

1. Name of the medicinal product

UROTEX 4 mg Film-Coated Tablet

2. Qualitative and quantitative composition

Each film-coated tablet contains 4 mg of Silodosin.

For the full list of excipients, see section 6.1.

3. Pharmaceutical form

Film-coated tablet

White biconvex oval film coated tablet debossed with "S,4" and breakline on one side and plain on the other.

4. Clinical particulars

4.1 Therapeutic indications

Bladder outlet obstruction associated with benign prostatic hyperplasia in patients ≥ 50 years.

<Precautions>

UROTEX is associated with a high incidence of adverse reactions and abnormal ejaculation is reported frequently as a characteristic adverse reaction. UROTEX should be used after careful consideration is given to the risks associated with its use and carefully explaining the adverse reactions to the patient. (See **4.4 Special warnings and precautions for use** and **4.8 Undesirable effects**)

4.2 Posology and method of administration

Posology

The adult dosage for oral use is 4 mg of silodosin twice daily after breakfast and evening meals. The dosage may be reduced according to the patient's conditions.

<Precautions>

The plasma concentration of silodosin may be elevated in patients with impaired hepatic function. It has been reported that plasma concentration of silodosin is increased in patients with impaired renal function. Therefore, starting treatment at a low dose (2 mg/dose) while observing the condition of the patient, for instance, should be considered. (See **5.2 Pharmacokinetic properties**)

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

1. Careful Administration (UROTEX should be administered with care in the following patients.)

- (1) Patients with orthostatic hypotension [Symptoms may be aggravated.]
- (2) Patients with impaired hepatic function [Elevated plasma drug concentrations may occur.]
(See **4.2 Posology and method of administration/precautions**)
- (3) Patients with impaired renal function [Elevated plasma drug concentrations have been reported
(See **4.2 Posology and method of administration/precautions** and **5.2 Pharmacokinetic properties**)
- (4) Patients treated with phosphodiesterase-5 inhibitors. (See **4.5 Interaction with other medicinal products and other forms of interaction**)

2. Important Precautions

- (1) Abnormal ejaculation (e.g. retrograde ejaculation) has been reported. Therefore, UROTEX should be used after obtaining the understanding of patients by carefully explaining the risk of abnormal ejaculation. (See **4.8 Undesirable effects**)
- (2) Orthostatic hypotension may occur. Therefore, caution should be exercised regarding fluctuations in blood pressure due to changes in body posture.
- (3) The symptom such as dizziness may occur. Therefore, the patient should be advised to exercise caution when engaging in hazardous activities such as working at heights or driving a car.

- (4) Prior to commencement of treatment with UROTEX, the patient should be asked whether they are taking any hypotensive drugs and, in the event that any hypotensive drugs are used, attention should be paid to changes in blood pressure while using UROTEX. If a decrease in blood pressure occurs, appropriate therapeutic actions, such as a dosage reduction or discontinuation of treatment, should be taken.
- (5) It should be borne in mind that treatment with UROTEX does not eliminate the cause of the disease, but gives symptomatic relief. If treatment with UROTEX does not result in the expected effect, consideration should be given to other appropriate therapeutic measures such as surgery.

3. Use in the Elderly

In a patient with impaired hepatic function or renal function, it should take into account to start treatment at a low dose (2 mg daily) of UROTEX while observing a patient's condition. Geriatric patient have generically reduced physiological function.

4. Precautions concerning use

Precaution in dispensing: Patients should be instructed to press the tablet out of a press-through package (PTP) and take it.

[It has been reported that, if the PTP sheet is swallowed, the hard and sharp corners of the sheet may puncture the esophageal mucosa, resulting in severe complications such as mediastinitis.]

5. Other Precautions

- (1) Intraoperative Floppy Iris Syndrome (IFIS) IFIS (a variant of small pupil syndrome) has been observed during cataract surgery in some patients on α 1-blockers or previously treated with α 1-blockers. During pre-operative assessment, eye surgeons and ophthalmic teams should consider whether patients scheduled for cataract surgery are being or have been treated with UROTEX, in order to ensure that appropriate measures will be in place to manage IFIS during surgery.
- (2) In a 104-week administration study in mice, it has been reported that the frequency of seminal vesicle dilatation was increased at doses of 20 mg/kg/day or more.
- (3) In a study on fertility and early embryogenesis until implantation in rats, it has been reported that decidualization of sperm cells in seminiferous tubules was observed at doses of 200 mg/kg/day or more and atrophy/ degeneration of seminiferous tubules as well as decreased sperm survival and sperm count were observed at a dose of 600 mg/kg/day

4.5 Interaction with other medicinal products and other forms of interaction

Silodosin is metabolised mainly by cytochrome P450 3A4 (CYP3A4) (See **5.2 Pharmacokinetic properties**).

Precautions for coadministration (UROTEX should be administered with care when co-administered with the following drugs.)

Table 1

Agents / Drugs	Signs, Symptoms, and Precautionary measures	Mechanism and Risk Factors
Hypotensive agents	Since orthostatic hypotension may occur, attention should be paid to dosage reduction, etc.	Patients receiving treatment with a hypotensive agent may have diminished ability to regulate blood pressure on standing.

Azole antifungal agents (Itraconazole, etc.)	Elevated plasma concentrations of silodosin have been reported following coadministration with ketoconazole (oral preparation), a potent CYP3A4 inhibitor (See 5.2 Pharmacokinetic properties). Since plasma concentrations of silodosin may elevate following coadministration with azole antifungal agents, attention should be paid to dosage reduction, etc.	Since azole antifungal agents inhibit CYP3A4, plasma concentrations of silodosin may elevate following coadministration with these preparations.
Phosphodiesterase-5 inhibitors (PDE5) (Sildenafil citrate, Vardenafil hydrochloride hydrate, etc.)	It has been reported that symptomatic hypotension may occur in concomitant use of these drugs.	Since UROTEx has an α -blocking effect, co-administration may enhance the hypotensive effect due to the vasodilatory effect of these drugs.

Non-Japanese data

Ketoconazole (oral preparation) coadministration

When 16 healthy male volunteers (non-Japanese) who were receiving 200 mg of ketoconazole (p.o.) once daily for 4 days were coadministered a single 4 mg dose of silodosin capsule (p.o.) on day 2, C_{max} and $AUC_{0-\infty}$ of silodosin increased 3.7- and 2.9-fold, respectively, compared to when silodosin alone was administered.

Digoxin coadministration

When silodosin capsule (4 mg, twice daily) was coadministered orally with digoxin (0.25 mg, once daily) for 8 days to 16 healthy male volunteers (non-Japanese), it was confirmed that silodosin capsule has no effect on the pharmacokinetic profile of digoxin.

4.6 Fertility, pregnancy and lactation

In a study on fertility and early embryogenesis until implantation in rats, it has been reported that decidualization of sperm cells in seminiferous tubules was observed at doses of 200 mg/kg/day or more and atrophy/degeneration of seminiferous tubules as well as decreased sperm survival and sperm count were observed at a dose of 600 mg/kg/day.

Before starting treatment, the patient should be informed that occurrence of ejaculation with reduced or no semen may occur, temporarily affecting male fertility.

Use during pregnancy and lactation is not applicable as silodosin is intended for male patients only.

4.7 Effects on ability to drive and use machines

The symptom such as dizziness may occur. Therefore, the patient should be advised to exercise caution when engaging in hazardous activities such as working at heights or driving a car.

4.8 Undesirable effects

Since the following adverse reactions may occur, patient should be carefully monitored and, if any abnormalities are observed, appropriate therapeutic measures such as dosage reduction or discontinuation of treatment should be taken.

(1) Clinically significant adverse reactions

1. Syncope, unconsciousness (Incidence unknown):
A transient unconsciousness associated with hypotension etc. may occur.
2. Impaired hepatic function, jaundice (Both incidence unknown):

Impaired hepatic function and jaundice associated with increased AST and ALT etc. may occur.

(2) Other adverse reactions

The following adverse reactions may occur. Therefore, if any abnormalities are observed, appropriate therapeutic measures such as dosage reduction or discontinuation of treatment should be taken.

Table 2

	Frequency unknown	≥ 5%	≤ 1 - < 5%	<1%
Genito-urinary		Abnormal ejaculation (e.g. retrograde ejaculation) (17.2%)	Impotence, urinary incontinence	
Gastrointestinal	Stomatitis	Thirst	Stomach discomfort, diarrhea, loose stools, constipation	Vomiting, nausea, anorexia, stomachache, abdominal pain, enlarged feeling of abdomen, epigastric discomfort, lower abdominal pain, gastric ulcer, gastritis, atrophic gastritis, heartburn, heavy stomach feeling, duodenal ulcer, increased flatus, increased defecation, feeling of residual stool, anal discomfort
Nervous system/ Psychiatric	Numbness		Dizziness, dizziness on standing up, light-headed feeling, headache	Shoulder stiffness, twilight state, sleepiness, decreased libido, dull headache
Respiratory			Epistaxis, nasal congestion	Nasal discharge, coughing
Cardiovascular				Atrial fibrillation, palpitations, tachycardia, arrhythmia, supraventricular extrasystole, orthostatic hypotension, hypotension, hypertension
Hypersensitivity	lip swelling, swollen tongue, pharyngeal oedema, facial swelling, eyelid oedema			Rash, eruption, eczema, urticaria, itching
Ocular	Intra-operative floppy iris (IFIS), filmy vision			Ocular hyperemia, ocular pruritus, conjunctival bleeding
Hepatic			AST increased, ALT increased, γ-GTP increased, total bilirubin increased, ALP increased, LDH increased	
Renal				BUN increased, creatinine increased

Hematologic			WBC decreased, RBC decreased, hemoglobin decreased, hematocrit decreased	WBC increased, platelet decreased
Others	Edema, Gynaecomastia	Triglycerides increased	Malaise, CRP increased, total cholesterol increased, urine sugar increased, urinary sediment increased	Facial hot flushes, tinnitus, bitter taste, chest pain, lumbar pain, weakness of lower-extremities, sweating, hot flush, mood disorder, serum potassium increased, total protein decreased, prostate specific antigen increased, uric acid increased, urinary protein increased

4.9 Overdose

Silodosin was evaluated at doses of up to 48 mg/day in healthy male subjects. The dose limiting adverse reaction was postural hypotension. If ingestion is recent, induction of vomiting or gastric lavage may be considered. Should overdose of silodosin lead to hypotension, cardiovascular support has to be provided. Dialysis is unlikely to be of significant benefit since silodosin is highly (96.6%) protein bound.

5. Pharmacological properties

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Urologicals, alpha-adrenoreceptor antagonists, ATC code: G04CA04.

Pharmacological Effects

(1) Effect in human tissue

- (1) Affinity to α -adrenergic receptors in the sympathetic nervous system

In a receptor-binding assay on human α_1 -adrenergic receptors, silodosin showed a high affinity to the α_{1A} -adrenergic receptor subtype.

- (2) Effect on prostate gland

In a receptor-binding assay using human prostate membrane specimens, silodosin showed a high affinity to the α_1 -adrenergic receptor subtype.

Silodosin inhibited noradrenalin-induced contractions of human prostate smooth muscle.

(2) Effect in animals

- (1) Effect on lower urinary tract tissue (prostate, urethra, and trigone of bladder)

Silodosin exhibited a potent antagonistic action against noradrenalin-induced contractions in isolated rabbit prostate, urethra, and trigone of bladder.

- (2) Effect on urethral pressure

In anesthetized male rats, phenylephrine-induced increases in urethral pressure in the region of the prostate were selectively inhibited by silodosin. The inhibitory dose was lower than hypotensive dose.

In anesthetized male dogs, increased urethral pressure in the region of the prostate due to electrical stimulation of the hypogastric nerve was also selectively inhibited by silodosin. The inhibitory dose was lower than hypotensive dose.

- (3) Effect in prostatic hypertrophy model

In a male rat prostatic hypertrophy model prepared by administration of sex hormone, bladder irritation symptoms associated with urinary retention were inhibited.

Mechanism of action

By blocking the sympathetic nervous system, which mediates the α_{1A} -adrenoceptor subtype which is distributed in lower urinary tract tissue (prostate, urethra, and trigone of bladder), silodosin reduces smooth muscle tone of lower urinary tract tissue and inhibits increases in urethral pressure, thereby improving lower urinary tract symptoms associated with benign prostatic hyperplasia.

Clinical efficacy and safety

(1) Phase II Double-Blind Comparative Study

When silodosin capsule at a dose of 2 or 4 mg, or placebo was administered orally twice daily for 4 weeks to patients with lower urinary tract symptoms associated with benign prostatic hyperplasia, subjective symptoms (total I-PSS) were significantly improved in the 4 mg group compared to the placebo group (Table 3). Incidence rate of ADRs showed 15.6 % (42/270 cases). The incidence rate of ADRs per dosage showed 7.9 % (7/89 cases) in placebo, 16.9 % (15/89 cases) in 4 mg daily and 21.7 % (20/92 cases) in 8 mg daily. The most common ADRs included abnormal ejaculation 0 % (0/89 cases) in placebo, 11.2 % (10/89 cases) in 4 mg daily and 6.5 % (6/92 cases) in 8 mg daily, thirst 1.1 % (1/89 cases) in placebo, 0 % (0/89 cases) in 4 mg daily and 5.4 % (5/92 cases) in 8 mg daily. Incidence rate of abnormal laboratory data showed 6.7 % (18/270 cases). The incidence rate of ADRs per dosage showed 5.6 % (5/89 cases) in placebo, 6.7 % (6/89 cases) in 4 mg daily and 7.6 % (7/92 cases) in 8 mg daily. The most common ADRs included triglyceride increased 2.3 % (2/86 cases) in placebo, 3.7 % (3/82 cases) in 4 mg daily and 2.4 % (2/84 cases) in 8 mg daily.

Table 3 Change of total I-PSS^{a)} compared to baseline

Group	Score at baseline	Change in Wk 4 compared to baseline	Compared to placebo
			Dunnett's multiple comparison test
Placebo	18.1±5.6 (88)	-3.0±5.8 (88)	-
2 mg x 2/day	18.3±6.5 (84)	-5.7±6.1 (84)	P = 0.013
4 mg x 2/day	18.7±6.0 (87)	-6.6±5.5 (86)	P = 0.000

Unit: Point

Mean±SD (): No. of subjects

^{a)} I-PSS: International Prostate Symptom Score (Mild: 0-7, Moderate: 8-19, Severe: 20-35)

(2) Phase III Double-blind Comparative Study

When silodosin capsule at a dose of 4 mg or placebo was administered orally twice daily for 12 weeks to patients with lower urinary tract symptoms associated with benign prostatic hyperplasia, the total I-PSS in the silodosin and placebo groups on completion of the study showed a decrease of 8.3 and 5.3 points, respectively, compared to baseline (Fig. 1, Table 4). The percentage (%) of patients in the silodosin and placebo groups whose total I-PSS improved by at least 25% compared to baseline was 76.4% (133/174 patients) and 50.6% (45/89 patients), respectively. The percentage (%) of patients in the silodosin and placebo groups whose symptoms improved to mild (total I-PSS:< 8) was 47.7% (83/174 patients) and 31.5% (28/89 patients), respectively. In the silodosin group, an improvement in subjective symptoms was seen from as early as after one week of treatment and an improvement effect was also observed in patients whose symptoms were severe. Incidence rate of ADRs showed 54.9 % (96/175 cases) in silodosin group and 22.5 % (20/89 cases) in placebo group. The most common ADRs included abnormal ejaculation 22.3 % (39/175 cases), loose stools and thirst 8.6 % (15/175 cases), urinary incontinence 5.7 % (10/175 cases), diarrhea 4.6 % (8/175 cases) and nasal congestion 4.0 % (7/175 cases) in silodosin group, loose stools, thirst and headache 4.5 % (4/89 cases) in placebo group. Incidence rate of abnormal laboratory data showed 31.4 % (55/175 cases) in silodosin group and 21.6 % (19/88 cases) in placebo group. The most common ADRs included triglyceride increased 12.0 % (21/175 cases), CRP increased 5.7 % (10/175 cases) and γ -GTP increased 3.4 % (6/175 cases) in silodosin group, triglyceride increased 10.2 % (9/88 cases), LDH increased and CRP increased 3.4 % (3/88 cases).

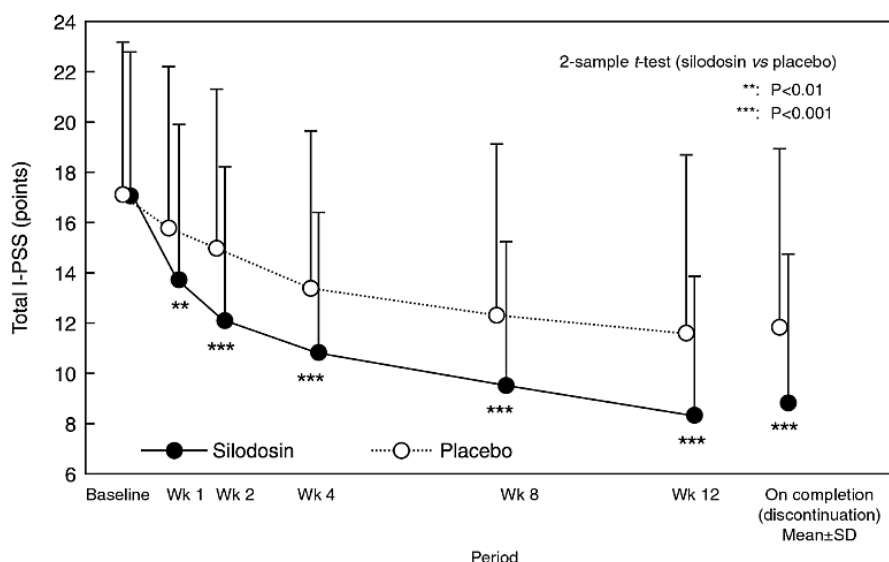


Figure 1 Time course of change in total I-PSS

Table 4 Change of total I-PSS compared to baseline and differences between groups

Group	n	Score at baseline ^{a)}	Score on completion of treatment ^{a)}	Change compared to baseline ^{a)}	Group difference in change	2-sided 95% Confidence interval
Silodosin	174	17.1±5.7	8.8±5.9	-8.3±6.4	-3.0	-4.6, -1.3
Placebo	89	17.1±6.1	11.8±7.1	-5.3±6.7		

a) Mean ±SD

(3) Long-term Administration Study

In a long-term administration study, silodosin capsule was administered at a dose of 4 mg twice daily for 52 weeks to 364 patients with lower urinary tract symptoms associated with benign prostatic hypertrophy. A continuous improvement effect and drug safety were reported and stable subjective symptoms (total I-PSS) and improvement in maximum urine flow rate were observed. Incidence rate of ADRs showed 65.4% (238/364 cases). The most common ADRs included abnormal ejaculation 25.0 % (91/364 cases), diarrhea 7.4 % (27/364 cases), thirst 7.1 % (26/364 cases), dizziness on standing up 6.6 % (24/364 cases), nasal congestion 5.8 % (21/364 cases) and light-headed feeling 5.2 % (19/364 cases). Incidence rate of laboratory data showed 31.1 % (112/360 cases). The most common ADRs included triglyceride increased 9.2 % (33/359 cases), ALT increased 4.2 % (15/360 cases), WBC decreased 3.9 % (14/358 cases), hemoglobin decreased 3.6 % (13/357 cases), hematocrit decreased 3.6 % (13/357 cases), AST increased 3.6 % (13/360 cases), RBC decreased 3.4 % (12/358 cases) and CRP increased 3.1 % (11/359 cases).

5.2 Pharmacokinetic properties

1. Absorption and Plasma concentrations

When a single 4 mg dose of silodosin (tablet or capsule) was administered orally to 13 and 14 healthy adult males, respectively, plasma concentration and pharmacokinetics parameters of silodosin (tablets or capsule) are shown in Table 5 and Figure 2.

It was demonstrated that the silodosin tablet of 4 mg and capsule of 4 mg are biologically equivalent.

Table 5 Pharmacokinetic parameters following postprandial administration of 4 mg dose (tablet or capsule) in healthy adult male volunteers (mean $\pm$ SD)

	$C_{\max}$ (ng/mL)	$AUC_{0-48\text{hr}}^{\text{a)}}$ (ng·hr/mL)	$T_{\max}$ (hr)	$t_{1/2}$ (hr)
No. of subject	27	27	27	27
4 mg tablet	29.3 $\pm$ 13.9	122.9 $\pm$ 39.3	0.9 $\pm$ 0.7	5.8 $\pm$ 3.4
4 mg capsule	28.9 $\pm$ 14.7	125.4 $\pm$ 40.1	1.3 $\pm$ 0.9	5.9 $\pm$ 4.0

a): In the case of $AUC_{0-48\text{ hr}}$, $AUC_{0-10\text{ hr}}$ was tabulated as $AUC_{0-48\text{ hr}}$ for 1 subject out of 27 subjects.

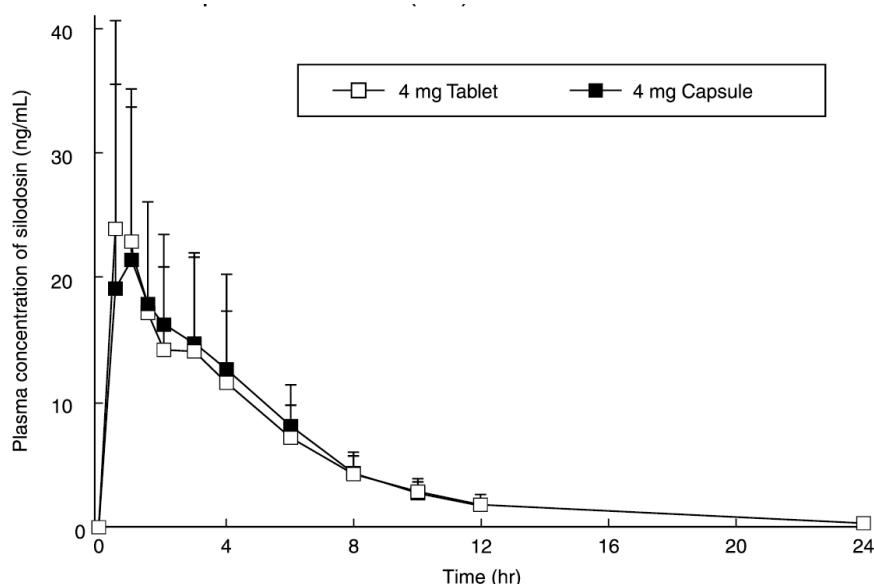


Figure 2 Time course of changes in plasma concentrations of silodosin following a single administration at a dose of 4 mg tablet in healthy adult male volunteers under fasting conditions

Data are expressed as mean $\pm$ SD (n=27)

When a single oral dose of silodosin capsule administered to healthy adult male volunteers (6 subjects/group) at doses ranging from 0.5 to 12 mg, plasma concentrations of silodosin increased dose-dependently, and $C_{\max}$ and, $AUC_{0-\infty}$, showed linearity. The time course of changes in plasma concentrations of silodosin following a single oral administration of silodosin capsule at a dose of 2 or 4 mg is shown in Figure 3

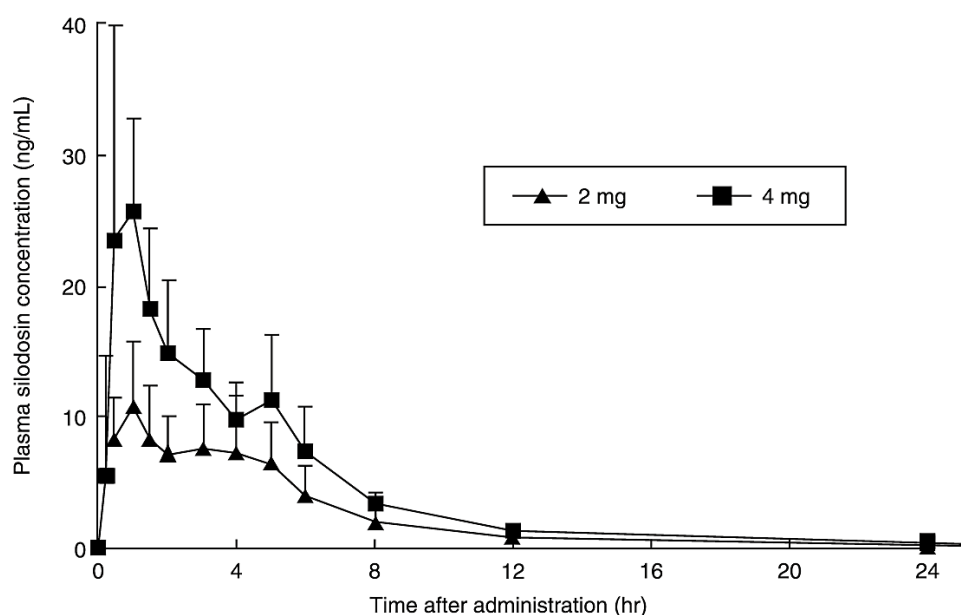


Figure 3 Time course of changes in plasma concentrations of silodosin following a single administration at a dose of 2 or 4 mg in healthy male volunteers under fasting conditions

Data are expressed as mean $\pm$ SD (n=6)

When silodosin capsule was administered orally twice daily for 7 days (once daily on days 1 and 7) at a dose of 4 mg/dose in 5 healthy adult male volunteers, plasma concentrations of silodosin reached a steady state on day 3. The accumulation factor relative to the first dose was 1.1-fold (Table 6)

Table 6 Pharmacokinetic parameters following postprandial administration of 4 mg dose in healthy adult male volunteers (mean $\pm$ SD)

	C _{max} (ng/mL)	AUC _{0-∞} (ng·hr/mL)	T _{max} (hr)	t _{1/2} (hr)
Single dose	26.8 $\pm$ 9.2	143.9 $\pm$ 57.1	2.2 $\pm$ 0.5	6.9 $\pm$ 3.1
Repeated dose	28.7 $\pm$ 7.6	134.3 $\pm$ 39.0	2.0 $\pm$ 0.0	10.4 $\pm$ 4.6

Pharmacokinetic parameters following repeated administration are shown as the results obtained from the time course of changes in concentration on day 7 less the cumulative concentration from days 0-6.

When a single 4 mg dose of silodosin capsule was administered orally to 12 elderly males (age range: 65 to 75 years) postprandially, no obvious differences in the pharmacokinetic profile were observed compared to that in 9 non-elderly (age range: 21 to 31 years) males. The pharmacokinetic parameters in elderly males who received treatment with silodosin capsule are shown in Table 7.

Table 7 Pharmacokinetic parameters following administration of a single postprandial 4 mg dose in elderly and non-elderly males (mean $\pm$ SD)

	C _{max} (ng/mL)	AUC _{0-∞} (ng·hr/mL)	T _{max} (hr)	t _{1/2} (hr)
Elderly male	21.8 $\pm$ 11.6	142.4 $\pm$ 54.7	2.5 $\pm$ 1.4	10.5 $\pm$ 4.0
Non-elderly male	20.5 $\pm$ 6.5	121.5 $\pm$ 38.1	2.3 $\pm$ 0.5	8.7 $\pm$ 3.1

When a single 4 mg dose of silodosin capsule was administered orally to 11 healthy adult male volunteers 30 min postprandially or under fasting conditions, the C_{max}, AUC_{0-48hr}, T_{max}, and t_{1/2} following postprandial administration (or under fasting conditions) were 23.0 (28.0) ng/mL, 128.8 (135.9) ng·hr/mL, 2.1 (1.4) hr, and 6.0 (4.7) hr, respectively (Table 8)

Table 8 Pharmacokinetic parameters following administration of a 4-mg dose in healthy adult male volunteers (mean $\pm$ SD)

	C _{max} (ng/mL)	AUC _{0-∞} (ng·hr/mL)	T _{max} (hr)	t _{1/2} (hr)
Postprandial	23.0 $\pm$ 10.8	128.8 $\pm$ 64.1	2.1 $\pm$ 0.7	6.0 $\pm$ 4.8
Fasting	28.0 $\pm$ 9.6	135.9 $\pm$ 55.4	1.4 $\pm$ 1.1	4.7 $\pm$ 3.7

2. Distribution

The clearance and distribution volume following administration of silodosin solution (2 mg) to 11 healthy adult male volunteers by intravenous infusion over 4 hr were 167.0 $\pm$ 33.8 ml/min and 49.5 $\pm$ 17.3 L, respectively. The bioavailability following a single oral administration of Silodosin capsule at a dose of 4 mg was 32.2%.

3. Protein Binding

In an *in vitro* study, the human plasma-protein binding rate of silodosin was 95.6% (at a concentration of 100 ng/mL) and the main binding protein was α_1 -acid glycoprotein.

4. Metabolism and Excretion

Silodosin was metabolised mainly by CYP3A4, UGTs, ADH, and ALDH, with the major metabolites in plasma being a glucuronide and an oxidized metabolite of silodosin. When a single 8 mg dose of ^{14}C -labeled silodosin solution was administered orally to 6 healthy male non-Japanese volunteers, the $\text{AUC}_{0-12\text{hr}}$ of silodosin and its glucuronide and oxidized metabolites relative to the $\text{AUC}_{0-12\text{hr}}$ of total radioactivity in plasma was 24.0, 21.9, and 34.9%, respectively. Other metabolites accounted for no more than 5%. In the 240-hour period after dosing, 33.5 and 54.9% of administered radioactivity was excreted in urine and feces, respectively.

The cumulative excretion in urine 0-48 hr after a single 4 mg dose of silodosin capsule was administered orally to 12 elderly and 9 non-elderly male volunteers was 2.3 and 2.4% for silodosin, 1.6 and 1.8% for its glucuronide metabolite, and 4.5 and 4.9% for its oxidised metabolite, respectively.

5. Pharmacokinetics in Patients with Lower Urinary Tract Symptoms Associated with Benign Prostatic Hyperplasia

In an exploratory population pharmacokinetic analyses (n=258) of a long-term administration study with silodosin capsule in patients with lower urinary tract symptoms associated with benign prostatic hyperplasia, the estimated plasma concentrations of silodosin (mean $\pm$ SD) at steady state 2 and 12 hours post-dose were 24.8 $\pm$ 8.0 and 7.4 $\pm$ 3.3 ng/mL, respectively.

An analysis of variable factors in relation to plasma concentrations of silodosin suggested that silodosin clearance is affected by body weight, age, CRP, ALT (GPT), and serum creatinine and distribution volume by body weight, age, CRP, and ALT (GPT). Of these factors, it was concluded that ALT (GPT) had the most effect on plasma concentrations of silodosin and it was suggested that, as a result of increased levels of ALT (GPT) (23 $\rightarrow$ 83 IU/L), silodosin clearance and distribution volume may decrease by approximately 47 and 27%, respectively.

6. Pharmacokinetics in Patients with Impaired Renal Function

When a single 4 mg dose of silodosin capsule was administered orally to 6 patients with impaired renal function (creatinine clearance: 27-49 mL/min) and 7 volunteers with normal renal function (creatinine clearance: 125-176 mL/min), the total plasma concentration of silodosin was increased (C_{max} : 3.1-fold higher; $\text{AUC}_{0-\infty}$: 3.2-fold higher) in patients with impaired renal function compared to that in the volunteer group. This increase in total plasma concentration of silodosin may be attributable to protein binding with serum α_1 -acid glycoprotein, with a high correlation between total plasma concentration of silodosin and serum concentration of α_1 -acid glycoprotein observed. It should be noted that the increase in the plasma concentration of unbound silodosin (C_{max} : 1.5-fold higher; $\text{AUC}_{0-\infty}$: 2.0-fold higher), which is considered to have a direct bearing on the manifestation of drug effect and incidence of adverse reactions associated with silodosin, was less than that for the total drug concentration (Table 9)

Table 9 Pharmacokinetic parameters following administration of a single 4 mg dose in patients with impaired renal function and volunteers with normal renal function under fasting conditions (mean $\pm$ SD)

	C_{max} (ng/mL)	$\text{AUC}_{0-\infty}$ (ng·hr/mL)	T_{max} (hr)	$t_{1/2}$ (hr)
Impaired renal function	72.22 $\pm$ 44.12 (1.48 $\pm$ 1.30)	305.76 $\pm$ 115.38 (6.34 $\pm$ 3.43)	0.67 $\pm$ 0.26 (0.83 $\pm$ 0.26)	7.55 $\pm$ 1.50 (8.71 $\pm$ 3.94)
Normal renal function	21.51 $\pm$ 8.52 (0.71 $\pm$ 0.13)	94.75 $\pm$ 41.28 (2.96 $\pm$ 1.09)	0.86 $\pm$ 0.56 (0.86 $\pm$ 0.56)	3.94 $\pm$ 1.57 (4.39 $\pm$ 1.34)

Values in () indicate plasma concentration of unbound silodosin.

6. Pharmaceutical particulars

6.1 List of excipients

Mannitol, Corn starch, Low-substituted hydroxypropyl cellulose, Hydroxypropyl cellulose type L, Talcum, Magnesium stearate, Hydrogenated vegetable oil type I, Hypromellose, Polyethylene glycol 6000, Opadry white and Ethanol

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

Please refer to the expiry date on the blister strip or outer carton.

6.4 Special precautions for storage

Store below 30°C and protect from light.

6.5 Nature and contents of container

Available in pack size of 3 x 10 tablets.

UROTEx (10 film-coated tablets) are packed in aluminium-aluminium blister. The three blisters with a package leaflet are packed in a cardboard box

Manufactured by

SRIPRASIT PHARMA CO., LTD.

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Samut Sakhon 74110, Thailand

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