

## **SUMMARY OF PRODUCT CHARACTERISTICS**

### **1 NAME OF THE MEDICINAL PRODUCT**

**Travoprost Rafarm** 40 micrograms/ml eye drops, solution

### **2 QUALITATIVE AND QUANTITATIVE COMPOSITION**

Each ml of solution contains 40 micrograms of Travoprost.

Excipient(s) with known effect: Each ml of solution contains 0.150 mg benzalkonium chloride.

For the full list of excipients, see section 6.1.

### **3 PHARMACEUTICAL FORM**

Eye drops, solution

Clear, colourless solution

Osmolality: 260-315 mOsmol/kg

pH: 5.7-6.3

### **4 CLINICAL PARTICULARS**

Travoprost Rafarm is indicated in adults for the decrease of elevated intraocular pressure with ocular hypertension or open-angle glaucoma (see section 5.1).

#### **4.1 Therapeutic indications**

Decrease of elevated intraocular pressure in adults patients with ocular hypertension or open-angle glaucoma (see section 5.1).

Decrease of elevated intraocular pressure in paediatric patients aged 2 months to < 18 years with ocular hypertension or paediatric glaucoma (see section 5.1).

## 4.2 Posology and method of administration

### Posology

#### Use in adults, including elderly population

The dose is one drop of **Travoprost RAFARM** in the conjunctival sac of the affected eye(s) once daily. Optimal effect is obtained if the dose is administered in the evening.

Nasolacrimal occlusion or gently closing the eyelid after administration is recommended. This may reduce the systemic absorption of medicinal products administered via the ocular route and result in a decrease in systemic adverse reactions.

If more than one topical ophthalmic medicinal product is being used, the medicinal products must be administered at least 5 minutes apart (see section 4.5).

If a dose is missed, treatment should be continued with the next dose as planned. The dose should not exceed one drop in the affected eye(s) daily.

When substituting another ophthalmic antiglaucoma medicinal product with Travoprost RAFARM, the other agent should be discontinued and Travoprost RAFARM should be started the following day.

#### Hepatic and renal impairment

Travoprost has been studied in patients with mild to severe hepatic impairment and in patients with mild to severe renal impairment (creatinine clearance as low as 14 ml/min). No dosage adjustment is necessary in these patients (see section 5.2).

#### Paediatric population

Travoprost can be used in paediatric patients from 2 months to < 18 years at the same posology as in adults. However, data in the age group 2 months to < 3 years (9 patients) is limited (see section 5.1).

The safety and efficacy of travoprost in children below the age of 2 months have not been established. No data are available.

### Method of Administration

For ocular use

For patients who wear contact lenses, please refer to section 4.4.

The patient should remove the protective overwrap immediately prior to initial use. 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.

### **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**

#### Eye colour change

Travoprost RAFARM may gradually change the eye colour by increasing the number of melanosomes (pigment granules) in melanocytes. Before treatment is instituted, patients must be informed of the possibility of a permanent change in eye colour. Unilateral treatment can result in permanent heterochromia. The long term effects on the melanocytes and any consequences thereof are currently unknown. The change in iris colour occurs slowly and may not be noticeable for months to years. The change in eye colour has predominantly been seen in patients with mixed coloured irides, i.e., blue-brown, grey-brown, yellow-brown and green-brown; however, it has also been observed in patients with brown eyes. Typically, the brown pigmentation around the pupil spreads concentrically towards the periphery in affected eyes, but the entire iris or parts of it may become more brownish. After discontinuation of therapy, no further increase in brown iris pigment has been observed.

#### Periorbital and eye lid changes

In controlled clinical trials, periorbital and/or eyelid skin darkening in association with the use of Travoprost RAFARM has been reported in 0.4% of patients. Periorbital and lid changes including deepening of the eyelid sulcus have also been observed with prostaglandin analogues.

Travoprost RAFARM may gradually change eyelashes in the treated eye(s); these changes were observed in about half of the patients in clinical trials and include: increased length, thickness, pigmentation, and/or number of lashes. The mechanism of eyelash changes and their long term consequences are currently unknown.

Travoprost RAFARM has been shown to cause slight enlargement of the palpebral fissure in studies in the monkey. However, this effect was not observed during the clinical trials and is considered to be species specific.

There is no experience of Travoprost RAFARM in inflammatory ocular conditions; nor in neovascular, angle-closure, narrow-angle or congenital glaucoma and only limited experience in thyroid eye disease, in open-angle glaucoma of pseudophakic patients and in pigmentary or pseudoexfoliative glaucoma. Travoprost should therefore be used with caution in patients with active intraocular inflammation.

#### Aphakic patients

Macular oedema has been reported during treatment with prostaglandin F2a analogues. Caution is recommended when using Travoprost RAFARM in aphakic patients, pseudophakic patients with a torn posterior lens capsule or anterior chamber lenses, or in patients with known risk factors for cystoid macular oedema.

#### Iritis/uveitis

In patients with known predisposing risk factors for iritis/uveitis, Travoprost RAFARM should be used with caution.

#### Contact with the skin

Skin contact with Travoprost RAFARM must be avoided as transdermal absorption of travoprost has been demonstrated in rabbits.

Prostaglandins and prostaglandin analogues are biologically active materials that may be absorbed through the skin. Women who are pregnant or attempting to become pregnant should exercise appropriate precautions to avoid direct exposure to the contents of the bottle. In the unlikely event of coming in contact with a substantial portion of the contents of the bottle, thoroughly cleanse the exposed area immediately.

#### Contact lenses

Patients must be instructed to remove contact lenses prior to application of travoprost and wait 15 minutes after instillation of the dose, before reinsertion.

#### Excipients

Travoprost RAFARM contains the preservative benzalkonium chloride, which may cause irritation and is known to discolour soft contact lenses. Benzalkonium chloride has been reported to cause punctate keratopathy and/or toxic ulcerative keratopathy. Since Travoprost RAFARM contains benzalkonium chloride, close monitoring is required with frequent or prolonged use. Patients must be instructed to remove contact lenses prior to application of Travoprost RAFARM, and wait 15 minutes after instillation of the dose, before reinsertion.

#### Paediatric population

Efficacy and safety data in the age group 2 months to < 3 years (9 patients) is limited (see section 5.1). No data are available for children below the age of 2 months.

In children < 3 years old that mainly suffer from PCG (primary congenital glaucoma), surgery (e.g. trabeculotomy/goniotomy) remains the first line treatment.

No long-term safety data are available in the paediatric population.

### **4.5 Interaction with other medicinal products and other forms of interaction**

No interaction studies have been performed.

### **4.6 Fertility, pregnancy and lactation**

#### Women of child-bearing potential/contraception

Travoprost RAFARM must not be used in women of child bearing age/potential unless adequate contraceptive measures are in place (see section 5.3).

#### Pregnancy

Travoprost RAFARM has harmful pharmacological effects on pregnancy and/or the fetus/new-born child. Travoprost RAFARM should not be used during pregnancy unless clearly necessary.

#### Breastfeeding

It is unknown whether travoprost from the eye drops is excreted in human breast milk. Animal studies have shown excretion of travoprost and metabolites in breast milk. The use of Travoprost RAFARM by breast-feeding mothers is not recommended.

#### Fertility

There are no data on the effects of travoprost on human fertility. Animal studies showed no effect of travoprost on fertility at doses more than 250 times the maximum recommended human ocular dose.

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

Travoprost has no or negligible influence on the ability to drive and use machines, however as with any eye drop, temporary blurred vision or other visual disturbances may affect the ability to drive or use machines. If blurred vision occurs at instillation, the patient must wait until the vision clears before driving or using machines.

### **4.8 Undesirable effects**

#### Summary of the safety profile

In clinical trials with travoprost, the most common adverse reactions were ocular hyperaemia and iris hyperpigmentation, occurring in approximately 20% and 6% of patients respectively

#### Tabulated list of adverse reactions

In clinical studies involving over 4400 patients, Travoprost (benzalkonium chloride preserved) was administered once daily as monotherapy or adjunctive therapy to timolol 0.5%. No serious ophthalmic or systemic undesirable effects related to the product were reported in any of the clinical studies. The most frequently reported treatment-related undesirable effect with Travoprost (benzalkonium chloride preserved) monotherapy was hyperaemia of the eye (22.0%), which included ocular, conjunctival, or scleral hyperaemia. Hyperaemia was mild in 83.6% of those patients who experienced it. Almost all patients (98%) who experienced hyperaemia did not discontinue therapy as a result of this event. In phase III clinical studies ranging from 6 to 12 months in duration, hyperaemia decreased over time. In a post approval long-term clinical study of 5 years duration involving 502 patients, Travoprost was administered once daily. No serious ophthalmic or systemic undesirable effects related to Travoprost were reported in the clinical study. The most frequently reported treatment-related undesirable effect with travoprost was iris hyperpigmentation (29.5%) (see section 4.4). Hyperaemia of the eye assessed as related to the use of Travoprost was reported at an incidence of 10.0% with 2% of patients reporting hyperemia of the eye discontinuing study participation due to the undesirable effect.

The following adverse reactions were assessed to be treatment-related with Travoprost (benzalkonium chloride-preserved) monotherapy and are classified according to the following convention: very common ( $\geq 1/10$ ), common ( $> 1/100$  to  $< 1/10$ ), uncommon ( $> 1/1,000$  to  $\leq 1/100$ ), rare ( $> 1/10,000$  to  $\leq 1/1,000$ ), or very rare ( $\leq 1/10,000$ ). Within each frequency group, adverse reactions are presented in decreasing order of seriousness. The adverse reactions were obtained from clinical studies and post- marketing data with travoprost.

**Travoprost (benzalkonium chloride-preserved)**

<b>System Organ Classification</b>	<b>Frequency</b>	<b>Preferred Term</b>
Infections and infestations	Uncommon	herpes simplex, keratitis herpetic
Immune system disorders	Uncommon	hypersensitivity, drug hypersensitivity, seasonal allergy
Nervous system disorder	Common	headache
	Uncommon	dysgeusia, dizziness, visual field defect
Eye disorders	Very common	ocular hyperaemia, iris hyperpigmentation
	Common	punctate keratitis, anterior chamber inflammation, eye pain, photophobia, eye discharge, ocular discomfort, visual acuity reduced, vision blurred, dry eye, eye pruritus, lacrimation increased, erythema of eyelid, eyelid oedema, growth of eyelashes, eyelash discolouration
	Uncommon	corneal erosion, uveitis, keratitis, eye inflammation, photopsia, blepharitis, conjunctival oedema, halo vision, conjunctivitis, conjunctival follicles, hypoaesthesia eye, meibomianitis, ectropion, anterior chamber pigmentation, mydriasis, cataract, eyelid margin crusting, asthenopia
Cardiac disorders	Uncommon	heart rate irregular, palpitations, heart rate decreased
Vascular disorders	Uncommon	blood pressure decreased, blood pressure increased, hypotension, hypertension
Respiratory, thoracic and mediastinal disorders	Uncommon	dyspnoea, asthma, respiratory disorder, oropharyngeal pain, cough, dysphonia, nasal congestion, throat irritation
Gastrointestinal disorders	Uncommon	peptic ulcer reactivated, gastrointestinal disorder, constipation
Skin and subcutaneous tissue disorders	Common	skin hyperpigmentation (periocular)
	Uncommon	dermatitis allergic, periorbital oedema, dermatitis contact, erythema, rash, hair colour changes, hair texture abnormal, hypertrichosis, madarosis
Musculoskeletal, connective tissue and bone disorders	Uncommon	musculoskeletal pain

General disorders and administrative site conditions	Uncommon	asthenia, malaise
Renal and urinary disorders	Not known	dysuria, urinary incontinence
General disorders and administration site conditions	Rare	asthenia
Investigations	Not known	prostatic specific antigen increased

### Paediatric Population

In a 3 month phase 3 study and a 7 days pharmacokinetic study, involving 102 paediatric patients exposed to TRAVATAN, the types and characteristics of adverse reactions reported were similar to what has been observed in adult patients. The short-term safety profiles in the different paediatric subsets were also similar (see section 5.1). The most frequent adverse reactions reported in the paediatric population were ocular hyperaemia (16.9%) and growth of eyelashes (6.5%). In a similar 3 month study in adult patients, these events occurred at an incidence of 11.4% and 0.0%, respectively.

Additional adverse drug reactions reported in paediatric patients in the 3 month paediatric study (n=77) compared to a similar trial in adults (n=185) included erythema of eyelid, keratitis, lacrimation increased, and photophobia all reported as single events with an incidence of 1.3% versus 0.0% seen in adults.

#### Reporting of suspected adverse reactions:

Reporting suspected adverse reactions after authorization 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 reactions via the national reporting system.

Medicines and Healthcare Products Regulatory Agency  
 Address 151 Buckingham Palace Road  
 SW1W 9SZ London  
 Country United Kingdom  
[info@mhra.gsi.gov.uk](mailto:info@mhra.gsi.gov.uk)

## **4.9 Overdose**

No cases of overdose have been reported. A topical overdose is not likely to occur or to be associated with toxicity. A topical overdose of Travoprost Rafarm may be flushed from the eye(s) with lukewarm water. Treatment of a suspected oral ingestion is symptomatic and supportive.

## 5 PHARMACOLOGICAL PROPERTIES

### 5.1 Pharmacodynamic properties

Pharmacotherapeutic Group: Ophthalmologicals-antiglaucoma preparations and miotics-prostaglandin analogues

ATC code: S01E E04

#### Mechanism of action

**Travoprost, a prostaglandin F<sub>2α</sub> analogue, is a highly selective full agonist which has a high affinity for the prostaglandin FP receptor, and reduces the intraocular pressure by increasing the outflow of aqueous humour via trabecular meshwork and uveoscleral pathways. Reduction of the intraocular pressure in man starts about 2 hours after administration and maximum effect is reached after 12 hours. Significant lowering of intraocular pressure can be maintained for periods exceeding 24 hours with a single dose.**

**Data on adjunctive administration of Travoprost with timolol 0.5% and limited data with brimonidine 0.2% were collected during clinical trials that showed an additive effect of Travoprost with these glaucoma medications. No clinical data are available on adjunctive use with other ocular hypotensive medications.**

#### Secondary pharmacology

Travoprost significantly increased optic nerve head blood flow in rabbits following 7 days of topical ocular administration (1.4 micrograms, once-daily).

#### Paediatric population

The efficacy of travoprost in paediatric patients from 2 months to less than 18 years of age was demonstrated in a 12-week, double-masked clinical study of travoprost compared with timolol in 152 patients diagnosed with ocular hypertension or paediatric glaucoma. Patients received either travoprost 0.004% once daily or timolol 0.5% (or 0.25% for subjects younger than 3 years old) twice daily. The primary efficacy endpoint was the intraocular pressure (IOP) change from baseline at Week 12 of the study. Mean IOP reductions in the travoprost and timolol groups were similar (see Table 1).

In the age groups 3 to < 12 years (n=36) and 12 to < 18 years (n=26), mean IOP reduction at Week 12 in the travoprost group was similar to that in the timolol group. Mean IOP reduction at Week 12 in the 2 months to < 3 years of age group was 1.8 mmHg in the travoprost group and 7.3 mmHg in the timolol group. IOP reductions for this group were based on only 6 patients in the timolol group and 9 patients in the travoprost group where 4 patients in the travoprost group versus 0 patients in the timolol group had no relevant mean IOP reduction at Week 12. No data are available for children less than 2 months old.

The effect on IOP was seen after the second week of treatment and was consistently maintained throughout the 12 week period of study for all age groups.

**Table 1 Comparison of Mean IOP Change from Baseline (mmHg) at Week 12**

<b>Travoprost</b>		<b>Timolo l</b>		<b>Mean Difference</b>	<b>(95% CI)</b>
<b>N</b>	<b>Mean (SE)</b>	<b>N</b>	<b>Mean (SE)</b>		
53	-6.4 (1.05)	60	-5.8 (0.96)	-0.5	(-2.1, 1.0)

SE = Standard Error; CI = Confidence Interval;

<sup>a</sup>Mean difference is Travoprost – Timolol. Estimates based on least squares means derived from a statistical model that accounts for correlated IOP measurements within patient where primary diagnosis and baseline IOP stratum are in the model.

## **5.2 Pharmacokinetic properties**

### Absorption

Travoprost is an ester prodrug. It is absorbed through the cornea where the isopropyl ester is hydrolysed to the active free acid. Studies in rabbits have shown peak concentrations of 20 ng/g of the free acid in aqueous humour one to two hours after topical dosing of Travoprost RAFARM. Aqueous humour concentrations declined with a half-life of approximately 1.5 hours.

### Distribution

Following topical ocular administration of Travoprost RAFARM to healthy volunteers, low systemic exposure to active free acid was demonstrated. Peak active free acid plasma concentrations of 25 pg/ml or less were observed between 10 and 30 minutes post-dose. Thereafter, plasma levels declined rapidly to below the 10 pg/ml assay quantitation limit before 1 hour post-administration. Due to the low plasma concentrations and rapid elimination following topical dosing, the elimination half-life of active free acid in man could not be determined.

### Biotransformation

Metabolism is the major route of elimination of both travoprost and the active free acid. The systemic metabolic pathways parallel those of endogenous prostaglandin F<sub>2α</sub> which are characterised by reduction of the 13-14 double bond, oxidation of the 15-hydroxyl and β-oxidative cleavages of the upper side chain.

### Elimination

Travoprost free acid and its metabolites are mainly excreted by the kidneys. Travoprost RAFARM has been studied in patients with mild to severe hepatic impairment and in patients with mild to severe renal impairment (creatinine clearance as low as 14 ml/min). No dosage adjustment is necessary in these patients.

### Paediatric population

A pharmacokinetic study in paediatric patients aged 2 months to < 18 years demonstrated very low plasma exposure to travoprost free acid, with concentrations ranging from below the 10 pg/mL assay limit of quantitation (BLQ) to 54.5 pg/mL. In 4 previous systemic pharmacokinetic studies in adult populations, travoprost free acid plasma concentrations ranged from BLQ to 52.0 pg/mL. While most of the plasma data across all studies was non-quantifiable, making statistical comparisons of systemic exposure across age groups unfeasible, the overall trend shows that plasma exposure to travoprost free acid following topical administration of travoprost is extremely low across all age groups evaluated.

### **5.3 Preclinical safety data**

In ocular toxicity studies in monkeys, administration of travoprost at a dose of 0.45 microgram, twice a day, was shown to induce increased palpebral fissure. Topical ocular administration of travoprost to monkeys at concentrations of up to 0.012% to the right eye, twice daily for one year resulted in no systemic toxicity.

Reproduction toxicity studies have been undertaken in rat, mice and rabbit by systemic route. Findings are related to FP receptor agonist activity in uterus with early embryoletality, post-implantation loss, foetotoxicity. In pregnant rat, systemic administration of travoprost at doses more than 200 times the clinical dose during the period of organogenesis resulted in an increased incidence of malformations. Low levels of radioactivity were measured in amniotic fluid and foetal tissues of pregnant rats administered 3H-travoprost. Reproduction and development studies have demonstrated a potent effect on foetal loss with a high rate observed in rats and mice (180 pg/ml and 30 pg/ml plasma, respectively) at exposures 1.2 to 6 times the clinical exposure (up to 25 pg/ml).

## **6 PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

Benzalkonium chloride

Macrogol-15-Hydroxystearate

Trometamol

Boric acid

EDTA disodium

Mannitol

Sodium hydroxide and/or hydrochloric acid (to adjust pH)

Water for injections

## **6.2 Incompatibilities**

None known

Specific in vitro interaction studies were performed with Travoprost and medicinal products containing thiomersal. No evidence of precipitation was observed.

## **6.3 Shelf life**

Unopened: 2 years.

Discard 4 weeks after first opening.

## **6.4 Special precautions for storage**

Keep the bottle in the outer container.

This medicinal product does not require any special storage conditions.

## **6.5 Nature and contents of container**

Polypropylene bottle with LDPE dropper and HDPE cap.

Each dropper container contains 2.5 ml solution.

Cartons containing 1 or 3 bottles of 2.5 ml eye drops solution.

Not all pack sizes may be marketed.

## **6.6 Special precautions for disposal**

No special requirements.

**7      MARKETING AUTHORISATION HOLDER**

Rafarm UK Ltd., 6th Floor, 2 Kingdom Street, London, W2 6BD, UK

**8      MARKETING AUTHORISATION NUMBER(S)**

PL 46130/0006

**9      DATE OF FIRST AUTHORISATION/RENEWAL OF THE  
AUTHORISATION**

Date of first authorisation: 17/06/2014

**10     DATE OF REVISION OF THE TEXT**

27/03/2023