Product Summary

1. Name of the medicinal product
Myoheal – D®

2. Qualitative and quantitative composition
Each enteric coated tablet contains:
Trypsin BP 48 mg
Bromelain 90 mg
Rutoside Trihydrate BP 100 mg
Diclofenac sodium IP 50 mg
Total proteolytic activity not less than 1095 FIP units per tablet. (Papain method)
Myoheal – D® contains a combination of two proteolytic enzymes Trypsin and Bromelain together with plant flavonoid Rutoside. This combination has anti-inflammatory properties.

3. Pharmaceutical form
Enteric coated tablet

4. Clinical particulars
4.1 Therapeutic indications
Myoheal – D® is indicated for treatment of edema and inflammation of traumatic origin such as contusions, lacerations and cuts. It is also indicated for treatment of edema and inflammation following surgery, tooth extraction, cellulitis, abscess, sport injuries and sprains. Myoheal – D® is indicated for inflammatory episodes of rheumatic and degenerative conditions, such as Rheumatoid Arthritis, osteoarthritis, Spondylopathies, Tendonitis and Bursitis. Temporary relief from aches, pains and muscle soreness due to everyday activity.
4.2 Posology and method of administration

Posology
As recommended by the physician. The recommended maximum daily dose of diclofenac is 150mg.

Special populations

Elderly
Although the pharmacokinetics of Diclofenac are not impaired to any clinically relevant extent in elderly patients, nonsteroidal anti-inflammatory drugs should be used with particular caution in such patients who generally are more prone to adverse reactions. In particular, it is recommended that the lowest effective dosage be used in frail elderly patients or those with a low body weight (see also precautions) and the patient should be monitored for GI bleeding during NSAID therapy.

Renal impairment
Diclofenac is contraindicated in patients with severe renal impairment (see section 4.3). No specific studies have been carried out in patients with renal impairment, therefore, no specific dose adjustment recommendations can be made. Caution is advised when administering diclofenac to patients with mild to moderate renal impairment (see section 4.3 and 4.4).

Hepatic impairment
Diclofenac is contraindicated in patients with severe hepatic impairment (see section 4.3). No specific studies have been carried out in patients with hepatic impairment, therefore, no specific dose adjustment recommendations can be made. Caution is advised when administering diclofenac to patients with mild to moderate hepatic impairment (see section 4.3 and 4.4).

Paediatric population
Not recommended

4.3 Contraindications
• Myoheal – D® must not be used in case of known hypersensitivity to its active ingredients.
• The preparation must not be used by patients with severe inborn or gained coagulation disorders (e.g. hemophilia, severe liver damage, dialyzed patients).
• Active, gastric or intestinal ulcer, bleeding or perforation
• History of gastrointestinal bleeding or perforation, relating to previous NSAID therapy
• Active, or history of recurrent peptic ulcer/haemorrhage (two or more distinct episodes of proven ulceration or bleeding)
• Last trimester of pregnancy (see section 4.6 Pregnancy and lactation)
• Severe hepatic, renal or cardiac failure (see section 4.4 Special warnings and precautions for use).
• Like other non-steroidal anti-inflammatory drugs (NSAIDs), diclofenac is also contraindicated in patients in whom attacks of asthma, angioedema, urticaria or acute rhinitis are precipitated by ibuprofen, acetylsalicylic acid or other nonsteroidal anti-inflammatory drugs.
• Established congestive heart failure (NYHA II-IV), ischemic heart disease, peripheral arterial disease and/or cerebrovascular disease.

4.4 Special warnings and precautions for use

**General**

Undesirable effects may be minimised by using the lowest effective dose for the shortest duration necessary to control symptoms (see section 4.2 Posology and method of administration and GI and cardiovascular risks below).

The concomitant use of Diclofenac with systemic NSAIDs including cyclooxygenase-2 selective inhibitors should be avoided due to the absence of any evidence demonstrating synergistic benefits and the potential for additive undesirable effects (see section 4.5 Interactions with other medicaments and other forms of interaction).

Caution is indicated in the elderly on basic medical grounds. In particular, it is recommended that the lowest effective dose be used in frail elderly patients or those with a low body weight (see section 4.2 Posology and Method of administration).

As with other nonsteroidal anti-inflammatory drugs including diclofenac, allergic reactions, including anaphylactic / anaphylactoid reactions, can also occur without earlier exposure to the drug (see section 4.8 Undesirable effects). Like other NSAIDs, diclofenac may mask the signs and symptoms of the infection due to its
pharmacodynamic properties.

**Gastrointestinal effects:**

Gastrointestinal bleeding (haematemesis, melaena) ulceration or perforation which can be fatal has been reported with all NSAIDs including diclofenac and may occur at any time during treatment, with or without warning symptoms or a previous history of serious GI events. They generally have more serious consequences in the elderly. If gastrointestinal bleeding or ulceration occurs in patients receiving diclofenac, the drug should be withdrawn.

As with all NSAIDs, including diclofenac close medical surveillance is imperative and particular caution should be excised when prescribing diclofenac in patients with symptoms indicative of gastrointestinal disorders, or with a history suggestive of gastric or intestinal ulceration, bleeding or perforation (see section 4.8 Undesirable effects). The risk of GI bleeding, ulceration or perforation is higher with increasing NSAID doses including diclofenac, and in patients with a history of ulcer, particularly if complicated with haemorrhage or perforation.

The elderly have increased frequency of adverse reactions to NSAIDs especially gastrointestinal bleeding and perforation which may be fatal (see section 4.2 Posology and method of administration). To reduce the risk of GI toxicity in patients with a history of ulcer, particularly if complicated with haemorrhage or perforation, and in the elderly, the treatment should be initiated and maintained at the lowest effective dose.

Combination therapy with protective agents (e.g. misoprostol or proton pump inhibitors) should be considered for these patients, and also for patients requiring concomitant use of medicinal products containing low dose acetylsalicylic acid (ASA/aspirin or medicinal products likely to increase gastrointestinal risk. (See section 4.5 Interactions with other medicaments and other forms of interaction).

Patients with a history of GI toxicity, particularly when elderly, should report any unusual abdominal symptoms (especially GI bleeding).

Caution is recommended in patients receiving concomitant medications which could increase the risk of ulceration or bleeding, such as systemic corticosteroids, anticoagulants such as warfarin, selective serotonin-reuptake inhibitors (SSRIs) or anti-platelet agents such as acetylsalicylic acid (see section 4.5 Interaction with other medicaments and other forms of interaction).

Close medical surveillance and caution should be exercised in patients with ulcerative
colitis, or with Crohn's disease as these conditions may be exacerbated (see section 4.8 Undesirable effects).

**Hepatic effects:**
Close medical surveillance is required when prescribing Diclofenac to patients with impairment of hepatic function as their condition may be exacerbated. As with other NSAIDs, including diclofenac, values of one or more liver enzymes may increase. During prolonged treatment with Diclofenac, regular monitoring of hepatic function is indicated as a precautionary measure.

If abnormal liver function tests persist or worsen, clinical signs or symptoms consistent with liver disease develop or if other manifestations occur (eosinophilia, rash), Diclofenac should be discontinued. Hepatitis may occur with diclofenac without prodromal symptoms. Caution is called for when using diclofenac in patients with hepatic porphyria, since it may trigger an attack.

**Renal effects:**
As fluid retention and oedema have been reported in association with NSAIDs therapy, including diclofenac, particular caution is called for in patients with impaired cardiac or renal function, history of hypertension, the elderly, patients receiving concomitant treatment with diuretics or medicinal products that can significantly impact renal function, and those patients with substantial extracellular volume depletion from any cause, e.g. before or after major surgery (see section 4.3 Contraindications). Monitoring of renal function is recommended as a precautionary measure when using diclofenac in such cases. Discontinuation therapy is usually followed by recovery to the pre-treatment state.

**Skin effects:**
Serious skin reactions, some of them fatal, including exfoliative dermatitis, Stevens-Johnson syndrome and toxic epidermal necrolysis, have been reported very rarely in association with the use of NSAIDs, including Diclofenac (see section 4.8 Undesirable effects). Patients appear to be at the highest risk of these reactions early in the course of therapy: the onset of the reaction occurring in the majority of cases within the first month of treatment. Diclofenac should be discontinued at the first appearance of skin rash, mucosal lesions or any other signs of hypersensitivity.
SLE and mixed connective tissue disease:
In patients with systemic lupus erythematosus (SLE) and mixed connective tissue disorders there may be an increased risk of aseptic meningitis (see section 4.8 Undesirable effects).

**Cardiovascular and cerebrovascular effects:**
Patients with significant risk factors for cardiovascular events (e.g. hypertension, hyperlipidaemia, diabetes mellitus, smoking) should only be treated with diclofenac after careful consideration. As the cardiovascular risks of diclofenac may increase with dose and duration of exposure, the shortest duration possible and the lowest effective daily dose should be used. The patient's need for symptomatic relief and response to therapy should be re-evaluated periodically.

Appropriate monitoring and advice are required for patients with a history of hypertension and/or mild to moderate congestive heart failure as fluid retention and oedema have been reported in association with NSAID therapy including diclofenac. Clinical trial and epidemiological data consistently point towards increased risk of arterial thrombotic events (for example myocardial infarction or stroke) associated with the use of diclofenac, particularly at high dose (150mg daily) and in long term treatment.

Patients with uncontrolled hypertension, congestive heart failure, established ischaemic heart disease, peripheral arterial disease, and/or cerebrovascular disease should only be treated with diclofenac after careful consideration.

**Haematological effects:**
During prolonged treatment with diclofenac, as with other NSAIDs, monitoring of the blood count is recommended.

Diclofenac may reversibly inhibit platelet aggregation (see anticoagulants in section 4.5 Interaction with other medicaments and other forms of interactions). Patients with defects of haemostasis, bleeding diathesis or haematological abnormalities should be carefully monitored.

**Pre-existing asthma:**
In patients with asthma, seasonal allergic rhinitis, swelling of the nasal mucosa (i.e. nasal polyps), chronic obstructive pulmonary diseases or chronic infections of the
respiratory tract (especially if linked to allergic rhinitis-like symptoms), reactions on NSAIDs like asthma exacerbations (so called intolerance to analgesics / analgesics asthma), Quincke's oedema or urticaria are more frequent than in other patients. Therefore, special precaution is recommended in such patients (readiness for emergency). This is applicable as well for patients who are allergic to other substances, e.g. with skin reactions, pruritus or urticaria. Like other drugs that inhibit prostaglandin synthetase activity, diclofenac sodium and other NSAIDs can precipitate bronchospasm if administered to patients suffering from, or with a previous history of bronchial asthma.

**Female fertility:**
The use of Diclofenac may impair female fertility and is not recommended in women attempting to conceive. In women who may have difficulties conceiving or who are undergoing investigation of infertility, withdrawal of Diclofenac should be considered (see section 4.6 Pregnancy and Lactation).

### 4.5 Interaction with other medicinal products and other forms of interaction
No clinical trials have been conducted to evaluate the drug interaction of Myoheal – D®. The following interactions include those observed with diclofenac gastro-resistant tablets and/or other pharmaceutical forms of diclofenac.

**Lithium:** If used concomitantly, Diclofenac may increase plasma concentrations of lithium Monitoring of the serum lithium level is recommended.

**Digoxin:** If used concomitantly, Diclofenac may raise plasma concentrations of digoxin. Monitoring of the serum digoxin level is recommended.

**Diuretics and antihypertensive agents:** Like other NSAIDs, concomitant use of Diclofenac with diuretics and antihypertensive agents (e.g. beta-blockers, angiotensin converting enzyme (ACE) inhibitors may cause a decrease in their antihypertensive effect via inhibition of vasodilatory prostaglandin synthesis. Therefore, the combination should be administered with caution and patients, especially the elderly, should have their blood pressure periodically monitored. Patients should be adequately hydrated and consideration should be given to monitoring of renal function after initiation of concomitant therapy periodically thereafter, particularly for diuretics and ACE inhibitors due to the increased risk of nephrotoxicity.
**Drugs known to cause hyperkalemia:** Concomitant treatment with potassium-sparing diuretics, ciclosporin, tacrolimus or trimethoprim may be associated with increased serum potassium levels, which should therefore be monitored frequently (see section 4.4 Special warnings and precautions for use).

**Anticoagulants and anti-platelet agents:** Caution is recommended since concomitant administration could increase the risk of bleeding (see section 4.4 Special warnings and precautions for use). Although clinical investigations do not appear to indicate that Diclofenac has an influence on the effect of anticoagulants, there are isolated reports of an increased risk of haemorrhage in patients receiving diclofenac and anticoagulant concomitantly (see section 4.4 Special warnings and precautions for use). Therefore, to be certain that no change in anticoagulant dosage is required, close monitoring of such patients is required. As with other nonsteroidal anti-inflammatory agents, diclofenac in a high dose can reversibly inhibit platelet aggregation.

**Other NSAIDs including cyclooxygenase-2 selective inhibitors and corticosteroids:** Co-administration of diclofenac with other systemic NSAIDs or corticosteroids may increase the risk of gastrointestinal bleeding or ulceration. Avoid concomitant use of two or more NSAIDs (see section 4.4 Special warnings and precautions for use).

**Selective serotonin reuptake inhibitors (SSRIs):** Concomitant administration of SSRIs may increase the risk of gastrointestinal bleeding (see section 4.4 Special warnings and precautions for use).

**Antidiabetics:** Clinical studies have shown that Diclofenac can be given together with oral antidiabetic agents without influencing their clinical effect. However there have been isolated reports of hypoglycaemic and hyperglycaemic effects necessitating changes in the dosage of the antidiabetic agents during treatment with diclofenac. For this reason, monitoring of the blood glucose level is recommended as a precautionary measure during concomitant therapy.

**Methotrexate:** Diclofenac can inhibit the tubular renal clearance of methotrexate hereby increasing methotrexate levels. Caution is recommended when NSAIDs, including diclofenac, are administered less than 24 hours before treatment with methotrexate, since blood concentrations of methotrexate may rise and the toxicity of this substance be increase. Cases of serious toxicity have been reported when methotrexate and NSAIDs including diclofenac are given within 24 hours of each other.
This interaction is mediated through accumulation of methotrexate resulting from impairment of renal excretion in the presence of the NSAID.

**Ciclosporin:** Diclofenac, like other NSAIDs, may increase the nephrotoxicity of ciclosporin due to the effect on renal prostaglandins. Therefore, it should be given at doses lower than those that would be used in patients not receiving ciclosporin.

**Tacrolimus:** Possible increased risk of nephrotoxicity when NSAIDs are given with tacrolimus. This might be mediated through renal antiprostaglandin effects of both NSAID and calcineurin inhibitor.

**Quinolone antibiotics:** Convulsions may occur due to an interaction between quinolones and NSAIDs. This may occur in patients with or without a previous history of epilepsy or convulsions. Therefore, caution should be exercised when considering the use of a quinolone in patients who are already receiving an NSAID.

**Phenytoin:** When using phenytoin concomitantly with diclofenac, monitoring of phenytoin plasma concentrations is recommended due to an expected increase in exposure to phenytoin.

**Colestipol and cholestyramine:** These agents can induce a delay or decrease in absorption of diclofenac. Therefore, it is recommended to administer diclofenac at least one hour before or 4 to 6 hours after administration of colestipol/cholestyramine.

**Cardiac glycosides:** Concomitant use of cardiac glycosides and NSAIDs in patients may exacerbate cardiac failure, reduce GFR and increase plasma glycoside levels.

**Mifepristone:** NSAIDs should not be used for 8-12 days after mifepristone administration as NSAIDs can reduce the effect of mifepristone.

**Potent CYP2C9 inhibitors:** Caution is recommended when co-prescribing diclofenac with potent CYP2C9 inhibitors (such as voriconazole), which could result in a significant increase in peak plasma concentrations and exposure to diclofenac due to inhibition of diclofenac metabolism.

### 4.6 Fertility, Pregnancy and lactation

**Pregnancy**

Inhibition of prostaglandin synthesis may adversely affect the pregnancy and/or the embryo/foetal development. Data from epidemiological studies suggest an increased risk of miscarriage and or cardiac malformation and gastroschisis after use of a prostaglandin synthesis inhibitor in early pregnancy. The absolute risk for cardiovascular malformation was increased from less than 1% up to approximately...
The risk is believed to increase with dose and duration of therapy. In animals, administration of a prostaglandin synthesis inhibitor has shown to result in increased pre- and post-implantation loss and embryo-foetal lethality. In addition, increased incidences of various malformations, including cardiovascular, have been reported in animals given a prostaglandin synthesis inhibitor during organogenetic period. If Diclofenac is used by a woman attempting to conceive, or during the 1st trimester of pregnancy, the dose should be kept as low and duration of treatment as short as possible.

During the third trimester of pregnancy, all prostaglandin synthesis inhibitors may expose the foetus to:
- cardiopulmonary toxicity (with premature closure of the ductus arteriosus and pulmonary hypertension)
- renal dysfunction, which may progress to renal failure with oligo-hydroamnios

The mother and the neonate, at the end of the pregnancy, to:
- possible prolongation of bleeding time, an anti-aggregating effect which may occur even at very low doses
- inhibition of uterine contractions resulting in delayed or prolonged labour

Consequently, Diclofenac is contra-indicated during the third trimester of pregnancy.

**Lactation**

Like other NSAIDs, diclofenac passes into breast milk in small amounts. Therefore, Diclofenac should not be administered during breast feeding in order to avoid undesirable effects in the infant (see section 5.2 Pharmacokinetic properties).

**Female fertility:**

As with other NSAIDs, the use of diclofenac may impair female fertility and is not recommended in women attempting to conceive. In women who may have difficulties conceiving or who are undergoing investigation of infertility, withdrawal of diclofenac should be considered.

See section 4.4 Special warnings and precautions for use, regarding female fertility.

**4.7 Effects on ability to drive and use machines**

Information is not available on the ability to drive and use machines after using Myoheal – D. However, Rutoside may cause dizziness and blurred vision that may
affect the physical functions and hence driving and use of machines may not be advisable. Patients who experience visual disturbances, dizziness, vertigo, somnolence, central nervous system disturbances, drowsiness or fatigue while taking NSAIDs should refrain from driving or operating machinery.

4.8 Undesirable effects
Myoheal – D® is usually well tolerated. Harmless alteration in the consistency, color and odor of stool may occur. A sensation of fullness, flatulence, and occasional episodes of nausea are possible during high-dosage administration. They can be avoided by administration of the enzyme preparation in divided doses during a day. If these symptoms persist doctor should be consulted. Allergic reaction occurs rarely and disappears after the discontinuation of the drug. In case of their occurrence discontinue using Myoheal – D® and doctor should be consulted.

Adverse reactions due to diclofenac
Adverse reactions are ranked under the heading of frequency, the most frequent first, using the following convention: very common: (>1/10); common (≥ 1/100, <1/10); uncommon (≥ 1/1,000, <1/100); rare (≥1/10,000, <1/1000); very rare (<1/10,000); not known: cannot be estimated from available data.

The following undesirable effects include those reported with other short-term or long-term use.

<table>
<thead>
<tr>
<th>Blood and lymphatic system disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very rare</td>
</tr>
<tr>
<td>Thrombocytopenia, leucopenia, anaemia (including haemolytic and aplastic anaemia), agranulocytosis.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Immune system disorders</th>
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</thead>
<tbody>
<tr>
<td>Rare</td>
</tr>
<tr>
<td>Hypersensitivity, anaphylactic and anaphylactoid reactions (including hypotension and shock).</td>
</tr>
<tr>
<td>Very rare</td>
</tr>
<tr>
<td>Angioneurotic oedema (including face oedema).</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Psychiatric disorders</th>
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</thead>
<tbody>
<tr>
<td>Very rare</td>
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<tr>
<td>Disorientation, depression, insomnia, nightmare, irritability, psychotic disorder.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Nervous system disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
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<tr>
<td>Headache, dizziness.</td>
</tr>
<tr>
<td>Rare</td>
</tr>
<tr>
<td>Somnolence, tiredness.</td>
</tr>
<tr>
<td>Very rare</td>
</tr>
<tr>
<td>Paresthesia, memory impairment, convolution, anxiety, tremor, aseptic meningitis, taste disturbances, cerebrovascular accident.</td>
</tr>
<tr>
<td>Unknown</td>
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<tr>
<td>Confusion, hallucinations, disturbances of sensation malaise.</td>
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</tbody>
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<tr>
<th>Eye disorders</th>
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<tbody>
<tr>
<td>Very rare</td>
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<tr>
<td>Visual disturbance, vision blurred, diplopia.</td>
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<tr>
<td>Unknown</td>
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<tr>
<td>Optic neuritis</td>
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<tr>
<th>Ear and labyrinth disorders</th>
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<tbody>
<tr>
<td>Common</td>
</tr>
<tr>
<td>Vertigo.</td>
</tr>
<tr>
<td>Very rare</td>
</tr>
<tr>
<td>Tinnitus, hearing impaired.</td>
</tr>
<tr>
<td>Disorders</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Cardiac disorders</td>
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<tr>
<td>Vascular disorders</td>
</tr>
<tr>
<td>Respiratory, thoracic and mediastinal disorders</td>
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<tr>
<td>Gastrointestinal disorders</td>
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<tr>
<td>Hepatobiliary disorders</td>
</tr>
<tr>
<td>Skin and subcutaneous tissue disorders</td>
</tr>
<tr>
<td>Renal and urinary disorders</td>
</tr>
<tr>
<td>General disorders and administration site conditions</td>
</tr>
<tr>
<td>Reproductive system and breast disorders</td>
</tr>
</tbody>
</table>

Clinical trial and epidemiological data consistently point towards an increased risk of arterial thrombotic events (for example myocardial infarction or stroke) associated with the use of diclofenac, particularly at high doses (150mg daily) and in long term treatment (see sections 4.3 and 4.4 for Contraindications and Special warnings and special precautions for use).

4.9 Overdose
Information is not available regarding the overdose with the use of Myoheal – D°. However, if suspected, physician should be consulted immediately to take appropriate measures.

Symptoms
There is no typical clinical picture resulting from diclofenac over dosage. Over dosage
can cause symptoms such as headache, nausea, vomiting, epigastric pain, gastrointestinal bleeding, diarrhoea, dizziness, disorientation, excitation, coma, drowsiness, tinnitus, fainting or convulsions. In the case of significant poisoning acute renal failure and liver damage are possible.

Therapeutic measures
Management of acute poisoning with NSAIDs, including diclofenac, essentially consists of supportive measures and symptomatic treatment. Supportive measures and symptomatic treatment should be given for complications such as hypotension, renal failure, convulsions, gastrointestinal disorder, and respiratory depression. Special measures such as forced diuresis, dialysis or haemo-perfusion are probably of no help in eliminating NSAIDs, including diclofenac, due to high protein binding and extensive metabolism.
Activated charcoal may be considered after ingestion of a potentially toxic overdose, and gastric decontamination (e.g. vomiting, gastric lavage) after ingestion of a potentially life threatening overdose.

5. Pharmacological properties
5.1 Pharmacodynamic properties
• Trypsin is a proteolytic enzyme. It hydrolyses proteins into peptides.
• Bromelain, is a proteolytic enzyme. It breaks peptide bond inside protein molecules.
• Rutoside is the glycoside and has antioxidant effect. It increases the strength of the walls of the blood capillaries and regulates their permeability.
• Diclofenac is a Nonsteroidal anti-inflammatory drugs (NSAIDs).

Mechanism of action
• Diclofenac is a nonsteroidal agent with marked analgesic/anti-inflammatory properties. It is an inhibitor of prostaglandin synthetase (cyclo-oxygenase).
• Diclofenac sodium in vitro does not suppress proteoglycan biosynthesis in cartilage at concentrations equivalent to the concentrations reached in human beings.

5.2 Pharmacokinetic properties
Pharmacokinetic properties (absorption, distribution, bio-transformation and
elimination) are not available with the use of this product.

Pharmacokinetics of diclofenac

Absorption
Absorption is complete but onset is delayed until passage through the stomach, which may be affected by food which delays stomach emptying. The mean peak plasma diclofenac concentration reached at about 2 hours (50mg dose produces 1.48 ± 0.65µg/ml (1.5µg/ml = 5µmol/l)).

Bioavailability:
About half of the administered diclofenac is metabolised during its first passage through the liver (“first-pass” effect), the area under the concentrations curve (AUC) following oral administration is about half that following an equivalent parenteral dose. Pharmacokinetic behaviour does not change on repeated administration. Accumulation does not occur, provided the recommended dosage intervals are observed.

Distribution
The active substance is 99.7% protein bound, mainly to albumin (99.4%). Diclofenac enters the synovial fluid, where maximum concentrations are measured 2-4 hours after the peak plasma values have been attained. The apparent half-life for elimination from the synovial fluid is 3-6 hours. Two hours after reaching the peak plasma values, concentrations of the active substance are already higher in the synovial fluid than they are in the plasma and remain higher for up to 12 hours. Diclofenac was detected in a low concentration (100 ng/mL) in breast milk in one nursing mother. The estimated amount ingested by an infant consuming breast milk is equivalent to a 0.03 mg/kg/day dose (see section 4.6 Pregnancy and lactation).

Metabolism
Biotransformation of diclofenac takes place partly by glucuronidation of the intact molecule, but mainly by single and multiple hydroxylation and methoxylation, resulting in several phenolic metabolites, most of which are converted to glucuronide conjugates. Two phenolic metabolites are biologically active, but to a much lesser extent than diclofenac.

Elimination
The total systemic clearance of diclofenac in plasma is 263 ± 56 mL/min (mean value ± SD). The terminal half-life in plasma is 1-2 hours. Four of the metabolites, including the two active ones, also have short plasma half-lives of 1-3 hours.
About 60% of the administered dose is excreted in the urine in the form of the glucuronide conjugate of the intact molecule and as metabolites, most of which are also converted to glucuronide conjugates. Less than 1% is excreted as unchanged substance. The rest of the dose is eliminated as metabolites through the bile in the faeces.

**Characteristics in patients**

**Elderly:** No relevant age-dependent differences in the drug's absorption, metabolism, or excretion have been observed, other than the finding that in five elderly patients, a 15 minute iv infusion resulted in 50% higher plasma concentrations than expected with young healthy subjects.

**Patients with renal impairment:** In patients suffering from renal impairment, no accumulation of the unchanged active substance can be inferred from the single-dose kinetics when applying the usual dosage schedule. At a creatinine clearance of <10 mL/min, the calculated steady-state plasma levels of the hydroxy metabolites are about 4 times higher than in normal subjects. However, the metabolites are ultimately cleared through the bile.

**Patients with hepatic disease:** In patients with chronic hepatitis or non-decompensated cirrhosis, the kinetics and metabolism of diclofenac are the same as in patients without liver disease.

5.3 Preclinical safety data

No data is available.

6. Pharmaceutical particulars

6.1 Incompatibilities

None supplied.

6.3 Shelf life

As mentioned on the package material.

6.4 Special precautions for storage

As mentioned on the package material.

Administrative data
7. Marketing authorisation holder
Strides Shasun Limited
Strides House, Bilekahalli,
Bannerghatta Road,
Bengaluru – 560 076, India

8. Toll free number for reporting
1800 4190601

9. Date of text
30th November 2016