

**CENTER FOR DRUG EVALUATION AND RESEARCH**

**Approval Package for:**

***APPLICATION NUMBER:***  
**NDA 20254/S-016**

***Trade Name:*** VOLTAREN<sup>®</sup>-XR

***Generic Name:*** diclofenac sodium extended-release tablets

***Sponsor:*** Novartis

***Approval Date:*** 01/24/2006

***Indication:*** VOLTAREN<sup>®</sup>-XR (diclofenac sodium extended-release tablets) is indicated for relief of the signs and symptoms of osteoarthritis, and for relief of the signs and symptoms of rheumatoid arthritis.

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**APPLICATION NUMBER:  
NDA 20254/S-016**

## CONTENTS

### Reviews / Information Included in this NDA Review.

<b>Approval Letter</b>	<b>X</b>
<b>Other Action Letters</b>	
<b>Labeling</b>	<b>X</b>
<b>REMS</b>	
<b>Summary Review</b>	
<b>Officer/Employee List</b>	
<b>Office Director Memo</b>	
<b>Cross Discipline Team Leader Review</b>	
<b>Medical Review(s)</b>	
<b>Chemistry Review(s)</b>	
<b>Environmental Assessment</b>	
<b>Pharmacology Review(s)</b>	
<b>Statistical Review(s)</b>	
<b>Microbiology Review(s)</b>	
<b>Clinical Pharmacology/Biopharmaceutics Review(s)</b>	
<b>Other Reviews</b>	
<b>Risk Assessment and Risk Mitigation Review(s)</b>	
<b>Proprietary Name Review(s)</b>	
<b>Administrative/Correspondence Document(s)</b>	<b>X</b>

**CENTER FOR DRUG EVALUATION AND  
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*APPLICATION NUMBER:*  
**NDA 20254/S-016**

**APPROVAL LETTER**



NDA 19-201/S-035  
NDA 20-142/S-017  
NDA 20-254/S-016

Novartis Pharmaceuticals Corporation  
One Health Plaza  
East Hanover, NJ 07936-1080

Attention: Roxanne Tavakkol  
Associate Director, Drug Regulatory Affairs

Dear Ms. Tavakkol:

Please refer to your supplemental new drug applications dated July 28, 2005, received July 29, 2005, submitted under section 505(b) of the Federal Food, Drug, and Cosmetic Act for the following products:

NDA #	Supplement #	Drug
19-201	S-035	Voltaren® (diclofenac sodium) Enteric-coated Tablets
20-142	S-017	Cataflam® (diclofenac potassium) Tablets
20-254	S-016	Voltaren-XR® (diclofenac sodium) Tablets

We acknowledge receipt of your submission dated December 19, 2005 for Voltaren (diclofenac sodium) Enteric-coated Tablets.

These “Changes Being Effected in 30 days” supplemental new drug applications were submitted in response to the Agency’s letter dated June 14, 2005, requiring class labeling language for all non-selective non-steroidal anti-inflammatory drugs (NSAIDs), to include a boxed warning to address possible cardiovascular risks as well as known gastrointestinal risks, revised **CONTRAINDICATIONS, WARNINGS and PRECAUTIONS** sections of the package insert, and a **MedGuide** for NSAIDs.

We have completed our review of these applications, as amended, and they are approved, effective on the date of this letter, for use as recommended in the agreed-upon labeling text.

The final printed labeling (FPL) must be identical, and include the revisions indicated, to the enclosed labeling text for the package insert and the MedGuide. The revisions were agreed upon during a December 1, 2005 teleconference. These revisions are terms of the approval of this application.

Please submit an electronic version of the FPL according to the guidance for industry titled *Providing Regulatory Submissions in Electronic Format - NDA*. Alternatively, you may submit 20 paper copies of the FPL as soon as it is available but no more than 30 days after it is printed. Individually mount 15 of the copies on heavy-weight paper or similar material. For administrative purposes, designate this

submission "**FPL for approved supplement NDAs 19-201/S-035, 20-142/S-017, and 20-254/S-016.**" Approval of this submission by FDA is not required before the labeling is used.

If you issue a letter communicating important information about these drug products (i.e., a "Dear Health Care Professional" letter), we request that you submit a copy of the letter to this NDA and a copy to the following address:

MEDWATCH  
Food and Drug Administration  
WO 22, Room 4447  
10903 New Hampshire Avenue  
Silver Spring, MD 20993-0002

We remind you that you must comply with reporting requirements for an approved NDA (21 CFR 314.80 and 314.81).

If you have any questions, call Paul Balcer, Regulatory Project Manager, at (301) 796-1173.

Sincerely,

*{See appended electronic signature page}*

Bob Rappaport, M.D.  
Director  
Division of Anesthesia, Analgesia and  
Rheumatology Products  
Office of Drug Evaluation II  
Center for Drug Evaluation and Research

Enclosure

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**This is a representation of an electronic record that was signed electronically and  
this page is the manifestation of the electronic signature.**  
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/s/

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Bob Rappaport  
1/24/2006 05:36:57 PM

**CENTER FOR DRUG EVALUATION AND  
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*APPLICATION NUMBER:*  
**NDA 20254/S-016**

**LABELING**



T2002-XX

***Voltaren<sup>®</sup>-XR***  
***diclofenac sodium extended-release tablets***

***Tablets of 100 mg***

***Prescribing Information***

***Rx only***

**Cardiovascular Risk**

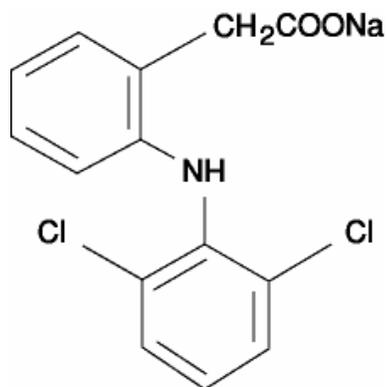
- NSAIDs may cause an increased risk of serious cardiovascular thrombotic events, myocardial infarction, and stroke, which can be fatal. This risk may increase with duration of use. Patients with cardiovascular disease or risk factors for cardiovascular disease may be at greater risk (See **WARNINGS**).
- Voltaren-XR<sup>®</sup> is contraindicated for the treatment of peri-operative pain in the setting of coronary artery bypass graft (CABG) surgery (see **WARNINGS**).

**Gastrointestinal Risk**

- NSAIDs cause an increased risk of serious gastrointestinal adverse events including bleeding, ulceration, and perforation of the stomach or intestines, which can be fatal. These events can occur at any time during use and without warning symptoms. Elderly patients are at greater risk for serious gastrointestinal events (See **WARNINGS**).

**DESCRIPTION**

Voltaren<sup>®</sup>-XR, (diclofenac sodium extended-release tablets), is a benzeneacetic acid derivative. Voltaren-XR is available as Extended-Release Tablets of 100 mg (light pink) for oral administration. The chemical name is 2-[(2,6-dichlorophenyl)amino] benzeneacetic acid, monosodium salt. The molecular weight is 318.14. Its molecular formula is C<sub>14</sub>H<sub>10</sub>Cl<sub>2</sub>NNaO<sub>2</sub>, and it has the following structural formula



The inactive ingredients in Voltaren-XR include: cetyl alcohol, hydroxypropyl methylcellulose, iron oxide, magnesium stearate, polyethylene glycol, polysorbate, povidone, silicon dioxide, sucrose, talc, titanium dioxide.

**CLINICAL PHARMACOLOGY*****Pharmacodynamics***

Voltaren<sup>®</sup>-XR (diclofenac sodium extended-release tablets), is a nonsteroidal anti-inflammatory drug (NSAID) that exhibits anti-inflammatory, analgesic, and antipyretic activities in animal models. The mechanism of action of Voltaren-XR, like that of other NSAIDs, is not completely understood but may be related to prostaglandin synthetase inhibition.

***Pharmacokinetics******Absorption***

Diclofenac is 100% absorbed after oral administration compared to IV administration as measured by urine recovery. However, due to first-pass metabolism, only about 50% of the absorbed dose is systemically available (see Table 1). When Voltaren-XR is taken with food, there is a delay of 1 to 2 hours in the T<sub>max</sub> and a two-fold increase in C<sub>max</sub> values. The extent of absorption of diclofenac, however, is not significantly affected by food intake.

**Table 1. Pharmacokinetic Parameters for Diclofenac**

PK Parameter	Normal Healthy Adults (18-48 yrs.)	
	Mean	Coefficient of Variation (%)
Absolute Bioavailability (%)	55	40

[N = 7]		
T <sub>max</sub> (hr)	5.3	28
[N = 12]		
Oral Clearance (CL/F; mL/min) [N = 12]	895	56
Renal Clearance (% unchanged drug in urine) [N = 7]	<1	—
Apparent Volume of Distribution (V/F; L/kg) [N = 56]	1.4	58
Terminal Half-life (hr) [N = 56]	2.3	48

### ***Distribution***

The apparent volume of distribution (V/F) of diclofenac sodium is 1.4 L/kg. Diclofenac is more than 99% bound to human serum proteins, primarily to albumin. Serum protein binding is constant over the concentration range (0.15-105 µg/mL) achieved with recommended doses.

Diclofenac diffuses into and out of the synovial fluid. Diffusion into the joint occurs when plasma levels are higher than those in the synovial fluid, after which the process reverses and synovial fluid levels are higher than plasma levels. It is not known whether diffusion into the joint plays a role in the effectiveness of diclofenac.

### ***Metabolism***

Five diclofenac metabolites have been identified in human plasma and urine. The metabolites include 4'-hydroxy-, 5-hydroxy-, 3'-hydroxy-, 4',5-dihydroxy- and 3'-hydroxy-4'-methoxy diclofenac. In patients with renal dysfunction, peak concentrations of metabolites 4'-hydroxy- and 5-hydroxy-diclofenac were approximately 50% and 4% of the parent compound after single oral dosing compared to 27% and 1% in normal healthy subjects. However, diclofenac metabolites undergo further glucuronidation and sulfation followed by biliary excretion.

One diclofenac metabolite 4'-hydroxy- diclofenac has very weak pharmacologic activity.

### ***Excretion***

Diclofenac is eliminated through metabolism and subsequent urinary and biliary excretion of the glucuronide and the sulfate conjugates of the metabolites. Little or no free unchanged diclofenac is excreted in the urine. Approximately 65% of the dose is excreted in the urine and approximately 35% in the bile as conjugates of unchanged diclofenac plus metabolites. Because renal elimination is not a significant pathway of elimination for unchanged diclofenac, dosing adjustment in patients with mild to moderate renal dysfunction is not necessary. The terminal half-life of unchanged diclofenac is approximately 2 hours.

### ***Special Populations***

***Pediatric:*** The pharmacokinetics of Voltaren-XR has not been investigated in pediatric patients.

**Race:** Pharmacokinetics differences due to race have not been identified.

**Hepatic Insufficiency:** Hepatic metabolism accounts for almost 100% of Voltaren-XR elimination, so patients with hepatic disease may require reduced doses of Voltaren-XR compared to patients with normal hepatic function.

**Renal Insufficiency:** Diclofenac pharmacokinetics has been investigated in subjects with renal insufficiency. No differences in the pharmacokinetics of diclofenac have been detected in studies of patients with renal impairment. In patients with renal impairment (inulin clearance 60-90, 30-60, and <30 mL/min; N=6 in each group), AUC values and elimination rate were comparable to those in healthy subjects.

## INDICATIONS AND USAGE

Carefully consider the potential benefits and risks of Voltaren-XR and other treatment options before deciding to use Voltaren-XR. Use the lowest effective dose for the shortest duration consistent with individual patient treatment goals (see **WARNINGS**).

Voltaren<sup>®</sup>-XR (diclofenac sodium extended-release tablets) is indicated:

- For relief of the signs and symptoms of osteoarthritis
- For relief of the signs and symptoms of rheumatoid arthritis

## CONTRAINDICATIONS

Voltaren<sup>®</sup>-XR (diclofenac sodium extended-release tablets) is contraindicated in patients with known hypersensitivity to diclofenac. Voltaren-XR should not be given to patients who have experienced asthma, urticaria, or allergic-type reactions after taking aspirin or other NSAIDs. Severe, rarely fatal, anaphylactic-like reactions to NSAIDs have been reported in such patients (see **WARNINGS, Anaphylactoid Reactions, and PRECAUTIONS, Preexisting Asthma**).

Voltaren<sup>®</sup>-XR is contraindicated for the treatment of peri-operative pain in the setting of coronary artery bypass graft (CABG) surgery (see **WARNINGS**).

## WARNINGS

### CARDIOVASCULAR EFFECTS

#### Cardiovascular Thrombotic Events

Clinical trials of several COX-2 selective and nonselective NSAIDs of up to three years duration have shown an increased risk of serious cardiovascular (CV) thrombotic events, myocardial infarction, and stroke, which can be fatal. All NSAIDs, both COX-2 selective and nonselective, may have a similar risk. Patients with known CV disease or risk factors for CV disease may be at greater risk. To minimize the potential risk for an adverse CV event in patients treated with an NSAID, the lowest effective dose should be used for the shortest duration possible. Physicians and patients should remain alert for the development of such events, even in the absence of previous CV symptoms. Patients should be informed about the signs and/or symptoms of serious CV events and the steps to take if they occur.

There is no consistent evidence that concurrent use of aspirin mitigates the increased risk of serious CV thrombotic events associated with NSAID use. The concurrent use of aspirin and an NSAID does increase the risk of serious GI events (see **GI WARNINGS**).

Two large, controlled, clinical trials of a COX-2 selective NSAID for the treatment of pain in the first 10-14 days following CABG surgery found an increased incidence of myocardial infarction and stroke (see **CONTRAINDICATIONS**).

### **Hypertension**

NSAIDs, including Voltaren-XR ~~including TRADENAME~~ can lead to onset of new hypertension or worsening of pre-existing hypertension, either of which may contribute to the increased incidence of CV events. Patients taking thiazides or loop diuretics may have impaired response to these therapies when taking NSAIDs. NSAIDs, including Voltaren-XR, should be used with caution in patients with hypertension. Blood pressure (BP) should be monitored closely during the initiation of NSAID treatment and throughout the course of therapy.

### **Congestive Heart Failure and Edema**

Fluid retention and edema have been observed in some patients taking NSAIDs. Voltaren-XR should be used with caution in patients with fluid retention or heart failure.

### ***Gastrointestinal Effects - Risk of Ulceration, Bleeding, and Perforation:***

NSAIDs, including Voltaren-XR, can cause serious gastrointestinal (GI) adverse events including inflammation, bleeding, ulceration, and perforation of the stomach, small intestine, or large intestine, which can be fatal. These serious adverse events can occur at any time, with or without warning symptoms, in patients treated with NSAIDs. Only one in five patients, who develop a serious upper GI adverse event on NSAID therapy, is symptomatic. Upper GI ulcers, gross bleeding, or perforation caused by NSAIDs occur in approximately 1% of patients treated for 3-6 months, and in about 2-4% of patients treated for one year. These trends continue with longer duration of use, increasing the likelihood of developing a serious GI event at some time during the course of therapy. However, even short-term therapy is not without risk.

NSAIDs should be prescribed with extreme caution in those with a prior history of ulcer disease or gastrointestinal bleeding. Patients with a *prior history of peptic ulcer disease and/or gastrointestinal bleeding* who use NSAIDs have a greater than 10-fold increased risk for developing a GI bleed compared to patients with neither of these risk factors. Other factors that increase the risk for GI bleeding in patients treated with NSAIDs include concomitant use of oral corticosteroids or anticoagulants, longer duration of NSAID therapy, smoking, use of alcohol, older age, and poor general health status. Most spontaneous reports of fatal GI events are in elderly or debilitated patients and therefore special care should be taken in treating this population.

**To minimize the potential risk for an adverse GI event in patients treated with an NSAID, the lowest effective dose should be used for the shortest possible duration.** Patients and physicians should remain alert for signs and symptoms of GI ulceration and bleeding during NSAID therapy and promptly initiate additional evaluation and treatment if a serious GI adverse event is suspected. This should include discontinuation of the NSAID until a serious GI adverse event is ruled out. For high risk patients, alternate therapies that do not involve NSAIDs should be considered.

### ***Renal Effects***

Caution should be used when initiating treatment with Voltaren-XR in patients with considerable dehydration.

Long-term administration of NSAIDs has resulted in renal papillary necrosis and other renal injury. Renal toxicity has also been seen in patients in whom renal prostaglandins have a compensatory role in the maintenance of renal perfusion. In these patients, administration of a nonsteroidal anti-inflammatory drug may cause a dose-dependent reduction in prostaglandin formation and, secondarily, in renal blood flow, which may precipitate overt renal decompensation. Patients at greatest risk of this reaction are those with impaired renal function, heart failure, liver dysfunction, those taking diuretics and ACE inhibitors, and the elderly. Discontinuation of non-steroidal anti-inflammatory drug therapy is usually followed by recovery to the pretreatment state.

### ***Advanced Renal Disease***

No information is available from controlled clinical studies regarding the use of Voltaren-XR in patients with advanced renal disease. Therefore, treatment with Voltaren-XR is not recommended in these patients with advanced renal disease. If Voltaren-XR therapy must be initiated, close monitoring of the patient's renal function is advisable.

### ***Anaphylactoid Reactions***

As with other NSAIDs, anaphylactoid reactions may occur in patients without known prior exposure to Voltaren<sup>®</sup>-XR (diclofenac sodium extended-release tablets). Voltaren-XR should not be given to patients with the aspirin triad. This symptom complex typically occurs in asthmatic patients who experience rhinitis with or without nasal polyps, or who exhibit severe, potentially fatal bronchospasm after taking aspirin or other NSAIDs. (See CONTRAINDICATIONS and PRECAUTIONS - Preexisting Asthma.) Emergency help should be sought in cases where an anaphylactoid reaction occurs.

### ***Skin Reactions***

NSAIDs, including Voltaren-XR, can cause serious skin adverse events such as exfoliative dermatitis, Stevens-Johnson Syndrome (SJS), and toxic epidermal necrolysis (TEN), which can be fatal. These serious events may occur without warning. Patients should be informed about the signs and symptoms of serious skin manifestations and use of the drug should be discontinued at the first appearance of skin rash or any other sign of hypersensitivity.

### ***Pregnancy***

In late pregnancy, as with other NSAIDs, Voltaren-XR should be avoided because it may cause premature closure of the ductus arteriosus.

## **PRECAUTIONS**

### ***General***

Voltaren<sup>®</sup>-XR (diclofenac sodium extended-release tablets) cannot be expected to substitute for corticosteroids or to treat corticosteroid insufficiency. Abrupt discontinuation of corticosteroids may lead to disease exacerbation. Patients on prolonged corticosteroid therapy should have their therapy tapered slowly if a decision is made to discontinue corticosteroids.

The pharmacological activity of Voltaren-XR in reducing fever and inflammation may diminish the utility of these diagnostic signs in detecting complications of presumed noninfectious, painful conditions.

## ***Hepatic Effects***

Borderline elevations of one or more liver tests may occur in up to 15% of patients taking NSAIDs including Voltaren-XR. These laboratory abnormalities may progress, may remain unchanged, or may be transient with continuing therapy. Based on this experience, in patients on chronic treatment with Voltaren-XR, periodic monitoring of transaminases is recommended (See PRECAUTIONS - Laboratory Tests). Notable elevations of ALT or AST (three or more times the upper limit of normal) have been reported in approximately 2%-4% of patients, including marked elevations (eight or more times the upper limit of normal) in about 1% of patients in clinical trials with diclofenac. In addition, rare cases of severe hepatic reactions, including jaundice and fatal fulminant hepatitis, liver necrosis and hepatic failure, some of them with fatal outcomes have been reported.

A patient with symptoms and/or signs suggesting liver dysfunction, or in whom an abnormal liver test has occurred, should be evaluated for evidence of the development of a more severe hepatic reaction while on therapy with Voltaren-XR. If clinical signs and symptoms consistent with liver disease develop, or if systemic manifestations occur (e.g., eosinophilia, rash, etc.), Voltaren-XR should be discontinued.

## ***Hematological Effects***

Anemia is sometimes seen in patients receiving NSAIDs, including Voltaren-XR. This may be due to fluid retention, GI loss, or an incompletely described effect upon erythropoiesis. Patients on long-term treatment with NSAIDs, including Voltaren-XR, should have their hemoglobin or hematocrit checked if they exhibit any signs or symptoms of anemia.

NSAIDs inhibit platelet aggregation and have been shown to prolong bleeding time in some patients. Unlike aspirin, their effect on platelet function is quantitatively less, of shorter duration, and reversible. Patients receiving Voltaren-XR who may be adversely affected by alterations in platelet function, such as those with coagulation disorders or patients receiving anticoagulants, should be carefully monitored.

## ***Preexisting Asthma***

Patients with asthma may have aspirin-sensitive asthma. The use of aspirin in patients with aspirin-sensitive asthma has been associated with severe bronchospasm which can be fatal. Since cross-reactivity, including bronchospasm, between aspirin and other nonsteroidal anti-inflammatory drugs has been reported in such aspirin-sensitive patients, Voltaren-XR should not be administered to patients with this form of aspirin sensitivity and should be used with caution in all patients with preexisting asthma.

## ***Information for Patients***

**Patients should be informed of the following information before initiating therapy with an NSAID and periodically during the course of ongoing therapy. Patients should also be encouraged to read the NSAID Medication Guide that accompanies each prescription dispensed.**

1. Voltaren-XR, like other NSAIDs, may cause serious CV side effects, such as MI or stroke, which may result in hospitalization and even death. Although serious CV events can occur without warning symptoms, patients should be alert for the signs and symptoms of chest pain, shortness of breath, weakness, slurring of speech, and should ask for medical advice when observing any indicative sign or symptoms. Patients should be apprised of the importance of this follow-up (see **WARNINGS, CARDIOVASCULAR EFFECTS**).

2. Voltaren-XR, like other NSAIDs, can cause GI discomfort and, rarely, more serious GI side effects, such as ulcers and bleeding, which may result in hospitalization and even death. Although serious GI tract ulcerations and bleeding can occur without warning symptoms, patients should be alert for the signs and symptoms of ulcerations and bleeding, and should ask for medical advice when observing any indicative sign or symptoms including epigastric pain, dyspepsia, melena, and hematemesis. Patients should be apprised of the importance of this follow-up (see **WARNINGS, Gastrointestinal Effects: Risk of Ulceration, Bleeding, and Perforation**).
3. Voltaren-XR, like other NSAIDs, can cause serious skin side effects such as exfoliative dermatitis, SJS, and TEN, which may result in hospitalizations and even death. Although serious skin reactions may occur without warning, patients should be alert for the signs and symptoms of skin rash and blisters, fever, or other signs of hypersensitivity such as itching, and should ask for medical advice when observing any indicative signs or symptoms. Patients should be advised to stop the drug immediately if they develop any type of rash and contact their physicians as soon as possible.
4. Patients should promptly report signs or symptoms of unexplained weight gain or edema to their physicians.
5. Patients should be informed of the warning signs and symptoms of hepatotoxicity (e.g., nausea, fatigue, lethargy, pruritus, jaundice, right upper quadrant tenderness, and “flu-like” symptoms). If these occur, patients should be instructed to stop therapy and seek immediate medical therapy.
6. Patients should be informed of the signs of an anaphylactoid reaction (e.g., difficulty breathing, swelling of the face or throat). If these occur, patients should be instructed to seek immediate emergency help (see **WARNINGS**).
7. In late pregnancy, as with other NSAIDs, Voltaren-XR should be avoided because it ~~will~~may cause premature closure of the ductus arteriosus.

### **Laboratory Tests**

Because serious GI tract ulcerations and bleeding can occur without warning symptoms, physicians should monitor for signs or symptoms of GI bleeding. In patients on long-term treatment with NSAIDs, including Voltaren-XR, the CBC and a chemistry profile (including transaminase levels) should be checked periodically. If clinical signs and symptoms consistent with liver or renal disease develop, systemic manifestations occur (e.g., eosinophilia, rash, etc.) or if abnormal liver tests persist or worsen, Voltaren-XR should be discontinued.

### **Drug Interactions**

**Aspirin:** When Voltaren-XR is administered with aspirin, its protein binding is reduced. The clinical significance of this interaction is not known; however, as with other NSAIDs, concomitant administration of diclofenac and aspirin is not generally recommended because of the potential of increased adverse effects.

**Methotrexate:** NSAIDs have been reported to competitively inhibit methotrexate accumulation in rabbit kidney slices. This may indicate that they could enhance the toxicity of methotrexate. Caution should be used when NSAIDs are administered concomitantly with methotrexate.

**Cyclosporine:** Voltaren-XR, like other NSAIDs, may affect renal prostaglandins and increase the toxicity of certain drugs. Therefore, concomitant therapy with Voltaren-XR may increase cyclosporine's nephrotoxicity. Caution should be used when Voltaren-XR is administered concomitantly with cyclosporine.

**ACE-inhibitors:** Reports suggest that NSAIDs may diminish the antihypertensive effect of ACE-inhibitors. This interaction should be given consideration in patients taking NSAIDs concomitantly with ACE-inhibitors.

**Furosemide/Diuretics:** Clinical studies, as well as post marketing observations, have shown that Voltaren-XR can reduce the natriuretic effect of furosemide and thiazides in some patients. This response has been attributed to inhibition of renal prostaglandin synthesis. During concomitant therapy with NSAIDs, the patient should be observed closely for signs of renal failure (see **PRECAUTIONS, Renal Effects**), as well as to assure diuretic efficacy.

**Lithium:** NSAIDs have produced an elevation of plasma lithium levels and a reduction in renal lithium clearance. The mean minimum lithium concentration increased 15% and the renal clearance was decreased by approximately 20%. These effects have been attributed to inhibition of renal prostaglandin synthesis by the NSAID. Thus, when NSAIDs and lithium are administered concurrently, subjects should be observed carefully for signs of lithium toxicity.

**Warfarin:** The effects of warfarin and NSAIDs on GI bleeding are synergistic, such that users of both drugs together have a risk of serious GI bleeding higher than users of either drug alone.

## **Pregnancy**

### **Teratogenic Effects: Pregnancy Category C**

Reproductive studies conducted in rats and rabbits have not demonstrated evidence of developmental abnormalities. However, animal reproduction studies are not always predictive of human response. There are no adequate and well-controlled studies in pregnant women. Voltaren should be used in pregnancy only if the potential benefit justifies the potential risk to the fetus.

### **Nonteratogenic Effects**

Because of the known effects of nonsteroidal anti-inflammatory drugs on the fetal cardiovascular system (closure of ductus arteriosus), use during pregnancy (particularly late pregnancy) should be avoided.

### **Labor and Delivery**

In rat studies with NSAIDs, as with other drugs known to inhibit prostaglandin synthesis, an increased incidence of dystocia, delayed parturition, and decreased pup survival occurred. The effects of Voltaren-XR on labor and delivery in pregnant women are unknown.

## ***Nursing Mothers***

It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants from Voltaren-XR, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

## ***Pediatric Use***

Safety and effectiveness in pediatric patients have not been established.

## ***Geriatric Use***

As with any NSAIDs, caution should be exercised in treating the elderly (65 years and older).

### **ADVERSE REACTIONS**

In patients taking Voltaren<sup>®</sup>-XR (diclofenac sodium extended-release tablets) or other NSAIDs, the most frequently reported adverse experiences occurring in approximately 1%-10% of patients are:

Gastrointestinal experiences including: abdominal pain, constipation, diarrhea, dyspepsia, flatulence, gross bleeding/perforation, heartburn, nausea, GI ulcers (gastric/duodenal) and vomiting.

Abnormal renal function, anemia, dizziness, edema, elevated liver enzymes, headaches, increased bleeding time, pruritus, rashes and tinnitus.

Additional adverse experiences reported occasionally include:

***Body as a Whole:*** fever, infection, sepsis

***Cardiovascular System:*** congestive heart failure, hypertension, tachycardia, syncope

***Digestive System:*** dry mouth, esophagitis, gastric/peptic ulcers, gastritis, gastrointestinal bleeding, glossitis, hematemesis, hepatitis, jaundice

***Hemic and Lymphatic System:*** ecchymosis, eosinophilia, leukopenia, melena, purpura, rectal bleeding, stomatitis, thrombocytopenia

***Metabolic and Nutritional:*** weight changes

***Nervous System:*** anxiety, asthenia, confusion, depression, dream abnormalities, drowsiness, insomnia, malaise, nervousness, paresthesia, somnolence, tremors, vertigo

***Respiratory System:*** asthma, dyspnea

***Skin and Appendages:*** alopecia, photosensitivity, sweating increased

***Special Senses:*** blurred vision

***Urogenital System:*** cystitis, dysuria, hematuria, interstitial nephritis, oliguria/polyuria, proteinuria, renal failure.

Other adverse reactions, which occur rarely are:

***Body as a Whole:*** anaphylactic reactions, appetite changes, death

***Cardiovascular System:*** arrhythmia, hypotension, myocardial infarction, palpitations, vasculitis

***Digestive System:*** colitis, eructation, liver failure, pancreatitis

**Hemic and Lymphatic System:** agranulocytosis, hemolytic anemia, aplastic anemia, lymphadenopathy, pancytopenia

**Metabolic and Nutritional:** hyperglycemia

**Nervous System:** convulsions, coma, hallucinations, meningitis

**Respiratory System:** respiratory depression, pneumonia

**Skin and Appendages:** angioedema, toxic epidermal necrolysis, erythema multiforme, exfoliative dermatitis, Stevens-Johnson syndrome, urticaria

**Special Senses:** conjunctivitis, hearing impairment.

## OVERDOSAGE

Symptoms following acute NSAID overdoses are usually limited to lethargy, drowsiness, nausea, vomiting, and epigastric pain, which are generally reversible with supportive care. Gastrointestinal bleeding can occur. Hypertension, acute renal failure, respiratory depression and coma may occur, but are rare. Anaphylactoid reactions have been reported with therapeutic ingestion of NSAIDs, and may occur following an overdose.

Patients should be managed by symptomatic and supportive care following a NSAID overdose. There are no specific antidotes. Emesis and/or activated charcoal (60 to 100 g in adults, 1 to 2 g/kg in children) and/or osmotic cathartic may be indicated in patients seen within 4 hours of ingestion with symptoms or following a large overdose (5 to 10 times the usual dose). Forced diuresis, alkalinization of urine, hemodialysis, or hemoperfusion may not be useful due to high protein binding.

## DOSAGE AND ADMINISTRATION

Carefully consider the potential benefits and risks of Voltaren<sup>®</sup>-XR and other treatment options before deciding to use Voltaren<sup>®</sup>-XR. Use the lowest effective dose for the shortest duration consistent with individual patient treatment goals (see **WARNINGS**).

After observing the response to initial therapy with Voltaren<sup>®</sup>-XR (diclofenac sodium extended-release tablets), the dose and frequency should be adjusted to suit an individual patient's needs.

For the relief of osteoarthritis, the recommended dosage is 100 mg q.d.

For the relief of rheumatoid arthritis, the recommended dosage is 100 mg q.d. In the rare patient where Voltaren<sup>®</sup>-XR (diclofenac sodium extended-release tablets) 100 mg/day is unsatisfactory, the dose may be increased to 100 mg b.i.d. if the benefits outweigh the clinical risks of increased side effects.

Different formulations of diclofenac [Voltaren (diclofenac sodium enteric-coated tablets); Voltaren-XR (diclofenac sodium extended-release tablets); Cataflam (diclofenac potassium immediate-release tablets)] are not necessarily bioequivalent even if the milligram strength is the same.

**HOW SUPPLIED**

***Voltaren-XR Extended-Release Tablets***

***100 mg***

Light pink, film-coated, round, biconvex with beveled edges (imprinted Voltaren XR on one side and 100 on the other side in black ink)

Bottles of 100..... NDC 0028-0205-01

Do not store above 30°C (86°F). Protect from moisture.

*Dispense in tight container (USP).*

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Manufactured by:  
Novartis Pharma Stein AG  
Stein, Switzerland For  
Novartis Pharmaceuticals Corporation  
East Hanover, NJ 07936

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**Medication Guide**

**for**

**Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)**

(See the end of this Medication Guide for a list of prescription NSAID medicines.)

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**What is the most important information I should know about medicines called Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)?**

**NSAID medicines may increase the chance of a heart attack or stroke that can lead to death.** This chance increases:

- with longer use of NSAID medicines
- in people who have heart disease

**NSAID medicines should never be used right before or after a heart surgery called a “coronary artery bypass graft (CABG).”**

**NSAID medicines can cause ulcers and bleeding in the stomach and intestines at any time during treatment. Ulcers and bleeding:**

- can happen without warning symptoms
- may cause death

**The chance of a person getting an ulcer or bleeding increases with:**

- taking medicines called “corticosteroids” and “anticoagulants”
- longer use
- smoking
- drinking alcohol
- older age
- having poor health

**NSAID medicines should only be used:**

- exactly as prescribed
- at the lowest dose possible for your treatment
- for the shortest time needed

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### **What are Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)?**

NSAID medicines are used to treat pain and redness, swelling, and heat (inflammation) from medical conditions such as:

- different types of arthritis
- menstrual cramps and other types of short-term pain

### **Who should not take a Non-Steroidal Anti-Inflammatory Drug (NSAID)?**

**Do not take an NSAID medicine:**

- if you had an asthma attack, hives, or other allergic reaction with aspirin or any other NSAID medicine
- for pain right before or after heart bypass surgery

**Tell your healthcare provider:**

- about all your medical conditions.
- about all of the medicines you take. NSAIDs and some other medicines can interact with each other and cause serious side effects. **Keep a list of your medicines to show to your healthcare provider and pharmacist.**
- if you are pregnant. **NSAID medicines should not be used by pregnant women late in their pregnancy.**
- if you are breastfeeding. **Talk to your doctor.**

**What are the possible side effects of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)?**

<p><b>Serious side effects include:</b></p> <ul style="list-style-type: none"> <li>• heart attack</li> <li>• stroke</li> <li>• high blood pressure</li> <li>• heart failure from body swelling (fluid retention)</li> <li>• kidney problems including kidney failure</li> <li>• bleeding and ulcers in the stomach and intestine</li> <li>• low red blood cells (anemia)</li> <li>• life-threatening skin reactions</li> <li>• life-threatening allergic reactions</li> <li>• liver problems including liver failure</li> <li>• asthma attacks in people who have asthma</li> </ul>	<p><b>Other side effects include:</b></p> <ul style="list-style-type: none"> <li>• stomach pain</li> <li>• constipation</li> <li>• diarrhea</li> <li>• gas</li> <li>• heartburn</li> <li>• nausea</li> <li>• vomiting</li> <li>• dizziness</li> </ul>
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**Get emergency help right away if you have any of the following symptoms:**

- shortness of breath or trouble breathing
- chest pain
- weakness in one part or side of your body
- slurred speech
- swelling of the face or throat

**Stop your NSAID medicine and call your healthcare provider right away if you have any of the following symptoms:**

- nausea
- more tired or weaker than usual
- itching
- your skin or eyes look yellow
- stomach pain
- flu-like symptoms
- vomit blood
- there is blood in your bowel movement or it is black and sticky like tar
- unusual weight gain
- skin rash or blisters with fever
- swelling of the arms and legs, hands and feet

These are not all the side effects with NSAID medicines. Talk to your healthcare provider or pharmacist for more information about NSAID medicines.

**Other information about Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)**

- Aspirin is an NSAID medicine but it does not increase the chance of a heart attack. Aspirin can cause bleeding in the brain, stomach, and intestines. Aspirin can also cause ulcers in the stomach and intestines.
- Some of these NSAID medicines are sold in lower doses without a prescription (over-the-counter). Talk to your healthcare provider before using over-the-counter NSAIDs for more than 10 days.

**NSAID medicines that need a prescription**

Generic Name	Tradename
Celecoxib	Celebrex
Diclofenac	Cataflam, Voltaren, Arthrotec (combined with misoprostol)
Diflunisal	Dolobid

<b>Generic Name</b>	<b>Tradename</b>
Etodolac	Lodine, Lodine XL
Fenoprofen	Nalfon, Nalfon 200
Flurbiprofen	Ansaid
Ibuprofen	Motrin, Tab-Profen, Vicoprofen (combined with hydrocodone), Combunox (combined with oxycodone)
Indomethacin	Indocin, Indocin SR, Indo-Lemmon, Indomethagan
Ketoprofen	Oruvail
Ketorolac	Toradol
Mefenamic Acid	Ponstel
Meloxicam	Mobic
Nabumetone	Relafen
Naproxen	Naprosyn, Anaprox, Anaprox DS, EC-Naproxyn, Naprelan, Naprapac (copackaged with lansoprazole)
Oxaprozin	Daypro
Piroxicam	Feldene
Sulindac	Clinoril
Tolmetin	Tolectin, Tolectin DS, Tolectin 600

*This Medication Guide has been approved by the U.S. Food and Drug Administration.*

**CENTER FOR DRUG EVALUATION AND  
RESEARCH**

*APPLICATION NUMBER:*  
**NDA 20254/S-016**

**ADMINISTRATIVE and CORRESPONDENCE  
DOCUMENTS**



NDA 19-201/S-035  
NDA 20-142/S-017  
NDA 20-254/S-016

**CBE-30 SUPPLEMENT**

Novartis Pharmaceuticals Corporation  
One Health Plaza  
East Hanover, NJ 07936-1080

Attention: Roxanne Tavakkol  
Associate Director, Drug Regulatory Affairs

Dear Ms. Tavakkol:

We have received your supplemental new drug application dated July 28, 2005, received July 29, 2005, submitted under section 505(b) of the Federal Food, Drug, and Cosmetic Act for the following products:

NDA #	Supplement #	Drug
19-201	S-035	Voltaren <sup>®</sup> (diclofenac sodium) Enteric-coated Tablets
20-142	S-017	Cataflam <sup>®</sup> (diclofenac potassium) Tablets
20-254	S-016	Voltaren-XR <sup>®</sup> (diclofenac sodium) Tablets

These supplemental applications, submitted as "Supplement – Changes Being Effected in 30 days," propose changes to labeling, as recommended by FDA's June 14, 2005 letter, to include more specific information for practitioners, patients, family members, and caregivers about potential risks of cardiovascular (CV) and gastrointestinal (GI) adverse effects for patients taking Voltaren<sup>®</sup>, Voltaren-XR<sup>®</sup> and Cataflam<sup>®</sup> and to include a description of early symptoms associated with Stevens-Johnson Syndrome (SJS).

Unless we notify you within 60 days of the receipt date that the applications are not sufficiently complete to permit a substantive review, we will file the applications on September 29, 2005 in accordance with 21 CFR 314.101(a).

Send all electronic or mixed electronic and paper submissions to the Central Document Room at the following address:

Food and Drug Administration  
Center for Drug Evaluation and Research  
Central Document Room (CDR)  
5901-B Ammendale Road  
Beltsville, MD 20705-1266

If your submission only contains paper, send it to the following address:

Courier/Overnight Mail /U.S. Postal Service:  
Center for Drug Evaluation and Research  
Division of Anesthesia, Analgesia  
and Rheumatology Products  
Attention: Document Room  
9201 Corporate Blvd  
Rockville, MD 20850

If you have any questions, call Paul Balcer, Regulatory Project Manager, at (301) 827-2090.

Sincerely,

*{See appended electronic signature page}*

Parinda Jani  
Chief, Project Management Staff  
Division of Anesthesia, Analgesia  
And Rheumatology Products  
Office of Drug Evaluation II  
Center for Drug Evaluation and Research

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**This is a representation of an electronic record that was signed electronically and  
this page is the manifestation of the electronic signature.**  
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/s/

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Parinda Jani

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