.

- Sumatriptan Succinate Injection Kit, 4 mg, containing 1 autoinjector pen, 2 prefilled single-dose syringe cartridges, and 1 carrying case (NDC 0781-3169-07).
- Sumatriptan Succinate Injection Kit, 6 mg, containing 1 autoinjector pen, 2 prefilled single-dose syringe cartridges, and 1 carrying case (NDC 0781-3172-07).
- Two 4-mg single-dose prefilled syringe cartridges for use with Sumatriptan Succinate Injection Kit (NDC 0781-3170-07).
- Two 6-mg single-dose prefilled syringe cartridges for use with Sumatriptan Succinate Injection

Kit (NDC 0781-3173-07).

Single-Dose Vial:

- Sumatriptan Succinate Injection single-dose vial (6 mg/0.5 mL) in cartons containing 5 vials (NDC 0781-3174-14).

Store between 2° and 30°C (36° and 86°F). Protect from light.

17 PATIENT COUNSELING INFORMATION

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

Risk of Myocardial Ischemia and/or Infarction, Prinzmetal's Angina, Other Vasospasm-Related Events, Arrhythmias, and Cerebrovascular Events

Inform patients that Sumatriptan Succinate Injection may cause serious cardiovascular side effects such as myocardial infarction or stroke. Although serious cardiovascular events can occur without warning symptoms, patients should be alert for the signs and symptoms of chest pain, shortness of breath, irregular heartbeat, significant rise in blood pressure, weakness, and slurring of speech, and should ask for medical advice if any indicative sign or symptoms are observed. Apprise patients of the importance of this follow-up [see *Warnings and Precautions* (5.1, 5.2, 5.4, 5.5, 5.8)].

Anaphylactic/Anaphylactoid Reactions

Inform patients that anaphylactic/anaphylactoid reactions have occurred in patients receiving Sumatriptan Succinate Injection. Such reactions can be life threatening or fatal. In general, anaphylactic reactions to drugs are more likely to occur in individuals with a history of sensitivity to multiple allergens [see *Contraindications* (4), *Warnings and Precautions* (5.9)].

Concomitant Use with Other Triptans or Ergot Medications

Inform patients that use of Sumatriptan Succinate Injection within 24 hours of another triptan or an ergot-type medication (including dihydroergotamine or methysergide) is contraindicated [see *Contraindications* (4), *Drug Interactions* (7.1, 7.3)].

Serotonin Syndrome

Caution patients about the risk of serotonin syndrome with the use of Sumatriptan Succinate Injection or other triptans, particularly during combined use with SSRIs, SNRIs, TCAs, and MAO inhibitors [see *Warnings and Precautions* (5.7), *Drug Interactions* (7.4)].

Medication Overuse Headache

Inform patients that use of acute migraine drugs for 10 or more days per month may lead to an exacerbation of headache and encourage patients to record headache frequency and drug use (e.g., by keeping a headache diary) [see *Warnings and Precautions* (5.6)].

Pregnancy

Inform patients that Sumatriptan Succinate Injection should not be used during pregnancy unless the potential benefit justifies the potential risk to the fetus [see *Use in Specific Populations* (8.1)].

Nursing Mothers

Advise patients to notify their healthcare provider if they are breastfeeding or plan to breastfeed [see *Use in Specific Populations* (8.3)].

Ability to Perform Complex Tasks

Treatment with Sumatriptan Succinate Injection may cause somnolence and dizziness; instruct patients to

evaluate their ability to perform complex tasks after administration of Sumatriptan Succinate Injection.

How to Use Sumatriptan Succinate Injection

Instruct patients to read the Instructions for Use before starting therapy. Provide patients instruction on the proper use of Sumatriptan Succinate Injection if they are able to self-administer Sumatriptan Succinate Injection in medically unsupervised situations. Instruct patients on storage and disposal of the pen [see *How Supplied/Storage and Handling (16)*].

Inform patients that the needle in the autoinjector pen penetrates approximately 1/4 of an inch (5 to 6 mm). Inform patients that the injection is intended to be given subcutaneously and intramuscular or intravascular delivery should be avoided. Instruct patients to use injection sites with an adequate skin and subcutaneous thickness to accommodate the length of the needle.

Manufactured by GlaxoSmithKline

Research Triangle Park, NC 27709

for Sandoz Inc.

Princeton, NJ 08540

SMJ-SZ:7PI

Patient Information

Sumatriptan Succinate Injection

(soo" ma trip' tan sux' u nate)

Read this Patient Information before you start taking Sumatriptan Succinate and each time you get a refill. There may be new information. This information does not take the place of talking with your healthcare provider about your medical condition or treatment.

What is the most important information I should know about Sumatriptan Succinate?

Sumatriptan Succinate can cause serious side effects, including:

Heart attack and other heart problems. Heart problems may lead to death.

Stop taking Sumatriptan Succinate and get emergency medical help right away if you have any of the following symptoms of a heart attack:

- discomfort in the center of your chest that lasts for more than a few minutes, or that goes away and comes back
- severe tightness, pain, pressure, or heaviness in your chest, throat, neck, or jaw
- pain or discomfort in your arms, back, neck, jaw, or stomach
- shortness of breath with or without chest discomfort
- breaking out in a cold sweat
- nausea or vomiting
- feeling lightheaded

Sumatriptan Succinate is not for people with risk factors for heart disease unless a heart exam is done and shows no problem. You have a higher risk for heart disease if you:

- have high blood pressure
- have high cholesterol levels
- smoke
- are overweight
- have diabetes

- have a family history of heart disease

What is Sumatriptan Succinate?

Sumatriptan Succinate Injection is a prescription medicine used to treat acute migraine headaches with or without aura and acute cluster headaches in adults who have been diagnosed with migraine or cluster headaches.

Sumatriptan Succinate is not used to treat other types of headaches such as hemiplegic (that make you unable to move on one side of your body) or basilar (rare form of migraine with aura) migraines.

Sumatriptan Succinate is not used to prevent or decrease the number of migraine or cluster headaches you have.

It is not known if Sumatriptan Succinate is safe and effective in children under 18 years of age.

Who should not take Sumatriptan Succinate?

Do not take Sumatriptan Succinate if you have:

- heart problems or a history of heart problems
- narrowing of blood vessels to your legs, arms, stomach, or kidneys (peripheral vascular disease)
- uncontrolled high blood pressure
- severe liver problems
- hemiplegic migraines or basilar migraines. If you are not sure if you have these types of migraines, ask your healthcare provider.
- had a stroke, transient ischemic attacks (TIAs), or problems with your blood circulation
- taken any of the following medicines in the last 24 hours:
 - almotriptan (AXERT[®])
 - eletriptan (RELPAX[®])
 - frovatriptan (FROVA[®])
 - naratriptan (AMERGE[®])
 - rizatriptan (MAXALT[®], MAXALT-MLT[®])
 - sumatriptan (IMITREX[®])
 - sumatriptan and naproxen (TREXIMET[®])
 - ergotamines (CAFERGOT[®], ERGOMAR[®], MIGERGOT[®])
 - dihydroergotamine (D.H.E. 45[®], MIGRANAL[®])

Ask your healthcare provider if you are not sure if your medicine is listed above.

- an allergy to sumatriptan or any of the ingredients in Sumatriptan Succinate Injection. See the end of this leaflet for a complete list of ingredients in Sumatriptan Succinate Injection.

What should I tell my healthcare provider before taking Sumatriptan Succinate?

Before you take Sumatriptan Succinate, tell your healthcare provider about all of your medical conditions, including if you:

- have high blood pressure
- have high cholesterol
- have diabetes
- smoke
- are overweight

- have heart problems or family history of heart problems or stroke
- have kidney problems
- have liver problems
- have had epilepsy or seizures
- are not using effective birth control
- become pregnant while taking Sumatriptan Succinate
- are breastfeeding or plan to breastfeed. Sumatriptan Succinate passes into your breast milk and may harm your baby. Talk with your healthcare provider about the best way to feed your baby if you take Sumatriptan Succinate.

Tell your healthcare provider about all the medicines you take, including prescription and nonprescription medicines, vitamins, and herbal supplements.

Sumatriptan Succinate and certain other medicines can affect each other, causing serious side effects.

Especially tell your healthcare provider if you take anti-depressant medicines called:

- selective serotonin reuptake inhibitors (SSRIs)
- serotonin norepinephrine reuptake inhibitors (SNRIs)
- tricyclic antidepressants (TCAs)
- monoamine oxidase inhibitors (MAOIs)

Ask your healthcare provider or pharmacist for a list of these medicines if you are not sure.

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

How should I take Sumatriptan Succinate?

- Certain people should take their first dose of Sumatriptan Succinate in their healthcare provider's office or in another medical setting. Ask your healthcare provider if you should take your first dose in a medical setting.
- Use Sumatriptan Succinate exactly as your healthcare provider tells you to use it.
- Your healthcare provider may change your dose. Do not change your dose without first talking with your healthcare provider.
- For adults, the usual dose is a single injection given just below the skin.
- You should give an injection as soon as the symptoms of your headache start, but it may be given at any time during a migraine or cluster headache attack.
- If you did not get any relief after the first injection, do not give a second injection without first talking with your healthcare provider.
- If your headache comes back or you only get some relief after your first injection, you can take a second injection 1 hour after the first injection, but not sooner.
- Do not take more than 12 mg in a 24-hour period.
- If you use too much Sumatriptan Succinate, call your healthcare provider or go to the nearest hospital emergency room right away.
- You should write down when you have headaches and when you take Sumatriptan Succinate so you can talk with your healthcare provider about how Sumatriptan Succinate is working for you.

What should I avoid while taking Sumatriptan Succinate?

Sumatriptan Succinate can cause dizziness, weakness, or drowsiness. If you have these symptoms, do not drive a car, use machinery, or do anything where you need to be alert.

What are the possible side effects of Sumatriptan Succinate?

Sumatriptan Succinate may cause serious side effects. See “What is the most important information I should know about Sumatriptan Succinate?”

These serious side effects include:

- changes in color or sensation in your fingers and toes (Raynaud’s syndrome)
- stomach and intestinal problems (gastrointestinal and colonic ischemic events). Symptoms of gastrointestinal and colonic ischemic events include:
 - sudden or severe stomach pain
 - stomach pain after meals
 - weight loss
 - nausea or vomiting
 - constipation or diarrhea
 - bloody diarrhea
 - fever
- problems with blood circulation to your legs and feet (peripheral vascular ischemia). Symptoms of peripheral vascular ischemia include:
 - cramping and pain in your legs or hips
 - feeling of heaviness or tightness in your leg muscles
 - burning or aching pain in your feet or toes while resting
 - numbness, tingling, or weakness in your legs
 - cold feeling or color changes in 1 or both legs or feet
- hives (itchy bumps); swelling of your tongue, mouth, or throat
- medication overuse headaches. Some people who use too many Sumatriptan Succinate injections may have worse headaches (medication overuse headache). If your headaches get worse, your healthcare provider may decide to stop your treatment with Sumatriptan Succinate.
- serotonin syndrome. Serotonin syndrome is a rare but serious problem that can happen in people using Sumatriptan Succinate, especially if Sumatriptan Succinate is used with anti-depressant medicines called SSRIs or SNRIs.

Call your healthcare provider right away if you have any of the following symptoms of serotonin syndrome:

- mental changes such as seeing things that are not there (hallucinations), agitation, or coma
- fast heartbeat
- changes in blood pressure
- high body temperature
- tight muscles
- trouble walking
- seizures. Seizures have happened in people taking Sumatriptan Succinate who have never had seizures before. Talk with your healthcare provider about your chance of having seizures while you take Sumatriptan Succinate.

The most common side effects of Sumatriptan Succinate Injection include:

- pain or redness at your injection site
- tingling or numbness in your fingers or toes
- dizziness
- warm, hot, burning feeling to your face (flushing)
- discomfort or stiffness in your neck
- feeling weak, drowsy, or tired

Tell your healthcare provider if you have any side effect that bothers you or that does not go away.

These are not all the possible side effects of Sumatriptan Succinate. For more information, ask your healthcare provider or pharmacist.

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 Sumatriptan Succinate Injection?

- Store Sumatriptan Succinate Injection between 36°F to 86°F (2°C to 30°C).
- Store your medicine away from light.
- Keep your medicine in the packaging or carrying case provided with it.

Keep Sumatriptan Succinate and all medicines out of the reach of children.

General information about the safe and effective use of Sumatriptan Succinate

Medicines are sometimes prescribed for purposes other than those listed in Patient Information leaflets. Do not use Sumatriptan Succinate for a condition for which it was not prescribed. Do not give Sumatriptan Succinate to other people, even if they have the same symptoms you have. It may harm them.

This Patient Information leaflet summarizes the most important information about Sumatriptan Succinate. If you would like more information, talk with your healthcare provider. You can ask your healthcare provider or pharmacist for information about Sumatriptan Succinate that is written for healthcare professionals.

What are the ingredients in Sumatriptan Succinate Injection?

Active ingredient: sumatriptan succinate

Inactive ingredients: sodium chloride, water for injection

This Patient Information and Instructions for Use has been approved by the U.S. Food and Drug Administration.

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Manufactured by GlaxoSmithKline

Research Triangle Park, NC 27709

for Sandoz Inc.

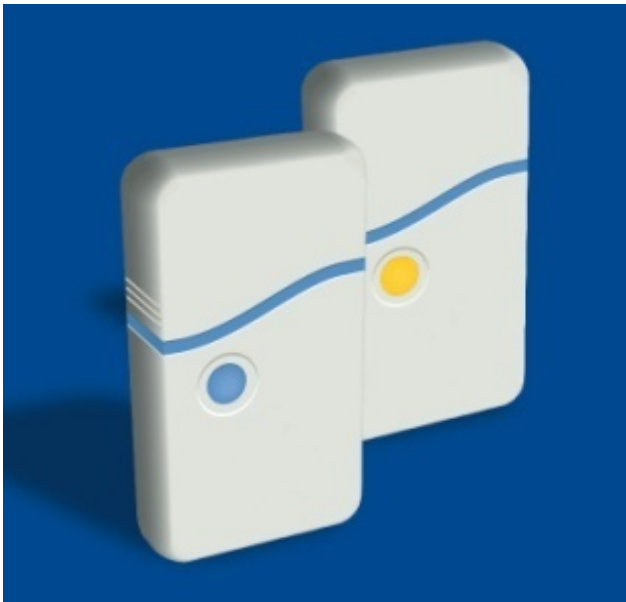
Princeton, NJ 08540

December 2015

SMJ-SZ:7PPI

Patient Instructions for Use

Sumatriptan Succinate Injection (soo " ma trip' tan sux' u nate) Kit



Read this Instructions for Use before you start to use the Sumatriptan Succinate Injection Kit. There may be new information. This information does not take the place of talking with your healthcare provider about your medical condition or treatment. You and your healthcare provider should talk about Sumatriptan Succinate Injection when you start taking it and at regular checkups.

Keep the Sumatriptan Succinate Injection Kit out of the reach of children.

Before you use the Sumatriptan Succinate Injection Kit

When you first open the Sumatriptan Succinate Injection Kit, the Cartridge Pack and the autoinjector Pen are already in the Carrying Case for your convenience.



The grey and blue **Carrying Case** is used for storing the **unloaded** autoinjector Pen and the Cartridge Pack when they are not being used.

- The **Cartridge Pack** holds 2 individually sealed **Syringe Cartridges**. Each Syringe Cartridge holds 1 dose of Sumatriptan Succinate Injection.
- The Cartridge Pack for the 4-mg strength of this medicine is yellow.
- The Cartridge Pack for the 6-mg strength is blue (as shown).

- Refill Cartridge Packs are available.

Important Things to Know About Your Sumatriptan Succinate Injection Kit

- Before you use Sumatriptan Succinate Injection Kit your healthcare provider should show you or your caregiver how to give an injection the right way.
- The **Pen** is used to automatically inject 1 dose of medicine from a Syringe Cartridge.
- Before you load a Syringe Cartridge, always check to make sure that the **white Priming Rod is not sticking out from the end of the Pen (as shown below in Figure B)**. If it is sticking out, you will lose that dose.
- **Do not touch the Blue Button** until you have pressed the Pen **firmly** against your skin to give a dose.
- The Pen will only work when the Safety Catch is released. To release the Safety Catch, you must press the Pen firmly against your skin until the grey part of the barrel slides against the blue part and it cannot be pressed any further. The grey part of the barrel must stay in contact with the blue part while you inject your medicine.
- When you inject the dose, make sure the Pen stays in contact with your skin during the injection. It is important to hold the Pen against the skin for at least 5 seconds.
- After each use the Pen must be put back into the Carrying Case to reset the white Priming Rod before the next use.

How to load the Pen

Do not load the Pen until you are ready to give yourself an injection.

Do not touch the Blue Button on top of the Pen (see Figure A) while you are loading the Pen.

1. Open the lid of the Carrying Case.
 - Your new Carrying Case will come with 2 Syringe Cartridges already inside.
 - The tamper-evident seals over the 2 Syringe Cartridges are labeled “A” and “B” (see Figure A).
 - Always use the Syringe Cartridge marked “A” before the one marked “B” to help you keep track of your doses. Do not use if either seal **is broken or missing when you first open the Carrying Case**.
- Check the expiration date on the Cartridge Pack. **Do not** use if expired.



Figure A

2. Tear off one of the tamper-evident seals (**see Figure A**). Throw away the seal. Open the lid over the Syringe Cartridge.
3. Hold the Pen by the ridges at the top. Take the Pen out of the Carrying Case (**see Figure B**). Check to make sure the white Priming Rod is not sticking out from the lower end of the Pen (**see Figure B**). If it is sticking out, put the Pen back into the Carrying Case and press down firmly until you feel it click. Take the Pen out of the Carrying Case.



Figure B

- Put the Pen in the open Cartridge Pack. Turn it to the right (clockwise) until it will not turn any more (about half a turn) (**see Figure C**).



Figure C

- Hold the loaded Pen by the ridges and pull it **straight out** (**see Figure D**). You may need to pull hard on the Pen, but this is normal. **Do not** press the Blue Button yet.



Figure D

The Pen is now ready to use. **Do not** put the loaded Pen back into the Carrying Case because that will damage the needle.

How to use the Pen to take your medicine

- Choose and Prepare the Injection Site.**
 - Before injecting your medicine, choose one area with a fatty tissue layer (**see Figure E or Figure F**).
 - Ask your healthcare provider if you have a question about where to inject your medicine.

- To prepare the area of skin where Sumatriptan Succinate is to be injected, wipe the injection site with an alcohol swab.
- Do not touch this area again before giving the injection. Be sure to change the injection site with each dose.



Figure E



Figure F

7. **Inject with the Pen.**

- Without pushing the Blue Button, **press the loaded Pen firmly against the skin so that the grey part of the barrel slides against the blue part until it cannot be pressed any further. Make sure the grey part of the barrel stays in contact with the blue part that holds the Syringe Cartridge.** This releases the Safety Catch that keeps the Pen from giving your injection by mistake or until you are ready (see Figure F).
- **With the Pen still pressed firmly against the skin, push the Blue Button (see Figure G).**
- Hold the Pen still for **at least 5 seconds against the skin.** If the Pen is taken away from your skin too soon, you will not receive all the medicine or it may leak out of the Pen.



Figure G

8. **Remove Pen from your skin.**

- **After 5 seconds,** carefully take the Pen away from your skin. The needle will be showing (see Figure H).
- **Do not touch the needle.**



Figure H

How to unload the Pen after taking your medicine

Right after you complete your injection with the Pen, you need to return the used Syringe Cartridge to the Cartridge Pack.

9. Push the Pen down into the empty side of the Cartridge Pack as far as it will go (**see Figure I**).



Figure I

10. Turn the Pen to the left (counterclockwise) about half a turn until it is released from the Syringe Cartridge (**see Figure J**).



Figure J

11. Pull the empty Pen out of the Cartridge Pack.
 - Because the Pen has now been used, the white Priming Rod will stick out from the lower end of the Pen (see **Figure K**).



Figure K

12. Close the Cartridge Pack lid over the used Syringe Cartridge.
 - When the used Syringe Cartridges are inserted correctly, the Cartridge Pack is a disposable, protective case to help you avoid needle sticks.
13. Put the Pen back into the Carrying Case and press it down firmly until you feel it click.
 - **This step is important to reset the Pen so that the white Priming Rod does not stick out and to get the Pen ready for the next use.**
14. Close the Carrying Case lid.
 - If the lid will not close, push the Pen down until you feel it click. Then close the lid.

How to take out a used Cartridge Pack

After both Syringe Cartridges have been used, take the Cartridge Pack out of the Carrying Case. **Do not reuse or recycle a Syringe Cartridge.**

15. Open the Carrying Case lid.
16. Hold the Carrying Case with one hand and press the 2 buttons on either side of the Carrying Case (see **Figure L**).



Figure L

17. Gently pull out the Cartridge Pack with the other hand (see **Figure M**).



Figure M

18. Throw away the Cartridge Pack or dispose of it as instructed by your healthcare provider. **See “How to Dispose of your used Syringe Cartridge” below.**
There may be special state and local laws for disposing of used needles and syringes.

How to insert a new Cartridge Pack

19. Take the new Cartridge Pack out of its box. **Do not take off the tamper-evident seals (see Figure N).**



Figure N

20. Put the Cartridge Pack in the Carrying Case. Slide it down smoothly (see **Figure O**).



Figure O

21. The Cartridge Pack will click into place when the 2 buttons show through the holes in the Carrying Case (see **Figure P**). Close the lid.

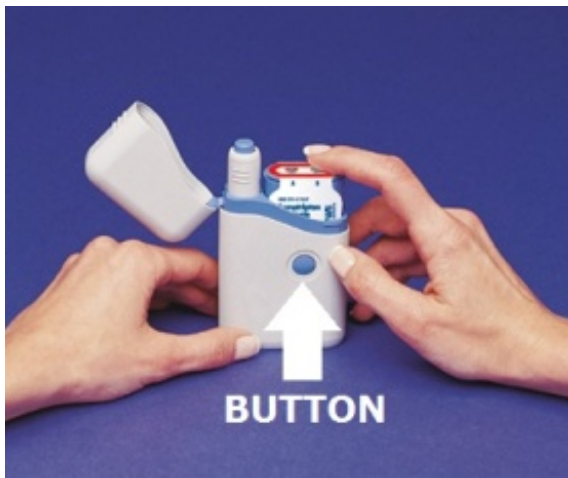


Figure P

How to dispose of your used Syringe Cartridge Pack

Put your used syringe cartridge pack in a FDA-cleared sharps disposal container right away after use (see **Figure Q**). Do not throw away (dispose of) loose needles and syringes in your household trash.



Figure Q

- If you do not have a FDA-cleared sharps disposal container, you may use a household container that is:
 - made of a heavy-duty plastic,
 - can be closed with a tight-fitting, puncture-resistant lid, without sharps being able to come out, upright and stable during use,
 - leak-resistant, and
 - properly labeled to warn of hazardous waste inside the container.
- When your sharps disposal container is almost full, you will need to follow your community guidelines for the right way to dispose of your sharps disposal container. There may be state or local laws about how you should throw away used needles and cartridges. For more information about safe sharps disposal, and for specific information about sharps disposal in the state that you

live in, go to the FDA's website at: <http://www.fda.gov/safesharpsdisposal>.

- Do not dispose of your used sharps disposal container in your household trash unless your community guidelines permit this. Do not recycle your used sharps disposal container.

This Patient Information and Instructions for Use has been approved by the U.S. Food and Drug Administration.

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Manufactured by GlaxoSmithKline

Research Triangle Park, NC 27709

for Sandoz Inc.

Princeton, NJ 08540

December 2015

SMJ-SZ:6PIL

PRINCIPAL DISPLAY PANEL

NDC 0781-3169-07

Sumatriptan Succinate Injection

4 mg

R_x only

This carton contains:

- **Sumatriptan Succinate Injection**

2 prefilled 0.5-mL syringe cartridges, each containing 4 mg of sumatriptan for subcutaneous injection only

- 1 Sumatriptan Autoinjector Pen
- 1 Carrying Case
- Instructions for Use/Information for the Patient
- Prescribing Information

SANDOZ

A Novartis company

Made in India

10000000145301 Rev. 1/17

NDC 0781-3169-07

Sumatriptan Succinate Injection

4 mg

R_x only

This carton contains:

- **Sumatriptan Succinate Injection**

2 prefilled 0.5-mL syringe cartridges, each containing 4 mg of sumatriptan for subcutaneous injection only

- 1 Sumatriptan Autoinjector Pen
- 1 Carrying Case
- Instructions for Use/
Information for the Patient
- Prescribing Information



 **SANDOZ**
a Novartis company



PRINCIPAL DISPLAY PANEL

NDC 0781-3170-07

Sumatriptan Succinate Injection

4 mg

0.5 mL

For subcutaneous injection only.

R_x only

2 Single-Dose Syringe Cartridges for Use With Sumatriptan Autoinjector Pen

SANDOZ

A Novartis company

Made in India

10000000145309 Rev. 1/17

NDC 0781-3170-07

Sumatriptan Succinate Injection

4 mg

0.5 mL

For subcutaneous injection only.

R_x only

2 Single-Dose Syringe Cartridges for Use With Sumatriptan Autoinjector Pen

 **SANDOZ**
a Novartis company



PRINCIPAL DISPLAY PANEL

NDC 0781-3172-07

Sumatriptan Succinate Injection

6 mg

R_x only

This carton contains:

- **Sumatriptan Succinate Injection**

2 prefilled 0.5-mL syringe cartridges, each containing 6 mg of sumatriptan for subcutaneous injection only

- 1 Sumatriptan Autoinjector Pen
- 1 Carrying Case
- Instructions for Use/Information for the Patient
- Prescribing Information

SANDOZ

A Novartis company

Made in India

10000000145229 Rev. 1/17

NDC 0781-3172-07

Sumatriptan Succinate Injection

6 mg

R_x only

This carton contains:

- **Sumatriptan Succinate Injection**

2 prefilled 0.5-mL syringe cartridges,
each containing 6 mg of sumatriptan
for subcutaneous injection only

- 1 Sumatriptan Autoinjector Pen
- 1 Carrying Case
- Instructions for Use/
Information for the Patient
- Prescribing Information



 **SANDOZ**
a Novartis company

PRINCIPAL DISPLAY PANEL

NDC 0781-3173-07

Sumatriptan Succinate Injection

6 mg

0.5 mL

For subcutaneous injection only.

R_x only

2 Single-Dose Syringe Cartridges for Use With Sumatriptan Autoinjector Pen

SANDOZ

A Novartis company

Made in India

10000000145254 Rev. 1/17

NDC 0781-3173-07

Sumatriptan Succinate Injection

6 mg

0.5 mL

For subcutaneous injection only.

R_x only

2 Single-Dose Syringe Cartridges for Use With Sumatriptan Autoinjector Pen

 **SANDOZ**
a Novartis company



PRINCIPAL DISPLAY PANEL

NDC 0781-3174-14

Sumatriptan Succinate Injection

6 mg

0.5 mL

For subcutaneous injection only.

Single-dose vial. Discard unused portion.

R_x only

5 Single-Dose Vials

SANDOZ

A Novartis company

Made in India

10000000146962 Rev. 11/16

NDC 0781-3174-14

Sumatriptan Succinate Injection

6 mg

0.5 mL

For subcutaneous injection only.

Single-dose vial. Discard unused portion.

R_x only

5 Single-Dose Vials

 **SANDOZ**
a Novartis company



SUMATRIPTAN SUCCINATE

sumatriptan succinate injection, solution

Product Information

Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:0781-3173
Route of Administration	SUBCUTANEOUS		

Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
SUMATRIPTAN SUCCINATE (UNII: J8BDZ68989) (SUMATRIPTAN - UNII:8R78F6L9VO)	SUMATRIPTAN	6 mg in 0.5 mL

Inactive Ingredients

Ingredient Name	Strength
SODIUM CHLORIDE (UNII: 451W47IQ8X)	
WATER (UNII: 059QF0KO0R)	

Product Characteristics

Color	YELLOW (clear, colorless to pale yellow)	Score	
Shape		Size	
Flavor		Imprint Code	
Contains			

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:0781-3173-07	2 in 1 PACKAGE	09/09/2008	
1		0.5 mL in 1 SYRINGE; Type 2: Prefilled Drug Delivery Device/System (syringe, patch, etc.)		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA020080	09/09/2008	

SUMATRIPTAN SUCCINATE

sumatriptan succinate injection, solution

Product Information

Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:0781-3174
Route of Administration	SUBCUTANEOUS		

Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
SUMATRIPTAN SUCCINATE (UNII: J8BDZ68989) (SUMATRIPTAN - UNII:8R78F6L9VO)	SUMATRIPTAN	6 mg in 0.5 mL

Inactive Ingredients

Ingredient Name	Strength
SODIUM CHLORIDE (UNII: 451W47IQ8X)	
WATER (UNII: 059QF0KO0R)	

Product Characteristics

Color	YELLOW (clear, colorless to pale yellow)	Score	
Shape		Size	
Flavor		Imprint Code	
Contains			

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:0781-3174-14	5 in 1 CARTON	09/09/2008	
1	NDC:0781-3174-71	0.5 mL in 1 VIAL; Type 0: Not a Combination Product		

Marketing Information			
Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA020080	09/09/2008	

SUMATRIPTAN SUCCINATE

sumatriptan succinate injection, solution

Product Information

Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:0781-3169
Route of Administration	SUBCUTANEOUS		

Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
SUMATRIPTAN SUCCINATE (UNII: J8BDZ68989) (SUMATRIPTAN - UNII:8R78F6L9VO)	SUMATRIPTAN	4 mg in 0.5 mL

Inactive Ingredients

Ingredient Name	Strength
SODIUM CHLORIDE (UNII: 451W47IQ8X)	
WATER (UNII: 059QF0KO0R)	

Product Characteristics

Color	YELLOW (clear, colorless to pale yellow)	Score	
Shape		Size	
Flavor		Imprint Code	
Contains			

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:0781-3169-07	1 in 1 CARTON	01/12/2012	
1		2 in 1 PACKAGE		
1		0.5 mL in 1 SYRINGE; Type 2: Prefilled Drug Delivery Device/System (syringe, patch, etc.)		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA020080	01/12/2012	

SUMATRIPTAN SUCCINATE

sumatriptan succinate injection, solution

Product Information

Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:0781-3170
Route of Administration	SUBCUTANEOUS		

Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
SUMATRIPTAN SUCCINATE (UNII: J8BDZ68989) (SUMATRIPTAN - UNII:8R78F6L9VO)	SUMATRIPTAN	4 mg in 0.5 mL

Inactive Ingredients

Ingredient Name	Strength
SODIUM CHLORIDE (UNII: 451W47IQ8X)	
WATER (UNII: 059QF0K00R)	

Product Characteristics

Color	YELLOW (clear, colorless to pale yellow)	Score	
Shape		Size	
Flavor		Imprint Code	
Contains			

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:0781-3170-07	2 in 1 PACKAGE	01/12/2012	
1		0.5 mL in 1 SYRINGE; Type 2: Prefilled Drug Delivery Device/System (syringe, patch, etc.)		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA020080	01/12/2012	

SUMATRIPTAN SUCCINATE

sumatriptan succinate injection, solution

Product Information

Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:0781-3172
Route of Administration	SUBCUTANEOUS		

Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
SUMATRIPTAN SUCCINATE (UNII: J8BDZ68989) (SUMATRIPTAN - UNII:8R78F6L9VO)	SUMATRIPTAN	6 mg in 0.5 mL

Inactive Ingredients

Ingredient Name	Strength
SODIUM CHLORIDE (UNII: 451W47IQ8X)	
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Color	YELLOW (clear, colorless to pale yellow)	Score	
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Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:0781-3172-07	1 in 1 CARTON	01/12/2012	
1		2 in 1 PACKAGE		
1		0.5 mL in 1 SYRINGE; Type 2: Prefilled Drug Delivery Device/System (syringe, patch, etc.)		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA020080	01/12/2012	

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