# Summary of Product Characteristics

## 1. NAME OF THE MEDICINAL PRODUCT

Brand Name: DEXAFLOX EYE & EAR DROPS 5 ML

Generic Name : Dexamethasone and Ciprofloxacin (as Ciprofloxacin Hydrochloride)

Pharmaceutical Dosage Form : Eye & Ear Drops (sterile)

## 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each 5 mL sterile solution contains Dexamethasone 5.00 mg and Ciprofloxacin Hydrochloride 16.65 mg equivalent to 16.00 mg of Ciprofloxacin.

For a full list of excipients, see section 6.1

## 3. PHARMACEUTICAL FORM

Eye & Ear Drops (sterile).

Clear and colorless to pale yellow color transparent solution in 5 mL round ivory color plastic dropper bottle with plug and cap.

## 4. CLINICAL PARTICULARS

### 4.1 Therapeutic indications

Dexaflox Eye & Ear Drops is indicated for the treatment of different types of eyes and ear disorder.

**Eye:** Acute and chronic keratitis and conjunctivitis of an infectious, allergic but non-viral nature. It is also indicated in chronic anterior uveities, scleritis, episcleritis, myositis and corneal injury from chemical radiation or thermal burns, or penetration of foreign bodies. Post-operative management of cataract, glaucoma & strabismus. The use of combination with an anti-infective component is indicated where the risk of super-cial ocular infection is high.

**Ear:** This combination is indicated for the treatment of Acute Otitis Media, Acute Otitis Externa & other inflammatory conditions of the ear.

### 4.2 Posology and method of administration

**Eye:** 1 drop into conjunctival sac(s) every four to six hours. During the initial 24 to 48 hours, the dosage may be increased to 1 drop every two hours.

**Ear:** 6 months & older:

Acute Otitis Media & Acute Otitis Externa: 4 drops into the affected ear twice daily for seven days.

**4.3 Contraindications**

Known hypersensitivity to any ingredient of the product. Herpes simplex and other viral conditions, mycosis, glaucoma, newborn babies, fungal diseases of ocular or auricular structures.

**4.4 Special warnings and special precautions for use**

Prolonged use may result in overgrowth of non-susceptible organisms including fungi; in ocular hypertension, damage to the optic nerve, defects in visual acuity and posterior sub capsular cataract formation may occur. Patients wearing contact lenses must not use the drops during the time the lenses are worn.

**4.5 Interaction with other FPPs and other forms of interaction**

Specific drug interaction studies have not been conducted. However, the systemic administration of some quinolones has been shown to elevate plasma concentrations of theophylline, interfere with the metabolism of caffeine, enhance the effects of the oral anticoagulant warfarin and its derivatives and have been associated with transient elevations in serum creatinine in patients receiving cyclosporin concomitantly.

**4.6 Fertility, pregnancy and lactation**

**Pregnancy:** It should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

**Nursing Mother:** It is not known whether topical administration of corticosteroids would result in sufficient systemic absorption to produce detectable quantities in human milk. So, caution should be exercised when the combination is administered to a nursing woman.

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

It is suggested to consult with the doctor or pharmacist.

**4.8 Undesirable effects**

Frequently reported adverse reactions are transient ocular burning or discomfort. Other reported reactions include stinging, redness, itching, photophobia, conjunctivitis/keratitis, periocular/facial edema, foreign body sensation, blurred vision, tearing, dryness, and eye pain. Elevation of intraocular pressure with development of glaucoma, and delayed wound healing may rarely occur. Discomfort, pain, or itching in the ear may occur.

### 4.9 Overdose

Not known & not likely.

## 5. PHARMACOLOGICAL PROPERTIES

### 5.1 Pharmacodynamic properties

**Pharmacotherapeutic group:** Antibacterial and corticosteroid.

**ATC-code:** S02CA06

**Mechanism of action**

Dexamethasone reduces prostaglandin synthesis by inhibiting the enzyme phospholipase A2. Also, Dexamethasone inhibits the chemotactic infiltration of neutrophils into the site of inflammation.

Ciprooxacin has in vitro activity against a wide range of gram-negative and gram-positive organisms, possessing the greatest antibacterial activity of all quinolones. The bactericidal action of Ciprooxacin results from interference with the enzyme DNA gyrase which is needed for the synthesis of bacterial DNA.

### 5.2 Pharmacokinetic properties

Following a single bilateral drop (total dose = 0.28 mL, 0.84 mg ciprofloxacin, 0.28 mg dexamethasone) topical otic dose to pediatric patients after tympanostomy tube insertion, measurable plasma concentrations of ciprofloxacin and dexamethasone were observed at 6 hours following administration in 2 of 9 patients and 5 of 9 patients, respectively. Mean ± SD peak plasma concentrations of ciprofloxacin were 1.39 ± 0.880 ng/mL (n = 9). Peak plasma concentrations ranged from 0.543 ng/mL to 3.45 ng/mL and were on average approximately 0.1% of peak plasma concentrations achieved with an oral dose of 250-mg. Peak plasma concentrations of ciprofloxacin were observed within 15 minutes to 2 hours post dose application. Mean ± SD peak plasma concentrations of dexamethasone were 1.14 ± 1.54 ng/mL (n = 9). Peak plasma concentrations ranged from 0.135 ng/mL to 5.10

ng/mL and were on average approximately 14% of peak concentrations reported in the literature following an oral 0.5-mg tablet dose. Peak plasma concentrations of dexamethasone were observed within 15 minutes to 2 hours post dose application.

Dexamethasone has been added to aid in the resolution of the inflammatory response accompanying bacterial infection (such as otorrhea in pediatric patients with AOMT).

### 5.3 Preclinical safety data

The preclinical safety assessment for Ciprofloxacin and Dexamethasone Ear Drops has been based upon the four ototopical studies in guinea pigs, as well as the literature studies on the systemic and/or ototopical administration of both ciprofloxacin and dexamethasone, with microscopic (hair cell) and/or physiologic (ABR) evaluation of ototoxicity potential in several species with high levels of drug exposure. The data from the second, third and fourth studies convincingly demonstrate an absent or extremely low potential for ototoxicity of ciprofloxacin or dexamethasone alone or in combination.

The safety of BAC and boric acid for administration to the middle ear has also been demonstrated through clinically relevant literature studies and GLP repeated dose toxicity studies of up to 28 days in duration.

The preclinical sensitization study, supports the safety of Ciprofloxacin & Dexamethasone Ear Drops for topical administration.

## 6. PHARMACEUTICAL PARTICULARS

### 6.1 List of excipients

Dexamethasone (Micronized & Sterile)

Ciprofloxacin Hydrochloride

Benzalkonium Chloride Solution, 50%

Disodium Edetate

Polysorbate 80 (Tween 80) (For sterile)

Mannitol

Povidone

Glacial Acetic Acid

Sodium Acetate Trihydrate

Water for Injections

**6.2 Incompatibilities**

In the formulation we have used the common excipients: Benzalkonium Chloride Solution, 50%, Disodium Edetate, Polysorbate 80 (Tween 80) (For sterile), Mannitol, Povidone, Glacial Acetic Acid, Sodium Acetate Trihydrate, Water for Injections & Water for Injection (WFI) are widely used in pharmaceutical industry for a long time. Moreover, the stability study at accelerated and long-term condition was found satisfactory.

In addition, Physico-chemical parameters comply with the specification during product release and stability study. So, it could be concluded that excipients used in the drug product are compatible with drug substances.

**6.3 Shelf life**

2 years (24 Months from the date of manufacturing)

**6.4 Special precautions for storage**

Store in a cool and dry place away from light. Keep out of reach of children. Do not touch the dropper tip since this may contaminate the solution. After one month of the opening do not use the medicine of dropper.

**6.5 Nature and contents of container**

5 ml round Ivory color plastic dropper bottle with plug & cap.

The packaging material i.e container & plug material is Low Density Polyethylene(LDPE) and cap material is the combination of Low Density Polyethylene (LDPE) & High Density Polyethylene (HDPE).

**6.6 Special precautions for disposal and other handling**

During use of the dropper, do not touch the dropper tip to surfaces since this may contaminate the solution. After one month of opening do not use the medicine of dropper. Dispose the empty container in waste bin.

**7. MARKETING AUTHORISATION HOLDER**

GENERAL Pharmaceuticals Ltd. (Unit: 2)

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## 8. MARKETING AUTHORISATION NUMBER(S)

05574/07562/REN/2020

## 9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

17-12-2020

## 10. DATE OF REVISION OF THE TEXT

03-06-2023