

1.3.1 Summary of Product Characteristics (SmPC)

**a. Product Details:**

FORTIFIED PROCAINE PENICILLIN FOR INJECTION

Each vial contains:

FORTIFIED PROCAINE PENICILLIN.....4.0 mega

Excipient.....Q.S.

**Dosage form:** Powder for Injection

**Strength(s):**

FORTIFIED PROCAINE PENICILLIN.....4.0 mega

**Route of administration:** i.m./i.v.

**Pharmacopoeial Status API:**

FORTIFIED PROCAINE PENICILLIN BP

**Pharmacopoeial status FP:** BP

**b. Component of the drug product**

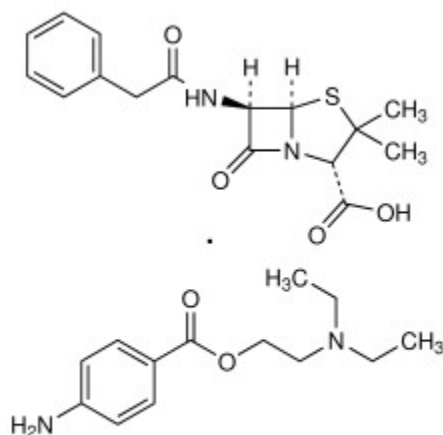
**Active Ingredients**

**MC FORIS** is a powder for injection. It has the same antimicrobial action as benzylpenicillin to which it is hydrolysed gradually following deep intramuscular injection. This results in a prolonged effect, but because of the relatively low blood concentrations produced, its use should be restricted to infections caused by micro-organisms that are highly sensitive to penicillin. Procaine benzylpenicillin should

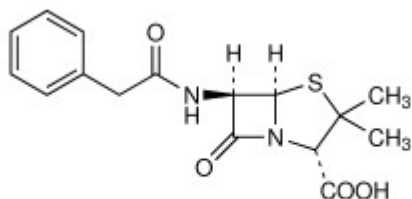
not be used as the sole treatment for severe acute infections, or when bacteraemia is present.

Procaine benzylpenicillin is used mainly in the treatment of syphilis; other indications have included anthrax, pneumonia (in children in developing countries), and Whipple's disease.

**Structure:**



Chemical Structure of Procaine Benzylpenicillin



Chemical Structure of Benzylpenicillin

**Physicochemical Characteristics:**

**Procaine Benzylpenicillin**

**Description :**

A white, crystalline powder.

**Solubility:** Slightly soluble in water; sparingly soluble in alcohol. A 0.33% solution in

water has a pH of 5.0 to 7.5.

### **Benzympenicillin Sodium**

#### **Description :**

A white or almost white crystalline powder.

**Solubility:** Very soluble in water; practically insoluble in fatty oils and in liquid paraffin. A 10% solution in water has a pH of 5.5 to 7.5.

#### **Excipients:**

N/A

### 1.3.2 Labelling (outer & inner labels)

Will be submitted later

1.3.3 Package Insert (also known as patient information PIL)

**PATIENT INFORMATION LEAFLET**

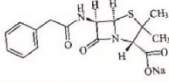
**PATIENT INFORMATION LEAFLET: INFORMATION FOR THE USER  
FORTIFIED PROCAINE PENICILLIN For Injection (MC FORIS)**



### Fortified Procaine Penicillin for Injection 4 MEGA

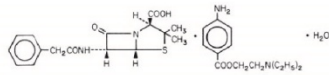
#### DESCRIPTION

This product is mainly composed of sodium penicillin and Procaine Penicillin. Sodium penicillin, its chemical name is (2S, 5R, 6R)-3,3-dimethyl-7-oxo-6-(2-phenylacetamido)-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid compound with 2-(diethylamino)ethyl p-aminobenzoate (1:1) monohydrate, is an equimolar salt of procaine and penicillin G. It occurs as white crystals or a white, microcrystalline powder and is slightly soluble in water. Its chemical structure is as follows:



Molecular formula is  $C_{14}H_{17}N_3NaO_5S$  MW 356.38.

Penicillin G procaine, (2S,5R,6R)-3,3-Dimethyl-7-oxo-6-(2-phenylacetamido)-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid compound with 2-(diethylamino)ethyl p-aminobenzoate (1:1) monohydrate, is an equimolar salt of procaine and penicillin G. It occurs as white crystals or a white, microcrystalline powder and is slightly soluble in water. Its chemical structure is as follows:



Molecular formula is  $C_{18}H_{24}N_4O_5S \cdot C_{11}H_{20}N_2O_2 \cdot H_2O$  MW 588.72.

#### COMPOSITION

Each vial of injection contains Procaine Penicillin 3 MEGA, Benzyl Penicillin Sodium 1 MEGA.

#### PHARMACOLOGICAL ACTION:

This medication is used to treat a wide variety of bacterial infections. This medication is known as a long-acting natural penicillin antibiotic. It works by stopping the growth of bacteria. This antibiotic treats only bacterial infections. It will not work for viral infections (e.g., common cold, flu). Unnecessary use or misuse of any antibiotic can lead to its decreased effectiveness.

Procaine penicillin is penicillin's procaine salt, the antimicrobial active ingredient is penicillin. Penicillin plays on hemolytic streptococci, Streptococcus, Streptococcus pneumoniae and Staphylococcus with efficient antibacterial activity. Neisseria gonorrhoeae, Neisseria meningitidis bacterium, Corynebacterium diphtheriae, Bacillus anthracis, the bovine type actinomycetes, noniform chain bacilli, listeria, leptospirosis and syphilis spirochete sensitive to the chemicals. This product is also antibacterial activity of Haemophilus influenzae and pertussis Bordetella bacteria. This product Clostridium digestion the streptococci and melanin production by Bacteroides anaerobes good antibacterial role of Bacteroides fragilis antibacterial effect. Penicillin play a bactericidal effect by inhibiting bacterial cell wall synthesis.

#### INDICATIONS

Procaine penicillin is an antibiotic that fights bacteria.

Procaine penicillin is used to treat many different types of infections caused by bacteria, including syphilis (a sexually transmitted disease).

#### CONTRA-INDICATIONS:

A previous hypersensitivity reaction to any penicillin or to procaine is a contraindication.

#### WARNINGS:

WARNING: NOT FOR INTRAVENOUS USE. DO NOT INJECT INTRAVENOUSLY OR ADMIX WITH OTHER INTRAVENOUS SOLUTIONS. THERE HAVE BEEN REPORTS OF INADVERTENT INTRAVENOUS ADMINISTRATION OF PENICILLIN G BENZATHINE WHICH HAS BEEN ASSOCIATED WITH CARDIORESPIRATORY ARREST AND DEATH. Prior to administration of this drug, carefully read the WARNINGS, ADVERSE REACTIONS, and DOSAGE AND ADMINISTRATION sections of the labeling

#### Anaphylaxis

SERIOUS AND OCCASIONALLY FATAL HYPERSENSITIVITY (ANAPHYLACTIC) REACTIONS HAVE BEEN REPORTED IN PATIENTS ON PENICILLIN THERAPY. THESE REACTIONS ARE MORE LIKELY TO OCCUR IN INDIVIDUALS WITH A HISTORY OF PENICILLIN HYPERSENSITIVITY AND/OR A HISTORY OF SENSITIVITY TO MULTIPLE ALLERGENS. THERE HAVE BEEN REPORTS OF INDIVIDUALS WITH A HISTORY OF PENICILLIN HYPERSENSITIVITY WHO HAVE EXPERIENCED SEVERE REACTIONS WHEN TREATED WITH CEPHALOSPORINS. BEFORE INITIATING THERAPY WITH BICILLIN C-R CAREFUL INQUIRY SHOULD BE MADE CONCERNING PREVIOUS HYPERSENSITIVITY REACTIONS TO PENICILLINS, CEPHALOSPORINS OR OTHER ALLERGENS. IF AN ALLERGIC REACTION OCCURS, BICILLIN C-R SHOULD BE DISCONTINUED AND APPROPRIATE THERAPY INSTITUTED. SERIOUS ANAPHYLACTIC REACTIONS REQUIRE IMMEDIATE EMERGENCY TREATMENT WITH EPINEPHRINE, OXYGEN, INTRAVENOUS STEROIDS AND AIRWAY MANAGEMENT, INCLUDING INTUBATION, SHOULD ALSO BE ADMINISTERED AS INDICATED.

#### Pseudomembranous Colitis

Pseudomembranous colitis has been reported with nearly all antibacterial agents, including penicillin, and may range in severity from mild to life-threatening. Therefore, it is important to consider this diagnosis in patients who present with diarrhea subsequent to the administration of any antibacterial agent.

Treatment with antibacterial agents alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by Clostridium difficile is one primary cause of "antibiotic-associated colitis".

After the diagnosis of pseudomembranous colitis has been established, appropriate therapeutic measures should be initiated. Mild cases of pseudomembranous colitis usually respond to drug discontinuation alone. In moderate to severe cases, consideration should be given to management with fluids and electrolytes, protein supplementation, and treatment with an antibacterial drug clinically effective against C. difficile colitis.

#### Method of Administration

Do not inject into or near an artery or nerve.

Injection into or near a nerve may result in permanent neurological damage.

Inadvertent intravascular administration, including inadvertent direct intra-arterial injection or injection immediately adjacent to arteries, of Bicillin C-R and other penicillin preparations has resulted in severe neurovascular damage, including transverse myelitis with permanent paralysis, gangrene requiring amputation of digits and more proximal portions of extremities, and necrosis and sloughing at and surrounding the injection site. Such severe effects have been reported following injections into the buttock, thigh, and deltoid areas. Other serious complications of suspected intravascular administration which have been reported include immediate pallor, mottling, or cyanosis of the extremity both distal and proximal to the injection site, followed by bleb formation; severe edema requiring anterior and/or posterior compartment fasciotomy in the lower extremity. The above-described severe effects and complications have most often occurred in infants and small children. Prompt consultation with an appropriate specialist is indicated if any evidence of compromise of the blood

supply occurs at, proximal to, or distal to the site of injection.1-9 (See PRECAUTIONS, AND DOSAGE AND ADMINISTRATION sections.)

Do not inject intravenously or admix with other intravenous solutions. There have been reports of inadvertent intravenous administration of penicillin G benzathine which has been associated with cardiorespiratory arrest and death. (See DOSAGE AND ADMINISTRATION section.)

Quadriceps femoris fibrosis and atrophy have been reported following repeated intramuscular injections of penicillin preparations into the anterolateral thigh.

#### DOSAGE AND DIRECTIONS FOR USE:

##### Streptococcal Infections Group A

Infections of the upper-respiratory tract, skin and soft-tissue infections, scarlet fever, and erysipelas.

The following doses are recommended:

Adults and pediatric patients over 60 lbs. in weight: 2,400,000 units.

Pediatric patients from 30 to 60 lbs.: 900,000 units to 1,200,000 units.

Pediatric patients under 30 lbs.: 600,000 units.

NOTE: Treatment with the recommended dosage is usually given at a single session using multiple IM sites when indicated. An alternative dosage schedule may be used, giving one-half (1/2) the total dose on day 1 and one-half (1/2) on day 3. This will also insure the penicillinemia required over a 10-day period; however, this alternate schedule should be used only when the physician can be assured of the patient's cooperation.

##### Pneumococcal Infections (except pneumococcal meningitis)

600,000 units in pediatric patients and 1,200,000 units in adults, repeated every 2 or 3 days until the temperature is normal for 48 hours. Other forms of penicillin may be necessary for severe cases.

##### Method of Administration

Bicillin C-R is intended for Intramuscular Injection ONLY. Do not inject into or near an artery or nerve, or intravenously or admix with other intravenous solutions. (See WARNINGS section.)

Because of the high concentration of suspended material in this product, the needle may be blocked if the injection is not made at a slow, steady rate.

Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration whenever solution and container permit.

#### SIDE EFFECTS

As with other penicillins, untoward reactions of the sensitivity phenomena are likely to occur, particularly in individuals who have previously demonstrated hypersensitivity to penicillins or in those with a history of allergy, asthma, hay fever, or urticaria.

The following have been reported with parenteral penicillin G:

##### General

Hypersensitivity reactions including the following: skin eruptions (maculopapular to exfoliative dermatitis), urticaria, laryngeal edema, fever, eosinophilia; other serum sickness-like reactions (including chills, fever, edema, arthralgia, and prostration); and anaphylaxis including shock death. Note: Urticaria, other skin rashes, and serum sickness-like reactions may be controlled with antihistamines and, if necessary, systemic corticosteroids. Whenever such reactions occur, penicillin G should be discontinued unless, in the opinion of the physician, the condition being treated is life-threatening and amenable only to therapy with penicillin G. Serious anaphylactic reactions require immediate emergency treatment with epinephrine. Oxygen, intravenous steroids, and airway management, including intubation, should also be administered as indicated. Gastrointestinal: Pseudomembranous colitis. Onset of pseudomembranous colitis symptoms may occur during or after antibacterial treatment. (See WARNINGS section.)

##### Hematologic

Hemolytic anemia, leukopenia, thrombocytopenia.

##### Neurologic

Neuropathy.

#### Urogenital

Nephropathy.

The following adverse events have been temporally associated with parenteral administrations of penicillin G benzathine:

##### Benzathine:

**Body as a Whole:** Hypersensitivity reactions including allergic vasculitis, pruritis, fatigue, asthenia, and pain; aggravation of existing disorder; headache.

**Cardiovascular:** Cardiac arrest; hypotension; tachycardia; palpitations; pulmonary hypertension; pulmonary embolism; vasodilation; vasovagal reaction; cerebrovascular accident; syncope.

**Gastrointestinal:** Nausea, vomiting; blood in stool; intestinal necrosis.

**Hemic and Lymphatic:** Lymphadenopathy.

**Injection Site:** Injection site reactions including pain, inflammation, lump, abscess, necrosis, edema, hemorrhage, cellulitis, hypersensitivity, atrophy, ecchymosis, and skin ulcer. Neurovascular reactions including warmth, vasospasm, pallor, mottling, gangrene, numbness of the extremities, cyanosis of the extremities, and neurovascular damage.

**Metabolic:** Elevated BUN, creatinine, and SGOT.

**Musculoskeletal:** Joint disorder, periostitis, exacerbation of arthritis; myoglobinuria; rhabdomyolysis.

**Nervous System:** Nervousness; tremors; dizziness; somnolence; confusion; anxiety; euphoria; transverse myelitis; seizures; coma. A syndrome manifested by a variety of CNS symptoms such as severe agitation with confusion, visual and auditory hallucinations, and a fear of impending death (Hoigens's syndrome), has been reported after administration of penicillin G procaine and, less commonly, after injection of the combination of penicillin G benzathine and penicillin G procaine. Other symptoms associated with this syndrome, such as psychosis, seizures, dizziness, tinnitus, cyanosis, palpitations, tachycardia, and/or abnormal perception in taste, also may occur.

**Respiratory:** Hypoxia; apnea; dyspnea.

**Skin:** Diaphoresis.

**Special Senses:** Blurred vision; blindness.

**Urogenital:** Neurogenic bladder; hematuria; proteinuria; renal failure; impotence; priapism.

#### OVERDOSAGE AND PARTICULARS OF ITS TREATMENT

Penicillin in overdosage has the potential to cause neuromuscular hyperirritability or convulsive seizures.

#### PRESENTATION

10 Vials per Box

#### STORAGE INSTRUCTIONS

Store below 25°C. Protect from light. Keep out of reach of children.

