Summary Product Characteristics

1. Name of the medicinal product
ONAMOX (Moxifloxacin Ophthalmic Solution USP 5 mg/ml)

2. Qualitative and quantitative composition
Each ml contains:Moxifloxacin Hydrochloride USP Eq. to Moxifloxacin
5.0 mg Sterile Aqueous Base …… q.s

3. Pharmaceutical form
Eye drops, solution (eye drops) Clear transparent solution.

4. Clinical particulars
4.1 Therapeutic indications
Topical treatment of purulent bacterial conjunctivitis, caused by Moxifloxacin susceptible strains. Consideration should be given to official guidance on the appropriate use of antibacterial agents.

4.2 Posology and method of administration Eye Drops (Sterile)
For ocular use only. Not for injection. Moxifloxacin Ophthalmic Solution USP eye drops, solution should not be injected subconjunctival or introduced directly into the anterior chamber of the eye

Use in adults including the elderly (≥ 65 years)
The dose is one drop in the affected eye(s) 3 times a day.
The infection normally improves within 5 days and treatment should then be continued for a further 2-3 days. If no improvement is observed within 5 days of initiating therapy, the diagnosis and/or treatment should be reconsidered. The duration of treatment depends on the severity of the disorder and on the clinical and bacteriological course of infection.
Pediatric patients
No dosage adjustment is necessary. Use in hepatic and renal impairment No dosage adjustment is necessary. To prevent contamination of the dropper tip and solution, care must be taken not to touch the eyelids, surrounding areas or other surfaces with the dropper tip of the bottle.
In order to prevent the drops from being absorbed via the nasal mucosa, particularly in new-born infants or children, the nasolacrimal ducts should be held closed for 2 to 3 minutes with the fingers after administering the drops. After cap is removed, if tamper evident snap collar is loose, remove before using the product.
If more than one topical ophthalmic medicinal product is being used, the medicinal products must be administered at least 5 minutes apart. Eye ointments should be administered last

4.3 Contraindications
Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.

4.4 Special warnings and precautions for use
In patients receiving systemically administered quinolones, serious and occasionally fatal hypersensitivity (anaphylactic) reactions have been reported, some following the first dose. Some reactions were accompanied by cardiovascular collapse, loss of consciousness,

angioedema (including laryngeal, pharyngeal or facial edema), airway obstruction, dyspnoea, urticaria, and itching.
If an allergic reaction to Moxifloxacin Ophthalmic Solution USP occurs, discontinue use of the medicinal product. Serious acute hypersensitivity reactions to Moxifloxacin or any other product ingredient may require immediate emergency treatment. Oxygen and airway management should be administered where clinically indicated.
As with other anti-infective, prolonged use may result in overgrowth of non-susceptible organisms, including fungi. If super infection occurs, discontinue use and institute alternative therapy.
Tendon inflammation and rupture may occur with systemic fluoroquinolone therapy including Moxifloxacin, particularly in older patients and those treated concurrently with corticosteroids. Following ophthalmic administration of Moxifloxacin Ophthalmic Solution USP plasma concentrations of Moxifloxacin are much lower than after therapeutic oral doses of Moxifloxacin, however, caution should be exercised and treatment with Moxifloxacin Ophthalmic Solution USP should be discontinued at the first sign of tendon inflammation. Data are very limited to establish efficacy and safety of Moxifloxacin Ophthalmic Solution USP in the treatment of conjunctivitis in neonates. Therefore use of this medicinal product to treat conjunctivitis in neonates is not recommended.
Moxifloxacin Ophthalmic Solution USP should not be used for the prophylaxis or empiric treatment of gonococcal conjunctivitis, including gonococcal ophthalmia neonatorum, because of the prevalence of fluoroquinolone-resistant Neisseria gonorrhoeae. Patients with eye infections caused by Neisseria gonorrhoeae should receive appropriate systemic treatment.
The medicinal product is not recommended for the treatment of Chlamydia trachomatis in patients less than 2 years of age as it has not been evaluated in such patients. Patients older than 2 years of age with eye infections caused by Chlamydia trachomitis should receive appropriate systemic treatment.
Neonates with ophthalmia neonatorum should receive appropriate treatment for their condition, e.g. systemic treatment in cases caused by Chlamydia trachomitis or Neisseria gonorrhoeae.
Patients should be advised not to wear contact lenses if they have signs and symptoms of a bacterial ocular infection.

4.5 Interaction with other medicinal products and other forms of interaction
No specific interaction studies have been performed with Moxifloxacin Ophthalmic Solution USP eye drops, solution. Given the low systemic concentration of Moxifloxacin following topical ocular administration of the medicinal product, drug interactions are unlikely to occur..

4.6 Fertility, Pregnancy and Lactation
Pregnancy
There are no adequate data from the use of Moxifloxacin Ophthalmic Solution USP in pregnant women. However, no effects on pregnancy are anticipated since the systemic exposure to Moxifloxacin is negligible. The medicinal product can be used during pregnancy.
Breastfeeding
It is unknown whether Moxifloxacin/metabolites are excreted in human milk. Animal studies have shown excretion of low levels in breast milk after oral administration of Moxifloxacin. However, at therapeutic doses of Moxifloxacin Ophthalmic Solution USP no effects on the suckling child are anticipated. The medicinal product can be used during breast-feeding.
Fertility
Studies have not been performed to evaluate the effect of ocular administration of Moxifloxacin Ophthalmic Solution USP on fertility..

4.7 Effects on ability to drive and use machines :

Moxifloxacin Ophthalmic Solution USP has no or negligible influence on the ability to drive and use machines, however, as with any eye drops, temporary blurred vision or other visual disturbances may affect the ability to drive or use machines. If blurred vision occurs at instillation, the patient should wait until their vision clears before driving or using machinery.

4.8 Undesirable effects

Summary of the safety profile

In clinical studies involving 2,252 patients, Moxifloxacin Ophthalmic Solution USPwas administered up to 8 times a day, with over 1,900 of these patients receiving treatment 3 times daily. The overall safety population that received the medicinal product consisted of 1,389 patients from the United States and Canada, 586 patients from Japan and 277 patients from India. No serious ophthalmic or systemic undesirable effects related to the medicinal product were reported in any of the clinical studies. The most frequently reported treatment-related undesirable effects with the medicinal product were eye irritation and eye pain, occurring at an overall incidence of 1 to 2%.

These reactions were mild in 96% of those patients who experienced them, with only 1 patient discontinuing therapy as a result.

System Organ Classification	**Frequency**	**Adverse reactions**
Bloodand	Rare	hemoglobin decreased
Immune system disorders	Not known	hypersensitivity
Nervous system disorders	Uncommon Rare Not known	headache paresthesi a dizziness
Eye disorders	Common Uncomm on Rare Not known	eye pain, eye irritation punctate keratitis, dry eye, conjunctival hemorrhage, ocular hyperemia, eye pruritus, eyelid edema, ocular discomfort, corneal epithelium defect, corneal disorder, conjunctivitis, blepharitis, eye swelling, conjunctival edema, vision blurred, visual acuity reduced, asthenopia, erythema of eyelid Endophthalmitis, ulcerative keratitis, corneal erosion, corneal abrasion, intraocular pressure increased, corneal opacity, corneal infiltrates, corneal deposits, eye allergy, keratitis, corneal edema, photophobia, , eyelid edema, lacrimation increased, eye discharge, foreign body sensation in eyes
Cardiac disorders	Not known	palpitations
Respiratory, thoracic and mediastinal disorders	Rare Not known	nasal discomfort, pharyngolaryngeal pain, sensation of foreign body (throat) dyspnoea
Gastrointestinal disorders	Uncommon Rare Not known	dysgeusia vomiting nausea

Hepatobiliary disorders	Rare	alanine aminotransferase
Subcutaneous tissue disorders	Not known	erythema, rash, pruritus, urticaria

Description of selected adverse reactions

Serious and occasionally fatal hypersensitivity (anaphylactic) reactions, some following first dose, have been reported in patients receiving systemic quinolone therapy. Some reactions were accompanied by cardiovascular collapse, loss of consciousness, angioedema (including laryngeal, pharyngeal or facial edema), airway obstruction, dyspnoea, urticaria and itching.

Ruptures of the shoulder, hand, Achilles, or other tendons that required surgical repair or resulted in prolonged disability have been reported in patients receiving systemic fluoroquinolone. Studies and post marketing experience with systemic quinolones indicate that a risk of these ruptures may be increased in patients receiving corticosteroids, especially geriatric patients and in tendons under high stress, including Achilles tendon.

Pediatric population

In clinical trials, Moxifloxacin Ophthalmic Solution USPhas shown to be safe in pediatric patients, including neonates. In patients under 18 years old, the two most frequent adverse reactions were eye irritation and eye pain, both occurring at an incidence rate of 0.9%.

Based on data from clinical trials involving pediatric patients, including neonates the type and severity of adverse reactions in the pediatric population are similar to those in adults.

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected Adverse reaction to the National Regulatory Authority.

4.9 Overdose.

The limited holding capacity of the conjunctival sac for ophthalmic products practically precludes any overdosing of the medicinal product. The total amount of Moxifloxacin in a single container is too small to induce adverse effects after accidental ingestion.

5. Pharmacological properties

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Ophthalmological; anti-infective, other anti-infective, ATC code: S01AE07 Mode of Action:

Moxifloxacin, a fourth-generation fluoroquinolone, inhibits the DNA gyrase and topoisomerase IV required for bacterial DNA replication, repair, and recombination.

Resistance:

Resistance to fluoroquinolone, including Moxifloxacin generally occurs by chromosomal mutations in genes encoding DNA gyrase and topoisomerase IV. In Gram-negative bacteria, Moxifloxacin resistance can be due to mutations in mar (multiple antibiotic resistances) and the qnr (quinolone resistance) gene systems. Resistance is also associated with expression of bacteria efflux proteins and inactivating enzymes.

Cross-resistance with beta-lactams, macrolides and aminoglycosides is not expected due to differences in mode of action.

Susceptibility Testing Breakpoints

There are no pharmacological data correlated with clinical outcome for Moxifloxacin administered as a topical agent. As a result, the European Committee on Antimicrobial Susceptibility Testing (EUCAST) suggests the following epidemiological cut-off values (ECOFF mg/l) derived from MIC distribution curves to indicate susceptibility to topical Moxifloxacin:

Corynebacterium	ND
Staphylococcus aureus	0.25 mg/l
Staphylococcus, coag-neg.	0.25 mg/l
Streptococcus pneumonia	0.5 mg/l
Streptococcus pyogenes	0.5 mg/l
Streptococcus, viridans group	0.5 mg/l
Enterobacter spp.	0.25 mg/l
Haemophilus influenza	0.125 mg/l
Klebsiella spp.	0.25 mg/l
Moraxella catarrhalis	0.25 mg/l
Morganella morganii	0.25 mg/l
Neisseria gonorrhoeae	0.032 mg/l
Pseudomonas Aeruginosa	4 mg/l
Serratia marcescens	1 mg/l

The prevalence of acquired resistance may vary geographically and with time for selected species and local information on resistance is desirable, particularly when treating severe infections. As necessary, expert advice should be sought when the local prevalence of resistance is such that the utility of Moxifloxacin in at least some types of infections is questionable.

COMMONLY SUSCEPTIBLE SPECIES

Aerobic Gram-positive micro-organisms: Corynebacterium species including
Corynebacterium diphtheriae
Staphylococcus aureus (methicillin susceptible)
Streptococcus pneumonia
Streptococcus pyogenes
Streptococcus viridans Group

Aerobic Gram-negative micro-organisms:

Enterobacter cloacae
Haemophilus influenza
Klebsiella oxytoca
Moraxella catarrhalis
Serratia marcescens

Anaerobic micro-organisms:
Propionibacterium

acnes **Other micro-organisms:** Chlamydia trachomatis
SPECIES FOR WHICH ACQUIRED RESISTANCE MAY BE A PROBLEM
Aerobic Gram-positive micro-organisms: Staphylococcus aureus (methicillin resistant) Staphylococcus, coagulase-negative species (methicillin resistant) Aerobic Gram-negative micro-organisms: Neisseria gonorrhoeae Other micro-organisms: None
INHERENTLY RESISTANT ORGANISMS
Aerobic Gram-negative micro-organisms: Pseudomonas Aeruginosa Other micro-organisms: None

5.2 Pharmacokinetic properties

Following topical ocular administration of Moxifloxacin Ophthalmic Solution USP, Moxifloxacin was absorbed into the systemic circulation. Plasma concentrations of Moxifloxacin were measured in 21 male and female subjects who received bilateral topical ocular doses of the medicinal product 3 times a day for 4 days. The mean steady-state Cmax and AUC were 2.7 ng/ml and 41.9 ng·hr/ml, respectively. These exposure values are approximately 1,600 and 1,200 times lower than the mean Cmax and AUC reported after therapeutic 400 mg oral doses of Moxifloxacin. The plasma half-life of Moxifloxacin was estimated to be 13 hours.

5.3 Preclinical safety data

Effects in non-clinical studies were observed only at exposures considered sufficiently in excess of the maximum human exposure following administration to the eye indicating little relevance to clinical use.

As with other quinolones, Moxifloxacin was also genotoxic in vitro in bacteria and mammalian cells. As these effects can be traced to the interaction with bacterial gyrase and in considerably higher concentrations to the interaction with topoisomerase II in mammalian cells, a threshold level for Genotoxicity can be assumed. In in vivo tests, no

evidence of Genotoxicity was found, despite high doses of Moxifloxacin. The therapeutic doses for human use therefore provide adequate safety margin. No indication of a carcinogenic effect was observed in an initiation promotion model in rats.
Unlike other quinolones, Moxifloxacin showed no phototoxic or photogenotoxic properties in extensive in vitro and in vivo studies.Pharmaceutical particulars

5.4 List of excipients

Chloride USP
Boric Acid USP
Sodium Hydroxide USP
Water for Injection BP

5.5 Incompatibilities

Not applicable.

5.6 Shelf life

24 months from the date of manufacture

5.7 Special precautions for storage:

Do not store above 30°C, Protect from direct sunlight. Keep all medicines out of reach of children.

5.8 Nature and contents of container.

5 ml LDPE dropper bottle with white cap and nozzle packed in a carton along with leaflet.

5.9 Special precautions for disposal and other handling

Any unused product or waste material should be disposed of in accordance with local requirements.

6. Registrant:

Dawa Limited,
Plot No. 7879/8, Baba Dogo Road, Ruaraka,
P.O Box 16633-00620,
Nairobi, Kenya.

7. Manufacturer:

THETA PHARMACEUTICALS
LIMITED D-42, IIE SIDCUL,
Selaqui,
Dehradun-248011, Uttarakhand, India.

8. Legal category:

Prescription only medicine, (POM)

9. Date of revision of the text: October 2023