

TIOFLOW

(Tiotropium Bromide)

Inhalation Powder

18 mcg
Hard Capsule

COMPOSITION

Each capsule contains:
Tiotropium (as Bromide Monohydrate) 18mcg

THERAPEUTIC INDICATIONS

Tiotropium is indicated as a maintenance bronchodilator treatment to relieve symptoms of patients with chronic obstructive pulmonary disease (COPD).

DOSAGE AND ADMINISTRATION

Posology

The medicinal product is intended for inhalation use only.

The recommended dosage of tiotropium bromide is inhalation of the contents of one capsule once daily with the Robust device at the same time of day.

The recommended dose should not be exceeded.

Tiotropium bromide capsules are only for inhalation and not for oral intake.

Tiotropium bromide capsules must not be swallowed.

Tiotropium bromide should only be inhaled with the Robust device.

Special populations

Geriatric patients can use tiotropium bromide at the recommended dose.

Renally impaired patients can use tiotropium bromide at the recommended dose. For patients with moderate to severe impairment (creatinine clearance ≤ 50 ml/min).

Hepatically impaired patients can use tiotropium bromide at the recommended dose.

Paediatric population

COPD

There is no relevant use in the pediatric population (below 18 years) in the indication stated.

Cystic fibrosis

The safety and efficacy of Tiotropium bromide 18 microgram in children and adolescents has not been established. No data are available.

Method of administration

To ensure proper administration of the medicinal product the patient should be trained how to use the inhaler by the physician or by other healthcare professionals.

TIOTROPIUM BROMIDE capsules contain only a small amount of powder so that the capsule is only partially filled.

CONTRAINDICATIONS

Hypersensitivity to the active substance or to the excipient listed. Or to atropine or its derivatives, e.g. ipratropium or oxitropium.

SPECIAL WARNINGS AND PRECAUTIONS FOR USE

Tiotropium bromide, as a once daily maintenance bronchodilator, should not be used for the initial treatment of acute episodes of bronchospasm, i.e. rescue therapy.

Immediate hypersensitivity reactions may occur after administration of tiotropium bromide inhalation powder.

Consistent with its anticholinergic activity, tiotropium bromide should be used with caution in patients with narrow-angle glaucoma, prostatic hyperplasia or bladder-neck obstruction.

Inhaled medicines may cause inhalation-induced bronchospasm.

Tiotropium should be used with caution in patients with recent myocardial infarction < 6 months; any unstable or life-threatening cardiac arrhythmia or cardiac arrhythmia requiring intervention or a change in drug therapy in the past year; hospitalization of heart failure (NYHA Class III or IV) within the past year. These patients were excluded from the clinical trials and these conditions may be affected by the anticholinergic mechanism of action.

As plasma concentration increases with decreased renal function in patients with moderate to severe renal impairment (creatinine clearance ≤ 50 ml/min) tiotropium bromide should be used only if the expected benefit outweighs the potential risk. There is no long-term experience in patients with severe renal impairment.

Patients should be cautioned to avoid getting the drug powder into their eyes. They should be advised that this may result in precipitation or worsening of narrow-angle glaucoma, eye pain or discomfort, temporary blurring of vision, visual halos or colored images in association with red eyes from conjunctival congestion and corneal oedema. Should any combination of these eye symptoms develop, patients should stop using tiotropium bromide and consult a specialist immediately?

Dry mouth, which has been observed with anti-cholinergic treatment, may in the long term be associated with dental caries.

Tiotropium bromide should not be used more frequently than once daily.

TIOTROPIUM BROMIDE capsules contain 5.5 mg lactose monohydrate. This amount does not normally cause problems in lactose intolerant patients. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine. The excipient lactose monohydrate may contain small amounts of milk proteins which may cause allergic reactions.

DRUG INTERACTIONS

Effects of Other Drugs on Ranolazine

Although no formal drug interaction studies have been performed, tiotropium bromide inhalation powder has been used concomitantly with other drugs without clinical evidence of drug interactions. These include sympathomimetic bronchodilators, methylxanthines, oral and inhaled steroids, commonly used in the treatment of COPD.

Use of LABA or ICS was not found to alter the exposure to tiotropium.

The co-administration of tiotropium bromide with other anticholinergic-containing drugs has not been studied and is therefore not recommended.

FERTILITY, PREGNANCY AND LACTATION

Pregnancy

There is a very limited amount of data from the use of tiotropium in pregnant women. Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity at clinically relevant doses. As a precautionary measure, it is preferable to avoid the use of Tiotropium bromide during pregnancy.

Breast-feeding

It is unknown whether tiotropium bromide is excreted in human breast milk. Despite studies in rodents which have demonstrated that excretion of tiotropium bromide in breast milk occurs only in small amounts, use of Tiotropium bromide is not recommended during breast-feeding. Tiotropium bromide is a long-acting compound. A decision on whether to continue/discontinue breast-feeding or to continue/discontinue therapy with Tiotropium bromide should be made taking into account the benefit of breast-feeding to the child and the benefit of Tiotropium bromide therapy to the woman.

Fertility

Clinical data on fertility are not available for tiotropium. A non-clinical study performed with tiotropium showed no indication of any adverse effect on fertility.

EFFECTS ON ABILITY TO DRIVE

No studies on the effects on the ability to drive and use machines have been performed. The occurrence of dizziness, blurred vision, or headache may influence the ability to drive and use machinery.

ADVERSE DRUG REACTIONS

Summary of the safety profile

Many of the listed undesirable effects can be

assigned to the anticholinergic properties of TIOTROPIUM BROMIDE.

Tabulated summary of adverse reactions

The frequencies assigned to the undesirable effects

listed below are based on crude incidence rates of adverse drug reactions (i.e. events attributed to tiotropium) observed in the tiotropium group (9,647 patients) from 28 pooled placebo-controlled clinical trials with treatment periods ranging from four weeks to four years.

Frequency is defined using the following convention:

Very common ($\geq 1/10$); common ($\geq 1/100$ to $< 1/10$); uncommon ($\geq 1/1,000$ to $< 1/100$); rare ($\geq 1/10,000$ to $< 1/1,000$); very rare ($< 1/10,000$), not known (cannot be estimated from the available data)

System Organ Class / MedDRA Preferred Term	Frequency
<u>Metabolism and nutrition disorders</u>	
Dehydration	Not known
<u>Nervous system disorders</u>	
Dizziness	Uncommon
Headache	Uncommon
Taste disorders	Uncommon
Insomnia	Rare
<u>Eye disorders</u>	
Vision blurred	Uncommon
Glaucoma	Rare
Intraocular pressure increased	Rare
<u>Cardiac disorders</u>	
Atrial fibrillation	Uncommon
Supraventricular tachycardia	Rare
Tachycardia	Rare
Palpitations	Rare
<u>Respiratory, thoracic and mediastinal disorders</u>	
Pharyngitis	Uncommon
Dysphonia	Uncommon
Cough	Uncommon
Bronchospasm	Rare
Epistaxis	Rare
Laryngitis	Rare
Sinusitis	Rare
<u>Gastrointestinal disorders</u>	
Dry Mouth	Common
Gastroesophageal reflux disease	Uncommon
Constipation	Uncommon
Oropharyngeal candidiasis	Uncommon
Intestinal obstruction, including ileus paralytic	Rare
Gingivitis	Rare
Glossitis	Rare
Dysphagia	Rare
Stomatitis	Rare
Nausea	Rare
Dental caries	Not known
<u>Skin and subcutaneous tissue disorders, immune system disorders</u>	
Rash	Uncommon
Urticaria	Rare
Pruritus	Rare
Hypersensitivity (including immediate reactions)	Rare
Angioedema	Rare

Anaphylactic reaction	Not known
Skin infection, skin ulcer	Not known
Dry skin	Not known
<u>Musculoskeletal and connective tissue disorders</u>	
Joint swelling	Not known
<u>Renal and urinary disorders</u>	
Dysuria	Uncommon
Urinary retention	Uncommon
Urinary tract infection	Rare

Description of selected adverse reactions

In controlled clinical studies, the commonly observed undesirable effects were anticholinergic undesirable effects such as dry mouth which occurred in approximately 4% of patients.

In 28 clinical trials, dry mouth led to discontinuation in 18 of 9,647 tiotropium treated patients (0.2 %).

Serious undesirable effects consistent with anticholinergic effects include glaucoma, constipation and intestinal obstruction including ileus paralytic as well as urinary retention.

Other special population

An increase in anticholinergic effects may occur with increasing age.

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 at pv@searlecompany.com

OVERDOSE

High doses of tiotropium bromide may lead to anticholinergic signs and symptoms.

However, there were no systemic anticholinergic adverse effects following a single inhaled dose of up to 340 microgram tiotropium bromide in healthy volunteers. Additionally, no relevant adverse effects, beyond dry mouth, were observed following 7-day dosing of up to 170 microgram tiotropium bromide in healthy volunteers. In a multiple dose study in COPD patients with a maximum daily dose of 43 microgram tiotropium bromide over four weeks no significant undesirable effects have been observed.

Acute intoxication by inadvertent oral ingestion of tiotropium bromide capsules is unlikely due to low oral bioavailability.

PHARMACOLOGICAL PROPERTIES

Pharmacodynamics

Pharmacotherapeutic group: Other drugs for obstructive airway diseases, inhalants, anticholinergics

ATC code: R03B B04

Mechanism of action

Tiotropium bromide is a long-acting, specific, muscarinic receptor antagonist, in clinical medicine often called an anticholinergic. By binding to the muscarinic receptors in the bronchial smooth musculature, tiotropium bromide inhibits the cholinergic (broncho constrictive) effects of acetylcholine, released from parasympathetic nerve endings. It has similar affinity to the subtypes of muscarinic receptors, M₁ to M₅. In the airways, tiotropium bromide competitively and reversibly antagonizes the M₃ receptors, resulting in relaxation. The effect was dose dependent and lasted longer than 24h. The long duration is probably due to the very slow dissociation from the M₃ receptor, exhibiting a significantly longer dissociation half-life than ipratropium. As an N-quaternary anticholinergic, tiotropium bromide is topically (broncho-) selective when administered by inhalation, demonstrating an acceptable therapeutic range before systemic anticholinergic effects may occur.

Pharmacodynamic effects

The bronchodilation is primarily a local effect (on the airways), not a systemic one. Dissociation from M₂-receptors is faster than from M₃, which in functional in vitro studies, elicited (kinetically controlled) receptor subtype selectivity of M₃ over M₂. The high potency and slow receptor dissociation

found its clinical correlate in significant and long-acting bronchodilation in patients with COPD.

Cardiac electrophysiology

Electrophysiology: In a dedicated QT study involving 53 healthy volunteers, TIOTROPIUM BROMIDE 18 mcg and 54 mcg (i.e. three times the therapeutic dose) over 12 days did not significantly prolong QT intervals of the ECG.

Clinical efficacy and safety

The clinical development programme included four one-year and two six-month randomized, double-blind studies in 2663 patients (1308 receiving tiotropium bromide). The one-year programme consisted of two placebo-controlled trials and two trials with an active control (ipratropium). The two six-month trials were both, salmeterol and placebo controlled. These studies included lung function and health outcome measures of dyspnea, exacerbations and health-related quality of life.

Lung function

Tiotropium bromide, administered once daily, provided significant improvement in lung function (forced expiratory volume in one second, FEV₁ and forced vital capacity, FVC) within 30 minutes following the first dose which was maintained for 24 hours. Pharmacodynamic steady state was reached within one week with the majority of bronchodilation observed by the third day. Tiotropium bromide significantly improved morning and evening PEFR (peak expiratory flow rate) as measured by patient's daily recordings. The bronchodilator effects of tiotropium bromide were maintained throughout the one-year period of administration with no evidence of tolerance.

A randomized, placebo-controlled clinical study in 105 COPD patients demonstrated that bronchodilation was maintained throughout the 24-hour dosing interval in comparison to placebo regardless of whether the drug was administered in the morning or in the evening.

Clinical trials (up to 12 months)

Dyspnea, Exercise tolerance

Tiotropium bromide significantly improved dyspnea (as evaluated using the Transition Dyspnea Index.). This improvement was maintained throughout the treatment period.

The impact of improvements in dyspnea on exercise tolerance was investigated in two randomized, double-blind, placebo-controlled trials in 433 patients with moderate to severe COPD. In these trials, six weeks of treatment with TIOTROPIUM BROMIDE significantly improved symptom-limited exercise endurance time during cycle ergometry at 75% of maximal work capacity by 19.7% (Trial A) and 28.3% (Trial B) compared with placebo.

Health-related Quality of Life

In a 9-month, randomized, double-blind, placebo-controlled clinical trial of 492 patients, TIOTROPIUM BROMIDE improved health-related quality of life as determined by the St. George's Respiratory Questionnaire (SGRQ) total score. The proportion of patients treated with TIOTROPIUM BROMIDE which achieved a meaningful improvement in the SGRQ total score (i.e. > 4 units) was 10.9% higher compared with placebo (59.1% in the TIOTROPIUM BROMIDE groups vs. 48.2% in the placebo group (p=0.029). The mean difference between the groups was 4.19 units (p=0.001; confidence interval: 1.69 – 6.68). The improvements of the subdomains of the SGRQ-score were 8.19 units for "symptoms", 3.91 units for "activity" and 3.61 units for "impact on daily life". The improvements of all of these separate subdomains were statistically significant.

COPD Exacerbations

In a randomized, double-blind, placebo controlled trial of 1,829 patients with moderate to very severe COPD, tiotropium bromide statistically significantly reduced the proportion of patients who experienced exacerbations of COPD (32.2% to 27.8%) and statistically significantly reduced the number of exacerbations by 19% (1.05 to 0.85 events per patient year of exposure). In addition, 7.0% of patients in the tiotropium bromide group and 9.5% of patients in the placebo group were hospitalized due to a COPD exacerbation (p=0.056). The number of hospitalizations due to COPD was reduced by 30% (0.25 to 0.18 events per patient year of exposure).

A one-year randomized, double-blind, double-dummy, parallel-group trial compared the effect of treatment with 18 microgram of TIOTROPIUM BROMIDE once daily with that of 50 micrograms of salmeterol HFA pMDI twice daily on the incidence of moderate and severe exacerbations in 7,376 patients with COPD and a history of exacerbations in the preceding year.

Table 1: Summary of exacerbation endpoints

† Time [days] refers to 1st quartile of patients. Time to event analysis was done using Cox's proportional hazards regression model with (pooled) centre and treatment as covariate; ratio refers to hazard ratio.

§ Time to event analysis was done using Cox's proportional hazards regression model with (pooled) centre and treatment as covariate; ratio refers to hazard ratio. Time [days] for the 1st quartile of patients cannot be calculated, because proportion of patients with severe exacerbation is too low.

* Number of patients with event were analyzed using Cochran-Mantel-Haenszel test stratified by pooled centre; ratio refers to risk ratio.

Compared with salmeterol, TIOTROPIUM BROMIDE increased the time to the first exacerbation (187 days vs. 145 days), with a 17% reduction in risk (hazard ratio, 0.83; 95% confidence interval [CI], 0.77 to 0.90; P<0.001). TIOTROPIUM BROMIDE also increased the time to the first severe (hospitalized) exacerbation (hazard ratio, 0.72; 95% CI, 0.61 to 0.85; P<0.001).

Long-term clinical trials (more than 1 year, up to 4 years)

In a 4-year, randomized, double-blind, placebo-controlled clinical trial of 5,993 randomized patients (3,006 receiving placebo and 2,987 receiving Tiotropium bromide), the improvement in FEV₁ resulting from Tiotropium bromide, compared with placebo, remained constant throughout 4 years. A higher proportion of patients completed ≥ 45 months of treatment in the Tiotropium bromide group compared with the placebo group (63.8% vs. 55.4%, p<0.001). The annualized rate of decline of FEV₁ compared to placebo was similar between Tiotropium bromide and placebo. During treatment, there was a 16% reduction in the risk of death. The incidence rate of death was 4.79 per 100 patient years in the placebo group vs. 4.10 per 100 patient years in the tiotropium group (hazard ratio (tiotropium/placebo) = 0.84, 95% CI = 0.73, 0.97). Treatment with tiotropium reduced the risk of respiratory failure (as recorded through adverse event reporting) by 19% (2.09 vs. 1.68 cases per 100 patient years, relative risk (tiotropium/placebo) = 0.81, 95% CI = 0.65, 0.999).

Tiotropium active-controlled study

A long-term, large scale randomized, double-blind, active-controlled study with an observation period up to 3 years has been performed to compare the efficacy and safety of Tiotropium bromide and Tiotropium bromide Respimat (5,694 patients receiving Tiotropium bromide; 5,711 patients receiving Tiotropium bromide Respimat). The primary endpoints were time to first COPD exacerbation, time to all-cause mortality and in a sub-study (906 patients) trough FEV₁ (pre-dose).

The time to first COPD exacerbation was numerically similar during the study with Tiotropium bromide and Tiotropium bromide Respimat (hazard ratio (Tiotropium bromide Robust /Tiotropium bromide Respimat) 1.02 with a 95% CI of 0.97 to 1.08). The median number of days to the first COPD exacerbation was 719 days for Tiotropium bromide and 756 days for Tiotropium bromide Respimat.

The bronchodilator effect of Tiotropium bromide was sustained over 120 weeks, and was similar to Tiotropium bromide Respimat. The mean difference in trough FEV₁ for Tiotropium bromide versus Tiotropium bromide Respimat was 0.010 L (95% CI -0.018 to 0.038 L).

In the post-marketing TIOSPIR study comparing Tiotropium bromide Respimat and Tiotropium bromide, all-cause mortality including vital status follow up was similar during the study with Tiotropium bromide and Tiotropium bromide Respimat (hazard ratio (Tiotropium bromide Robust /Tiotropium bromide Respimat) 1.04 with a 95% CI of 0.91 to 1.19).

Paediatric population

The European Medicines Agency has waived the obligation to submit results of studies with Tiotropium bromide in all subsets of the pediatric population in COPD and cystic fibrosis.

Pharmacokinetic properties

a) General Introduction

Tiotropium bromide is a non-chiral quaternary ammonium compound and is sparingly soluble in water. Tiotropium bromide is administered by dry powder inhalation. Generally, with the inhaled route of administration, the majority of the delivered dose is deposited in the gastro-intestinal tract, and to a lesser extent in the intended organ of the lung. Many of the pharmacokinetic data described below were obtained with higher doses than recommended for therapy.

b) General Characteristics of the Active Substance after Administration of the Medicinal Product

Absorption: Following dry powder inhalation by young healthy volunteers, the absolute bioavailability of 19.5% suggests that the fraction reaching the lung is highly bioavailable. Oral solutions of tiotropium have an absolute bioavailability of 2-3%. Maximum tiotropium plasma concentrations were observed 5-7 minutes after inhalation.

At steady state, peak tiotropium plasma levels in COPD patients were 12.9 pg/ml and decreased rapidly in a multi-compartmental manner. Steady state trough plasma concentrations were 1.71 pg/ml. Systemic exposure following the inhalation of tiotropium via the Robust device was similar to tiotropium inhaled via the Respimat inhaler.

Distribution: Tiotropium has a plasma protein binding of 72% and shows a volume of distribution of 32 L/kg. Local concentrations in the lung are not known, but the mode of administration suggests substantially higher concentrations in the lung. Studies in rats have shown that tiotropium bromide does not penetrate the blood-brain barrier to any relevant extent.

Biotransformation: The extent of biotransformation is small. This is evident from a urinary excretion of 74% of unchanged substance after an intravenous dose to young healthy volunteers. The ester tiotropium bromide is nonenzymatically cleaved to the alcohol (N-methylscopine) and acid

Endpoint	TIOTROPIUM BROMIDE 18 microgram (Robust) N = 3,707	Salmeterol 50 micrograms (HFA pMDI) N = 3,669	Ratio (95% CI)	p-value
Time [days] to first exacerbation [†]	187	145	0.83 (0.77 - 0.90)	<0.001
Time to first severe (hospitalised) exacerbation [§]	-	-	0.72 (0.61 - 0.85)	<0.001
Patients with ≥1 exacerbation, n (%) [*]	1,277 (34.4)	1,414 (38.5)	0.90 (0.85 - 0.95)	<0.001
Patients with ≥1 severe (hospitalised) exacerbation, n (%) [*]	262 (7.1)	336 (9.2)	0.77 (0.66 - 0.89)	<0.001

compound (dithienylglycolic acid) that are inactive on muscarinic receptors. In-vitro experiments with human liver microsomes and human hepatocytes suggest that some further drug (< 20% of dose after intravenous administration) is metabolized by cytochrome P450 (CYP) dependent oxidation and subsequent glutathione conjugation to a variety of Phase II-metabolites.

In vitro studies in liver microsomes reveal that the enzymatic pathway can be inhibited by the CYP 2D6 (and 3A4) inhibitors, quinidine, ketoconazole and gestodene. Thus CYP 2D6 and 3A4 are involved in metabolic pathway that is responsible for the elimination of a smaller part of the dose. Tiotropium bromide even in supra-therapeutic concentrations does not inhibit CYP 1A1, 1A2, 2B6, 2C9, 2C19, 2D6, 2E1 or 3A in human liver microsomes.

Elimination: The effective half-life of tiotropium ranges between 27-45 h in COPD patients. Total clearance was 880 ml/min after an intravenous dose in young healthy volunteers. Intravenously administered tiotropium is mainly excreted unchanged in urine (74%). After dry powder inhalation by COPD patients to steady-state, urinary excretion is 7% (1.3 µg) of the unchanged drug over 24 hours, the remainder being mainly non-absorbed drug in gut that is eliminated via the feces. The renal clearance of tiotropium exceeds the creatinine clearance, indicating secretion into the urine. After chronic once daily inhalation by COPD patients, pharmacokinetic steady state was reached by day 7 with no accumulation thereafter.

Linearity / Nonlinearity: Tiotropium demonstrates linear pharmacokinetics in the therapeutic range independent of the formulation.

c) Characteristics in Patients

Geriatric Patients: As expected for all predominantly renally excreted drugs, advancing age was associated with a decrease of tiotropium renal clearance (365 mL/min in COPD patients < 65 years to 271 mL/min in COPD patients ≥ 65 years) This did not result in a corresponding increase in AUC_{0-6,ss} or C_{max,ss} Values.

Renally Impaired Patients: Following once daily inhaled administrations of tiotropium to steady-state in COPD patients, mild renal impairment (CL_{CR} 50-80 ml/min) resulted in slightly higher AUC_{0-6,ss} (between 1.8-30% higher) and

similar C_{max,ss} values compared to patients with normal renal function (CL_{CR} >80 ml/min).

In COPD patients with moderate to severe renal impairment (CL_{CR} <50 ml/min), the intravenous administration of tiotropium resulted in doubling of the total exposure (82% higher AUC_{0-4h}) and 52% higher C_{max} compared to COPD patients with normal renal function, which was confirmed by plasma concentrations after dry powder inhalation.

Hepatically Impaired Patients: Liver insufficiency is not expected to have any relevant influence on tiotropium pharmacokinetics. Tiotropium is predominantly cleared by renal elimination (74% in young healthy volunteers) and simple non-enzymatic ester cleavage to pharmacologically inactive products.

Japanese COPD Patients: In cross trial comparison, mean peak tiotropium plasma concentrations 10 minutes post-dosing at steady-state were 20% to 70% higher in Japanese compared to Caucasian COPD patients following inhalation of tiotropium but there was no signal for higher mortality or cardiac risk in Japanese patients compared to Caucasian patients. Insufficient pharmacokinetic data is available for other ethnicities or races.

Paediatric Patients:

d) Pharmacokinetic / Pharmacodynamic Relationship(s)

There is no direct relationship between pharmacokinetics and pharmacodynamics.

PRECLINICAL SAFETY DATA

Many effects observed in conventional studies of safety pharmacology, repeated dose toxicity, and reproductive toxicity could be explained by the anticholinergic properties of tiotropium bromide. Typically, in animals reduced food consumption, inhibited body weight gain, dry mouth and nose, reduced lacrimation and salivation, mydriasis and increased heart rate were observed. Other relevant effects noted in repeated dose toxicity studies were: mild irritancy of the respiratory tract in rats and mice evinced by rhinitis and epithelial changes of the nasal cavity and larynx, and prostatitis along with proteinaceous deposits and lithiasis in the bladder in rats.

Harmful effects with respect to pregnancy, embryonal/foetal development, parturition or postnatal development could only be demonstrated at maternally toxic dose levels. Tiotropium bromide was not teratogenic in rats or rabbits. In a general reproduction and fertility study in rats, there was no indication of any adverse effect on fertility or mating performance of either treated parents or their offspring at any dosage.

The respiratory (irritation) and urogenital (prostatitis) changes and reproductive toxicity were observed at local or systemic exposures more than five-fold the therapeutic exposure. Studies on genotoxicity and carcinogenic potential revealed no special hazard for humans.

PRESENTATION

TioFlow 18mcg Capsules are available in alu alu blister strip 30's.

INSTRUCTIONS

- To be sold on the prescription of a registered medical practitioner only.
- Protect from sunlight, moisture and heat.
- Store below 30°C.
- Keep all medicines out of the reach of children.
- This Capsule is not intended to be swallowed.
- Use this capsule with Robust device.

REGISTRATION NUMBER

TioFlow 18mcg Capsules 086055

Manufacturing Licence No 000016

NAME AND BUSINESS ADDRESS OF THE HOLDER OF THE CERTIFICATE OF REGISTRATION – As per registrations letter

Mfg. Innovator's Specs.

Manufactured by:

The Searle Company Limited,

F-319, S.I.T.E., Karachi – Pakistan

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