

ANNEX I
SUMMARY OF PRODUCT CHARACTERISTICS

▼ This medicinal product is subject to additional monitoring. This will allow quick identification of new safety information. Healthcare professionals are asked to report any suspected adverse reactions. See section 4.8 for how to report adverse reactions.

1. NAME OF THE MEDICINAL PRODUCT

Steglujan 5 mg/100 mg film-coated tablets
Steglujan 15 mg/100 mg film-coated tablets

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Steglujan 5 mg/100 mg film-coated tablets

Each tablet contains 5 mg ertugliflozin (as ertugliflozin L-pyroglutamic acid) and 100 mg sitagliptin (as sitagliptin phosphate monohydrate).

Steglujan 15 mg/100 mg film-coated tablets

Each tablet contains 15 mg ertugliflozin (as ertugliflozin L-pyroglutamic acid) and 100 mg sitagliptin (as sitagliptin phosphate monohydrate).

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Film-coated tablet (tablet).

Steglujan 5 mg/100 mg film-coated tablets

Beige, 12.0 x 7.4 mm, almond-shaped, film-coated tablets debossed with “554” on one side and plain on the other side.

Steglujan 15 mg/100 mg film-coated tablets

Brown, 12.0 x 7.4 mm, almond-shaped, film-coated tablets debossed with “555” on one side and plain on the other side.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

Steglujan is indicated in adults aged 18 years and older with type 2 diabetes mellitus as an adjunct to diet and exercise to improve glycaemic control:

- when metformin and/or a sulphonylurea (SU) and one of the monocomponents of Steglujan do not provide adequate glycaemic control.
- in patients already being treated with the combination of ertugliflozin and sitagliptin as separate tablets.

(For study results with respect to combinations and effects on glycaemic control, see sections 4.4, 4.5, and 5.1)

4.2 Posology and method of administration

Posology

The recommended starting dose is 5 mg ertugliflozin/100 mg sitagliptin once daily. In patients tolerating the starting dose, the dose may be increased to 15 mg ertugliflozin/100 mg sitagliptin, once daily, if additional glycaemic control is needed.

For patients treated with ertugliflozin who are being switched to Steglujan, the dose of ertugliflozin can be maintained.

When Steglujan is used in combination with insulin or an insulin secretagogue, a lower dose of insulin or the insulin secretagogue may be required to reduce the risk of hypoglycaemia (see sections 4.4, 4.5, and 4.8).

In patients with volume depletion, correcting this condition prior to initiation of Steglujan is recommended (see section 4.4).

If a dose is missed, it should be taken as soon as the patient remembers. Patients should not take two doses of Steglujan on the same day.

Special populations

Renal impairment

Assessment of renal function is recommended prior to initiation of Steglujan and periodically thereafter (see section 4.4).

Initiation of this medicinal product is not recommended in patients with an estimated glomerular filtration rate (eGFR) less than 60 ml/min/1.73 m² or CrCl less than 60 ml/min (see section 4.4).

Steglujan should be discontinued when eGFR is persistently less than 45 ml/min/1.73 m² or CrCl is persistently less than 45 ml/min.

The fixed-dose combination of ertugliflozin and sitagliptin should not be used in patients with severe renal impairment, with end-stage renal disease (ESRD), or receiving dialysis. Ertugliflozin is not expected to be effective in these patients.

Hepatic impairment

No dose adjustment of Steglujan is necessary in patients with mild or moderate hepatic impairment. Steglujan has not been studied in patients with severe hepatic impairment and is not recommended for use in these patients (see section 5.2).

Elderly (≥ 65 years old)

No dose adjustment of Steglujan is recommended based on age. Elderly patients are more likely to have decreased renal function. Because renal function abnormalities can occur after initiating ertugliflozin, and sitagliptin is known to be substantially excreted by the kidneys, renal function should be assessed more frequently in elderly patients. Renal function and risk of volume depletion should be taken into account (see sections 4.4 and 4.8). There is limited experience with Steglujan in patients ≥ 75 years of age.

Paediatric population

The safety and efficacy of Steglujan in children under 18 years of age have not been established. No data are available.

Method of administration

Steglujan should be taken orally once daily in the morning, with or without food. In case of swallowing difficulties, the tablet could be broken or crushed as it is an immediate-release dosage form.

4.3 Contraindications

Hypersensitivity to the active substances or to any of the excipients listed in section 6.1.

4.4 Special warnings and precautions for use

General

Steglujan should not be used in patients with type 1 diabetes mellitus.

Acute pancreatitis

Use of dipeptidyl peptidase-4 (DPP-4) inhibitors has been associated with a risk of developing acute pancreatitis. Patients should be informed of the characteristic symptom of acute pancreatitis: persistent, severe abdominal pain. Resolution of pancreatitis has been observed after discontinuation of sitagliptin (with or without supportive treatment), but very rare cases of necrotising or haemorrhagic pancreatitis and/or death have been reported. If pancreatitis is suspected, Steglujan and other potentially suspect medicinal products should be discontinued; if acute pancreatitis is confirmed, Steglujan should not be restarted. Caution should be exercised in patients with a history of pancreatitis.

Hypotension/Volume depletion

Ertugliflozin causes an osmotic diuresis, which may lead to intravascular volume contraction. Therefore, symptomatic hypotension may occur after initiating Steglujan (see section 4.8), particularly in patients with impaired renal function (eGFR less than 60 ml/min/1.73 m² or CrCl less than 60 ml/min), elderly patients (≥ 65 years), patients on diuretics, or patients on anti-hypertensive therapy with a history of hypotension. Before initiating Steglujan, volume status should be assessed and corrected if indicated. Monitor for signs and symptoms after initiating therapy.

Due to its mechanism of action, ertugliflozin induces an osmotic diuresis and increases serum creatinine and decreases eGFR. Increases in serum creatinine and decreases in eGFR were greater in patients with moderate renal impairment (see section 4.8).

In case of conditions that may lead to fluid loss (e.g., gastrointestinal illness), careful monitoring of volume status (e.g., physical examination, blood pressure measurements, laboratory tests including haematocrit) and electrolytes is recommended for patients receiving Steglujan. Temporary interruption of treatment with Steglujan should be considered until the fluid loss is corrected.

Diabetic ketoacidosis

Rare cases of DKA, including life-threatening and fatal cases, have been reported in clinical trials and post-marketing in patients treated with sodium glucose co-transporter-2 (SGLT2) inhibitors, and cases have been reported in clinical trials with ertugliflozin. In a number of cases, the presentation of the condition was atypical with only moderately increased blood glucose values, below 14 mmol/l (250 mg/dl). It is not known if DKA is more likely to occur with higher doses of ertugliflozin.

The risk of diabetic ketoacidosis must be considered in the event of non-specific symptoms such as nausea, vomiting, anorexia, abdominal pain, excessive thirst, difficulty breathing, confusion, unusual fatigue or sleepiness. Patients should be assessed for ketoacidosis immediately if these symptoms occur, regardless of blood glucose level.

In patients where DKA is suspected or diagnosed, treatment with Steglujan should be discontinued immediately.

Treatment should be interrupted in patients who are hospitalised for major surgical procedures or acute serious medical illnesses. In both cases, treatment with Steglujan may be restarted once the patient's condition has stabilised.

Before initiating Steglujan, factors in the patient history that may predispose to ketoacidosis should be considered.

Patients who may be at higher risk of DKA include patients with a low beta-cell function reserve (e.g., type 2 diabetes patients with low C-peptide or latent autoimmune diabetes in adults (LADA) or patients with a history of pancreatitis), patients with conditions that lead to restricted food intake or

severe dehydration, patients for whom insulin doses are reduced and patients with increased insulin requirements due to acute medical illness, surgery, or alcohol abuse. SGLT2 inhibitors should be used with caution in these patients.

Restarting SGLT2 inhibitor treatment in patients with previous DKA while on SGLT2 inhibitor treatment is not recommended, unless another clear precipitating factor is identified and resolved.

The safety and efficacy of Steglujan in patients with type 1 diabetes have not been established and Steglujan should not be used for treatment of patients with type 1 diabetes. Limited data from clinical trials suggest that DKA occurs with common frequency when patients with type 1 diabetes are treated with SGLT2 inhibitors.

Lower limb amputations

In an ongoing clinical study of ertugliflozin added to existing therapy in type 2 diabetes patients with a history of established cardiovascular disease, an approximately 1.2-1.6-fold increase in cases of lower limb amputation (primarily of the toe) has been observed in patients treated with ertugliflozin. An increase in cases of lower limb amputation (primarily of the toe) has also been observed in long-term clinical studies with another SGLT2 inhibitor. As an underlying mechanism has not been established, risk factors, apart from general risk factors, for amputation are unknown.

Before initiating ertugliflozin/sitagliptin, consider factors in the patient history that may increase the risk for amputation. As precautionary measures, consideration should be given to carefully monitoring patients with a higher risk for amputation events and counselling patients about the importance of routine preventative foot care and maintaining adequate hydration. Consideration may also be given to stopping treatment with ertugliflozin/sitagliptin in patients who develop events which may precede amputation such as lower-extremity skin ulcer, infection, osteomyelitis or gangrene.

Impairment in renal function

The efficacy of ertugliflozin is dependent on renal function, and efficacy is reduced in patients who have moderate renal impairment and likely absent in patients with severe renal impairment (see section 4.2).

Steglujan should not be initiated in patients with an eGFR below 60 ml/min/1.73 m² or CrCl below 60 ml/min. Steglujan should be discontinued when eGFR is persistently below 45 ml/min/1.73 m² or CrCl is persistently below 45 ml/min due to a reduction of efficacy.

Monitoring of renal function is recommended as follows:

- Prior to Steglujan initiation and periodically during treatment (see section 4.2).
- More frequently in patients with an eGFR below 60 ml/min/1.73 m² or a CrCl below 60 ml/min.

Hypoglycaemia with concomitant use with insulin and insulin secretagogues

Ertugliflozin may increase the risk of hypoglycaemia when used in combination with insulin and/or an insulin secretagogue, which are known to cause hypoglycaemia (see section 4.8). Hypoglycaemia has been observed when sitagliptin was used in combination with insulin or a sulphonylurea. Therefore, a lower dose of insulin or insulin secretagogue may be required to minimise the risk of hypoglycaemia when used in combination with Steglujan (see sections 4.2 and 4.5).

Genital mycotic infections

Ertugliflozin increases the risk of genital mycotic infections. In trials with SGLT2 inhibitors, patients with a history of genital mycotic infections and uncircumcised males were more likely to develop genital mycotic infections (see section 4.8). Patients should be monitored and treated appropriately.

Urinary tract infections

Urinary glucose excretion may be associated with an increased risk of urinary tract infections.

The incidence of urinary tract infections was not notably different in the ertugliflozin 5 mg and 15 mg groups (4.0% and 4.1%) and the placebo group (3.9%). Most of the events were mild or moderate and

no serious case was reported. Temporary interruption of ertugliflozin should be considered when treating pyelonephritis or urosepsis.

Hypersensitivity reactions

Post-marketing reports of serious hypersensitivity reactions in patients treated with sitagliptin have been reported (see section 4.8). These reactions include anaphylaxis, angioedema, and exfoliative skin conditions including Stevens-Johnson syndrome. Onset of these reactions occurred within the first 3 months after initiation of treatment, with some reports occurring after the first dose. If a hypersensitivity reaction is suspected, Steglujan should be discontinued. Other potential causes for the event should be assessed, and alternative treatment for diabetes initiated.

Bullous pemphigoid

There have been post-marketing reports of bullous pemphigoid in patients taking DPP-4 inhibitors including sitagliptin. If bullous pemphigoid is suspected, Steglujan should be discontinued.

Elderly patients

Elderly patients may be at an increased risk of volume depletion. Patients 65 years and older treated with ertugliflozin, had a higher incidence of adverse reactions related to volume depletion compared to younger patients. Steglujan is expected to have diminished efficacy in elderly patients with renal impairment (see sections 4.2 and 4.8).

Cardiac failure

Experience in New York Heart Association (NYHA) class I-II is limited, and there is no experience in clinical studies with Steglujan in NYHA class III-IV.

Urine laboratory assessments

Due to the mechanism of action of ertugliflozin, patients taking Steglujan will test positive for glucose in their urine. Alternative methods should be used to monitor glycaemic control.

Interference with 1,5-anhydroglucitol (1,5-AG) assay

Monitoring glycaemic control with 1,5-AG assay is not recommended as measurements of 1,5-AG are unreliable in assessing glycaemic control in patients taking SGLT2 inhibitors. Alternative methods should be used to monitor glycaemic control.

4.5 Interaction with other medicinal products and other forms of interaction

Pharmacokinetic drug interaction studies with Steglujan have not been performed; however, such studies have been conducted with ertugliflozin and sitagliptin, the individual active substances of Steglujan.

Ertugliflozin

Pharmacodynamic interactions

Diuretics

Ertugliflozin may add to the diuretic effect of diuretics and may increase the risk of dehydration and hypotension (see section 4.4).

Insulin and insulin secretagogues

Insulin and insulin secretagogues, such as sulphonylureas, cause hypoglycaemia. Ertugliflozin may increase the risk of hypoglycaemia when used in combination with insulin and/or an insulin secretagogue. Therefore, a lower dose of insulin or an insulin secretagogue may be required to reduce the risk of hypoglycaemia when used in combination with Steglujan (see sections 4.2, 4.4, and 4.8).

Pharmacokinetic interactions

Effects of other medicinal products on the pharmacokinetics of ertugliflozin

Metabolism by UGT1A9 and UGT2B7 is the primary clearance mechanism for ertugliflozin.

Interaction studies conducted in healthy subjects, using a single dose design, suggest that the pharmacokinetics of ertugliflozin are not altered by sitagliptin, metformin, glimepiride, or simvastatin.

Multiple-dose administration of rifampin (a UGT and CYP inducer) decreases ertugliflozin AUC and C_{max} by 39% and 15%, respectively. This decrease in exposure is not considered clinically relevant and therefore, no dose adjustment is recommended. A clinically relevant effect with other inducers (e.g., carbamazepine, phenytoin, phenobarbital) is not expected.

The impact of UGT inhibitors on the pharmacokinetics of ertugliflozin has not been studied clinically, but potential increase in ertugliflozin exposure due to UGT inhibition is not considered to be clinically relevant.

Effects of ertugliflozin on the pharmacokinetics of other medicinal products

Interaction studies conducted in healthy volunteers suggest that ertugliflozin had no clinically relevant effect on the pharmacokinetics of sitagliptin, metformin, and glimepiride.

Coadministration of simvastatin with ertugliflozin resulted in a 24% and 19% increase in AUC and C_{max} of simvastatin, respectively, and 30% and 16% increase in AUC and C_{max} of simvastatin acid, respectively. The mechanism for the small increases in simvastatin and simvastatin acid is unknown and is not perpetrated through OATP inhibition by ertugliflozin. These increases are not considered to be clinically meaningful.

Sitagliptin

Pharmacokinetic interactions

Effects of other medicinal products on sitagliptin

Sitagliptin is primarily eliminated unchanged in urine, and metabolism is a minor pathway. *In vitro* studies indicate that the primary enzyme responsible for the limited metabolism of sitagliptin is CYP3A4, with contribution from CYP2C8.

Metabolism may play a more significant role in the elimination of sitagliptin in the setting of severe renal impairment or end-stage renal disease (ESRD). For this reason, it is possible that potent CYP3A4 inhibitors (i.e., ketoconazole, itraconazole, ritonavir, clarithromycin) could alter the pharmacokinetics of sitagliptin in patients with severe renal impairment or ESRD.

Interaction studies conducted in patients with type 2 diabetes or healthy volunteers suggest that metformin and ciclosporin had no clinically relevant effect on the pharmacokinetics of sitagliptin.

Effects of sitagliptin on other medicinal products

In drug interaction studies, sitagliptin did not have clinically meaningful effects on the pharmacokinetics of the following: metformin, rosiglitazone, glyburide, simvastatin, warfarin, and oral contraceptives.

Digoxin: Sitagliptin had a small effect on plasma digoxin concentrations. Following administration of 0.25 mg digoxin concomitantly with 100 mg of sitagliptin daily for 10 days, the plasma AUC of digoxin was increased on average by 11% and the plasma C_{max} on average by 18%. No dose adjustment of digoxin is recommended. However, patients at risk of digoxin toxicity should be monitored for this when sitagliptin and digoxin are administered concomitantly.

4.6 Fertility, pregnancy and lactation

Pregnancy

There are no data from the use of Steglujan in pregnant women. There are limited data from the use of ertugliflozin in pregnant women. Based on results from animal studies, ertugliflozin may affect renal development and maturation (see section 5.3). Therefore, Steglujan should not be used during pregnancy.

Breast-feeding

There is no information regarding the presence of Steglujan or its individual components in human milk, the effects on the breast-fed infant, or the effects on milk production. No studies in lactating animals have been conducted with the combined components of Steglujan. Ertugliflozin and sitagliptin are present in the milk of lactating rats. Ertugliflozin caused effects in the offspring of lactating rats.

Pharmacologically mediated effects were observed in juvenile rats treated with ertugliflozin (see section 5.3). Since human kidney maturation occurs *in utero* and during the first 2 years of life when exposure from breast-feeding may occur, a risk to newborns/infants cannot be excluded. Steglujan should not be used during breast-feeding.

Fertility

The effect of Steglujan on fertility in humans has not been studied. No effects of ertugliflozin or sitagliptin on fertility were observed in animal studies (see section 5.3).

4.7 Effects on ability to drive and use machines

Steglujan has no or negligible influence on the ability to drive and use machines. However, when driving or using machines, it should be taken into account that dizziness and somnolence have been reported with sitagliptin. In addition, patients should be alerted to the risk of hypoglycaemia when Steglujan is used in combination with insulin or an insulin secretagogue and to the elevated risk of adverse reactions related to volume depletion, such as postural dizziness (see sections 4.2, 4.4, and 4.8).

4.8 Undesirable effects

Summary of the safety profile

Ertugliflozin and Sitagliptin

The safety of concomitantly administered ertugliflozin and sitagliptin has been evaluated in 990 patients with type 2 diabetes mellitus treated for 26 weeks in three studies; a factorial study of ertugliflozin 5 mg or 15 mg in combination with sitagliptin 100 mg once daily compared to the individual components, a placebo-controlled study of ertugliflozin 5 mg or 15 mg as add-on therapy to sitagliptin 100 mg and metformin once daily, and a placebo-controlled study of initial therapy with ertugliflozin 5 mg or 15 mg once daily in combination with sitagliptin 100 mg once daily (see section 5.1). The incidence and type of adverse reactions in these three studies were similar to the adverse reactions seen with ertugliflozin and are described below in Table 1. There were no additional adverse reactions identified in these three trials that included sitagliptin relative to the three placebo-controlled studies with ertugliflozin (see below).

Ertugliflozin

Pool of placebo-controlled trials

The primary assessment of safety was conducted in a pool of three 26-week, placebo-controlled trials. Ertugliflozin was used as monotherapy in one trial and as add-on therapy in two trials (see section 5.1). These data reflect exposure of 1,029 patients to ertugliflozin with a mean exposure duration of approximately 25 weeks. Patients received ertugliflozin 5 mg (N=519), ertugliflozin 15 mg (N=510), or placebo (N=515) once daily.

The most commonly reported adverse reactions across the clinical program were vulvovaginal mycotic infection and other female genital mycotic infections. Serious diabetic ketoacidosis occurred rarely. See “Description of selected adverse reactions” for frequencies and see section 4.4.

Sitagliptin

Serious adverse reactions including pancreatitis and hypersensitivity reactions have been reported. Hypoglycaemia has been reported in combination with sulphonylurea (4.7%-13.8%) and insulin (9.6%) (see section 4.4).

Tabulated list of adverse reactions

Adverse reactions listed below are classified according to frequency and system organ class (SOC). Frequency categories are defined according to 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).

Table 1: Adverse reactions

System Organ Class Frequency	Adverse Reaction
Infections and infestations	
Very common	Vulvovaginal mycotic infection and other female genital mycotic infections ^{*,†,1}
Common	Balanitis candida and other male genital mycotic infections ^{*,†,1}
Blood and lymphatic system disorders	
Rare	Thrombocytopenia ²
Immune system disorders	
Not known	Hypersensitivity reactions including anaphylactic responses ^{*,a,2}
Metabolism and nutrition disorders	
Common	Hypoglycaemia ^{*,†,1,2}
Rare	Diabetic ketoacidosis ^{*,†,1}
Nervous system disorders	
Common Uncommon	Headache ² Dizziness ²
Respiratory, thoracic and mediastinal disorders	
Not known	Interstitial lung disease ^{a,2}
Gastrointestinal disorders	
Uncommon Not known Not known Not known	Constipation ² Vomiting ^{a,2} Acute pancreatitis ^{a,*,b,2} Fatal and non-fatal haemorrhagic and necrotizing pancreatitis ^{*,a,2}
Skin and subcutaneous tissue disorders	
Uncommon Not known Not known Not known Not known Not known Not known	Pruritus ^{a,2} Angioedema ^{a,*,2} Rash ^{a,*,2} Urticaria ^{a,*,2} Cutaneous vasculitis ^{a,*,2} Exfoliative skin conditions including Stevens-Johnson syndrome ^{a,*,2}

	Bullous pemphigoid ^{a, *} , ²
Musculoskeletal and connective tissue disorders	
Not known Not known Not known Not known	Arthralgia ^{a,2} Myalgia ^{a,2} Back pain ^{a,2} Arthropathy ^{a,2}
Vascular disorders	
Common	Volume depletion ^{*,†,1}
Renal and urinary disorders	
Common Uncommon Not known Not known	Increased urination ^{‡,1} Dysuria ¹ , Blood creatinine increased/Glomerular filtration rate decreased ^{†,1} Impaired renal function ^{a,2} Acute renal failure ^{a,2}
Reproductive system and breast disorders	
Common	Vulvovaginal pruritus ¹
General disorders and administration site conditions	
Common	Thirst ^{§,1}
Investigations	
Common	Serum lipids changed ^{¶,1} , Haemoglobin increased ^{**1} , BUN increased ^{¶¶1}

¹ Adverse reaction with ertugliflozin.

² Adverse reaction with sitagliptin.

* See Section 4.4.

† See subsections below for additional information.

‡ Includes: pollakiuria, micturition urgency, polyuria, urine output increased, and nocturia.

§ Includes: thirst and polydipsia.

¶ Mean percent changes from baseline for ertugliflozin 5 mg and 15 mg versus placebo, respectively, were LDL-C 5.8% and 8.4% versus 3.2%; total cholesterol 2.8% and 5.7% versus 1.1%; however, HDL-C 6.2% and 7.6% versus 1.9%. Median percent changes from baseline for ertugliflozin 5 mg and 15 mg versus placebo, respectively, were triglycerides -3.9% and -1.7% versus 4.5%.

** The proportion of subjects having at least 1 increase in haemoglobin > 2.0 g/dL was higher in the ertugliflozin 5 mg and 15 mg groups (4.7% and 4.1%, respectively) compared to the placebo group (0.6%).

¶¶ The proportion of subjects having any occurrence of BUN values ≥50% increase and value >ULN was numerically higher in the ertugliflozin 5 mg group and higher in the 15 mg group (7.9% and 9.8%, respectively) relative to the placebo group (5.1%).

^a Adverse reactions were identified through post-marketing surveillance.

^b See *TECOS Cardiovascular Safety Study* below.

Description of selected adverse reactions

Volume depletion (ertugliflozin)

Ertugliflozin causes an osmotic diuresis, which may lead to intravascular volume contraction and adverse reactions related to volume depletion. In the pool of placebo-controlled studies, the incidence of adverse events related to volume depletion (dehydration, dizziness postural, presyncope, syncope, hypotension and orthostatic hypotension) was low (< 2%) and not notably different across the ertugliflozin and placebo groups. In the subgroup analyses in the broader pool of Phase 3 studies, subjects with eGFR < 60 mL/min/1.73 m², subjects ≥ 65 years of age and subjects on diuretics had a higher incidence of volume depletion in the ertugliflozin groups relative to the comparator group (see sections 4.2 and 4.4). In subjects with eGFR < 60 mL/min/1.73 m², the incidence was 5.1%, 2.6% and 0.5% for ertugliflozin 5 mg, ertugliflozin 15 mg and the comparator group and for subjects with eGFR 45 to < 60 mL/min/1.73 m², the incidence was 6.4%, 3.7% and 0% respectively.

Hypoglycaemia (ertugliflozin)

In the pool of placebo-controlled studies, the incidence of documented hypoglycemia was increased for ertugliflozin 5 mg and 15 mg (5.0% and 4.5%) compared to placebo (2.9%). In this population, the

incidence of severe hypoglycaemia was 0.4% in each group. When ertugliflozin was used as monotherapy, the incidence of hypoglycaemic events in the ertugliflozin groups was 2.6% in both groups and 0.7% in the placebo group. When used as add-on to metformin, the incidence of hypoglycaemic events was 7.2% in the ertugliflozin 5 mg group, 7.8% in the ertugliflozin 15 mg group and 4.3% in the placebo group.

When ertugliflozin was added to metformin and compared to sulphonylurea, the incidence of hypoglycaemia was higher for the sulphonylurea (27%) compared to ertugliflozin (5.6% and 8.2% for ertugliflozin 5 mg and 15 mg, respectively).

In patients with moderate renal impairment taking insulins, SU, or meglitinides as background medication, documented hypoglycaemia was 36%, 27% and 36% for ertugliflozin 5 mg, ertugliflozin 15 mg, and placebo, respectively (see sections 4.2, 4.4, and 4.5).

Diabetic Ketoacidosis (ertugliflozin)

Across the clinical program for ertugliflozin, ketoacidosis was identified in 3 of 3,409 (0.1%) ertugliflozin-treated patients and 0.0% of comparator-treated patients (see section 4.4).

Blood creatinine increased/Glomerular filtration rate decreased and renal-related events (ertugliflozin)

Initial increases in mean creatinine and decreases in mean eGFR in patients treated with ertugliflozin were generally transient during continuous treatment. Patients with moderate renal impairment at baseline had larger mean changes that did not return to baseline at Week 26; these changes reversed after treatment discontinuation.

Renal-related adverse reactions (e.g., acute kidney injury, renal impairment, acute prerenal failure) may occur in patients treated with ertugliflozin, particularly in patients with moderate renal impairment where the incidence of renal-related adverse reactions was 2.5%, 1.3%, and 0.6% in patients treated with ertugliflozin 5 mg, ertugliflozin 15 mg, and placebo, respectively.

Genital mycotic infections (ertugliflozin)

In the pool of three placebo-controlled clinical trials, female genital mycotic infections (e.g., genital candidiasis, genital infection fungal, vaginal infection, vulvitis, vulvovaginal candidiasis, vulvovaginal mycotic infection, vulvovaginitis) occurred in 9.1%, 12%, and 3.0% of females treated with ertugliflozin 5 mg, ertugliflozin 15 mg, and placebo, respectively. In females, discontinuation due to genital mycotic infections occurred in 0.6% and 0% of patients treated with ertugliflozin and placebo, respectively (see section 4.4).

In the same pool, male genital mycotic infections (e.g., balanitis candida, balanoposthitis, genital infection, genital infection fungal) occurred in 3.7%, 4.2%, and 0.4% of males treated with ertugliflozin 5 mg, ertugliflozin 15 mg, and placebo, respectively. Male genital mycotic infections occurred more commonly in uncircumcised males. In males, discontinuations due to genital mycotic infections occurred in 0.2% and 0% of patients treated with ertugliflozin and placebo, respectively. In rare instances, phimosis was reported and sometimes circumcision was performed (see section 4.4).

Sitagliptin

In addition to the adverse reactions described in the table above, adverse experiences reported regardless of causal relationship to medication and occurring in at least 5% and more commonly in patients treated with sitagliptin included upper respiratory tract infection and nasopharyngitis. Additional adverse experiences reported regardless of causal relationship to medication that occurred more frequently in patients treated with sitagliptin (not reaching the 5% level, but occurring with an incidence of > 0.5% higher with sitagliptin than that in the control group) included osteoarthritis and pain in extremity.

Some adverse reactions were observed more frequently in studies of combination use of sitagliptin with other anti-diabetic medicinal products than in studies of sitagliptin monotherapy. These included hypoglycaemia (frequency very common with the combination of sulphonylurea and metformin),

influenza (common with insulin (with or without metformin)), nausea and vomiting (common with metformin), flatulence (common with metformin or pioglitazone), constipation (common with the combination of sulphonylurea and metformin), peripheral oedema (common with pioglitazone or the combination of pioglitazone and metformin), somnolence and diarrhoea (uncommon with metformin), and dry mouth (uncommon with insulin (with or without metformin)).

TECOS (trial evaluating cardiovascular outcomes with sitagliptin)

The cardiovascular safety study with sitagliptin (TECOS) included 7,332 patients treated with sitagliptin, 100 mg daily (or 50 mg daily if the baseline eGFR was ≥ 30 and < 50 ml/min/1.73 m²), and 7,339 patients treated with placebo in the intention-to-treat population. Both treatments were added to usual care targeting regional standards for HbA1c and CV risk factors. The overall incidence of serious adverse events in patients receiving sitagliptin was similar to that in patients receiving placebo.

In the intention-to-treat population, among patients who were using insulin and/or a sulphonylurea at baseline, the incidence of severe hypoglycaemia was 2.7% in sitagliptin-treated patients and 2.5% in placebo-treated patients; among patients who were not using insulin and/or a sulphonylurea at baseline, the incidence of severe hypoglycaemia was 1.0% in sitagliptin-treated patients and 0.7% in placebo-treated patients. The incidence of adjudication-confirmed pancreatitis events was 0.3% in sitagliptin-treated patients and 0.2% in placebo-treated patients.

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 reactions via the national reporting system listed in Appendix V.

4.9 Overdose

In the event of an overdose with Steglujan, employ the usual supportive measures (e.g., remove unabsorbed material from the gastrointestinal tract, employ clinical monitoring including obtaining an electrocardiogram, and institute supportive treatment) as dictated by the patient's clinical status.

Ertugliflozin

Ertugliflozin did not show any toxicity in healthy subjects at single oral doses up to 300 mg and multiple doses up to 100 mg daily for 2 weeks. No potential acute symptoms and signs of overdose were identified. Removal of ertugliflozin by haemodialysis has not been studied.

Sitagliptin

During controlled clinical trials in healthy subjects, single doses of up to 800 mg sitagliptin were administered. Minimal increases in QTc, not considered to be clinically relevant, were observed in one study at a dose of 800 mg sitagliptin. There is no experience with doses above 800 mg in clinical studies. In Phase 1 multiple-dose studies, there were no dose-related clinical adverse reactions observed with sitagliptin with doses of up to 600 mg per day for periods of up to 10 days and 400 mg per day for periods of up to 28 days.

Sitagliptin is modestly dialysable. In clinical studies, approximately 13.5% of the dose was removed over a 3- to 4-hour haemodialysis session. Prolonged haemodialysis may be considered if clinically appropriate. It is not known if sitagliptin is dialysable by peritoneal dialysis.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Drugs used in diabetes, combinations of oral blood glucose lowering drugs, ATC code: A10BD24.

Mechanism of action

Steglujan combines two antihyperglycaemic agents with complementary mechanisms of action to improve glycaemic control in patients with type 2 diabetes: ertugliflozin, a SGLT2 inhibitor, and sitagliptin phosphate, a DPP-4 inhibitor.

Ertugliflozin

SGLT2 is the predominant transporter responsible for reabsorption of glucose from the glomerular filtrate back into the circulation. Ertugliflozin is a potent, selective, and reversible inhibitor of SGLT2. By inhibiting SGLT2, ertugliflozin reduces renal reabsorption of filtered glucose and lowers the renal threshold for glucose, and thereby increases urinary glucose excretion.

Sitagliptin

Sitagliptin is a member of a class of oral antihyperglycaemic agents called dipeptidyl peptidase 4 (DPP-4) inhibitors. The improvement in glycaemic control observed with this medicinal product may be mediated by enhancing the levels of active incretin hormones. Incretin hormones, including glucagon-like peptide-1 (GLP-1) and glucose-dependent insulinotropic polypeptide (GIP), are released by the intestine throughout the day, and levels are increased in response to a meal. The incretins are part of an endogenous system involved in the physiologic regulation of glucose homeostasis. When blood glucose concentrations are normal or elevated, GLP-1 and GIP increase insulin synthesis and release from pancreatic beta cells by intracellular signalling pathways involving cyclic AMP. Treatment with GLP-1 or with DPP-4 inhibitors in animal models of type 2 diabetes has been demonstrated to improve beta cell responsiveness to glucose and stimulate insulin biosynthesis and release. With higher insulin levels, tissue glucose uptake is enhanced. In addition, GLP-1 lowers glucagon secretion from pancreatic alpha cells. Decreased glucagon concentrations, along with higher insulin levels, lead to reduced hepatic glucose production, resulting in a decrease in blood glucose levels. The effects of GLP-1 and GIP are glucose-dependent such that when blood glucose concentrations are low, stimulation of insulin release and suppression of glucagon secretion by GLP-1 are not observed. For both GLP-1 and GIP, stimulation of insulin release is enhanced as glucose rises above normal concentrations. Further, GLP-1 does not impair the normal glucagon response to hypoglycaemia. The activity of GLP-1 and GIP is limited by the DPP-4 enzyme, which rapidly hydrolyses the incretin hormones to produce inactive products. Sitagliptin prevents the hydrolysis of incretin hormones by DPP-4, thereby increasing plasma concentrations of the active forms of GLP-1 and GIP. By enhancing active incretin levels, sitagliptin increases insulin release and decreases glucagon levels in a glucose-dependent manner. In patients with type 2 diabetes with hyperglycaemia, these changes in insulin and glucagon levels lead to lower haemoglobin A_{1c} (HbA_{1c}) and lower fasting and post-prandial glucose concentrations. The glucose-dependent mechanism of sitagliptin is distinct from the mechanism of sulphonylureas, which increase insulin secretion even when glucose levels are low and can lead to hypoglycaemia in patients with type 2 diabetes and in normal subjects. Sitagliptin is a potent and highly selective inhibitor of the enzyme DPP-4 and does not inhibit the closely-related enzymes DPP-8 or DPP-9 at therapeutic concentrations.

In a two-day study in healthy subjects, sitagliptin alone increased active GLP-1 concentrations, whereas metformin alone increased active and total GLP-1 concentrations to similar extents. Coadministration of sitagliptin and metformin had an additive effect on active GLP-1 concentrations. Sitagliptin, but not metformin, increased active GIP concentrations.

Pharmacodynamic effects

Ertugliflozin

Urinary glucose excretion and urinary volume

Dose-dependent increases in the amount of glucose excreted in urine were observed in healthy subjects and in patients with type 2 diabetes mellitus following single- and multiple-dose administration of ertugliflozin. Dose-response modelling indicates that ertugliflozin 5 mg and 15 mg result in near maximal urinary glucose excretion (UGE) in patients with type 2 diabetes mellitus, providing 87% and 96% of maximal inhibition, respectively.

Clinical efficacy and safety

Ertugliflozin in combination with sitagliptin

The efficacy and safety of ertugliflozin in combination with sitagliptin have been studied in 3 multi-centre, randomised, double-blind, placebo- and active comparator-controlled, Phase 3 clinical studies involving 1,985 patients with type 2 diabetes. Across the 3 studies, the racial distribution ranged from 72.9% to 90.4% White, 0.0% to 20.3% Asian, 1.9% to 4.5% Black and 4.8% to 5.4% Other. Hispanic or Latino patients comprised 15.6% to 36.1% of the population. The mean age of the patients across these 3 studies ranged from 55.1 to 59.1 years (range 21 years to 85 years). Across the 3 studies, 16.2% to 29.9% of patients were ≥ 65 years of age and 2.3% to 2.8% were ≥ 75 years of age.

Factorial study with ertugliflozin and sitagliptin as add-on combination therapy with metformin

A total of 1,233 patients with type 2 diabetes participated in a randomised, double-blind, multi-centre, 26-week, active-controlled study to evaluate the efficacy and safety of ertugliflozin 5 mg or 15 mg in combination with sitagliptin 100 mg compared to the individual components. Patients with type 2 diabetes inadequately controlled on metformin monotherapy ($\geq 1,500$ mg/day) were randomised to one of five active-treatment arms: ertugliflozin 5 mg or 15 mg, sitagliptin 100 mg, or sitagliptin 100 mg in combination with 5 mg or 15 mg ertugliflozin administered once daily in addition to continuation of background metformin therapy (see Table 2).

Table 2: Results at Week 26 from a factorial study with ertugliflozin and sitagliptin as add-on combination therapy with metformin compared to individual components alone*

	Ertugliflozin 5 mg	Ertugliflozin 15 mg	Sitagliptin 100 mg	Ertugliflozin 5 mg + Sitagliptin 100 mg	Ertugliflozin 15 mg + Sitagliptin 100 mg
HbA1c (%)	N = 250	N = 248	N = 247	N = 243	N = 244
Baseline (mean)	8.6	8.6	8.5	8.6	8.6
Change from baseline (LS mean [†])	-1.0	-1.1	-1.1	-1.5	-1.5
Difference from Sitagliptin				-0.4 [‡] (-0.6, -0.3)	-0.5 [‡] (-0.6, -0.3)
Ertugliflozin 5 mg				-0.5 [‡] (-0.6, -0.3)	
Ertugliflozin 15 mg (LS mean [†] , 95% CI)					-0.4 [‡] (-0.6, -0.3)
Patients [N (%)] with HbA1c < 7%	66 (26.4)	79 (31.9)	81 (32.8)	127 [§] (52.3)	120 [§] (49.2)
Body weight (kg)	N = 250	N = 248	N = 247	N = 243	N = 244
Baseline (mean)	88.6	88.0	89.8	89.5	87.5
Change from baseline (LS mean [†])	-2.7	-3.7	-0.7	-2.5	-2.9
Difference from Sitagliptin (LS mean [†] , 95% CI)				-1.8 [‡] (-2.5, -1.2)	-2.3 [‡] (-2.9, -1.6)

* N includes all randomised, treated patients who had at least one measurement of the outcome variable.

[†] Least squares means adjusted for treatment, time, baseline eGFR and the interaction of time by treatment.

[‡] p < 0.001 compared to control group.

[§] p < 0.001 compared to corresponding dose of ertugliflozin or sitagliptin (based on adjusted odds ratio comparisons from a logistic regression model using multiple imputation for missing data values).

Ertugliflozin as add-on combination therapy with metformin and sitagliptin

A total of 463 patients, with type 2 diabetes inadequately controlled on metformin ($\geq 1,500$ mg/day) and sitagliptin 100 mg once daily participated in a randomised, double-blind, multi-centre, 26-week, placebo-controlled study to evaluate the efficacy and safety of ertugliflozin. Patients were randomised to ertugliflozin 5 mg, ertugliflozin 15 mg, or placebo administered once daily in addition to continuation of background metformin and sitagliptin therapy (see Table 3).

Table 3: Results at Week 26 from an add-on study of ertugliflozin in combination with metformin and sitagliptin*

	Ertugliflozin 5 mg	Ertugliflozin 15 mg	Placebo
HbA1c (%)	N = 156	N = 153	N = 153
Baseline (mean)	8.1	8.0	8.0
Change from baseline (LS mean [†])	-0.8	-0.9	-0.1
Difference from placebo (LS mean [†] , 95% CI)	-0.7 [‡] (-0.9, -0.5)	-0.8 [‡] (-0.9, -0.6)	
Patients [N (%)] with HbA1c <7%	50 (32.1) [‡]	61 (39.9) [‡]	26 (17.0)
Body Weight (kg)	N = 156	N = 153	N = 153
Baseline (mean)	87.6	86.6	86.5
Change from baseline (LS mean [†])	-3.3	-3.0	-1.3
Difference from placebo (LS mean [†] , 95% CI)	-2.0 [‡] (-2.6, -1.4)	-1.7 [‡] (-2.3, -1.1)	

* N includes all randomised, treated patients who had at least one measurement of the outcome variable.

[†] Least squares means adjusted for treatment, time, prior antihyperglycaemic medication.

[‡] p < 0.001 compared to placebo.

Combination therapy of ertugliflozin and sitagliptin

A total of 291 patients with type 2 diabetes inadequately controlled on diet and exercise participated in a randomised, double-blind, multi-centre, placebo-controlled 26-week study to evaluate the efficacy and safety of ertugliflozin in combination with sitagliptin. These patients, who were not receiving any background antihyperglycaemic treatment, were randomised to ertugliflozin 5 mg or ertugliflozin 15 mg in combination with sitagliptin (100 mg) or to placebo, once daily (see Table 4).

Table 4: Results at Week-26 from a combination therapy study of ertugliflozin and sitagliptin*

	Ertugliflozin 5 mg + Sitagliptin	Ertugliflozin 15 mg + Sitagliptin	Placebo
HbA1c (%)	N = 98	N = 96	N = 96
Baseline (mean)	8.9	9.0	9.0
Change from baseline (LS mean [†])	-1.6	-1.7	-0.4
Difference from placebo (LS mean [†] and 95% CI)	-1.2 [‡] (-1.5, -0.8)	-1.2 [‡] (-1.6, -0.9)	
Patients [n (%)] with HbA1c < 7%	35 [§] (35.7)	30 [§] (31.3)	8 (8.3)
Body Weight (kg)	N = 98	N = 96	N = 97
Baseline (mean)	90.8	91.3	95.0
Change from baseline (LS mean [†])	-2.9	-3.0	-0.9
Difference from placebo (LS mean [†] , 95% CI)	-2.0 [‡] (-3.0, -1.0)	-2.1 [‡] (-3.1, -1.1)	

* N includes all patients who received at least one dose of study medication and had at least one measurement of the outcome variable.

[†] Least squares means adjusted based on a longitudinal model including terms for treatment, time, and the interaction of time by treatment.

[‡] p < 0.001 compared to placebo.

[§] p < 0.001 compared to placebo (based on adjusted odds ratio comparisons from a logistic regression model using multiple imputation for missing data values).

Fasting plasma glucose

In three placebo-controlled studies, ertugliflozin resulted in statistically significant reductions in FPG. For ertugliflozin 5 mg and 15 mg, respectively, the placebo-corrected reductions in FPG were 1.92 and 2.44 mmol/l as monotherapy, 1.48 and 2.12 mmol/l as add-on to metformin, and 1.40 and 1.74 mmol/l as add-on to metformin and sitagliptin.

The combination of ertugliflozin and sitagliptin resulted in significantly greater reductions in FPG compared to sitagliptin or ertugliflozin alone or placebo. The combination of ertugliflozin 5 or 15 mg and sitagliptin resulted in incremental FPG reductions of 0.46 to 0.65 mmol/l compared to the ertugliflozin alone or 1.02 to 1.28 mmol/l compared to sitagliptin alone. The placebo-corrected reductions of ertugliflozin 5 or 15 mg in combination with sitagliptin were 2.16 and 2.56 mmol/l.

Efficacy in patients with baseline HbA1c \geq 10%

In the study of patients inadequately controlled on metformin with baseline HbA1c from 7.5-11.0%, among the subgroup of patients with a baseline HbA1c \geq 10%, the combination of ertugliflozin 5 mg or 15 mg with sitagliptin resulted in reductions of HbA1c of 2.35% and 2.66%, respectively, compared to 2.10%, 1.30%, and 1.82% for ertugliflozin 5 mg, ertugliflozin 15 mg, and sitagliptin alone, respectively.

Post-prandial glucose

When used in monotherapy, ertugliflozin 5 and 15 mg resulted in statistically significant placebo-corrected reductions in 2-hour post-prandial glucose (PPG) of 3.83 and 3.74 mmol/l.

The combination of ertugliflozin 5 or 15 mg with sitagliptin resulted in statistically significant placebo-corrected reductions in 2-hour PPG of 3.46 and 3.87 mmol/l.

Blood pressure

After 26-weeks of treatment, the combination of ertugliflozin 5 mg or 15 mg and sitagliptin 100 mg resulted in statistically significant reductions in systolic blood pressure (SBP) compared to sitagliptin alone (-2.8 and -3.0 mmHg for E5/S100 and E15/S100 respectively) or placebo (-4.4 and -6.4 mmHg for E5/S100 and E15/S100, respectively). Additionally, when added on to background metformin and sitagliptin therapy, ertugliflozin 5 mg and 15 mg resulted in statistically significant placebo subtracted reductions in SBP of 2.9 and 3.9 mmHg, respectively.

Subgroup analysis

In patients with type 2 diabetes treated with ertugliflozin in combination with sitagliptin, the improvement in HbA1c was similar across subgroups defined by age, sex, and race, and duration of type 2 diabetes mellitus.

TECOS Cardiovascular Safety Study

The TECOS was a randomised study in 14,671 patients in the intention-to-treat population with an HbA1c of \geq 6.5 to 8.0% with established CV disease who received sitagliptin (7,332) 100 mg daily (or 50 mg daily if the baseline eGFR was \geq 30 and $<$ 50 ml/min/1.73 m²) or placebo (7,339) added to usual care targeting regional standards for HbA1c and CV risk factors. Patients with an eGFR $<$ 30 ml/min/1.73 m² were not to be enrolled in the study. The study population included 2,004 patients \geq 75 years of age and 3,324 patients with renal impairment (eGFR $<$ 60 ml/min/1.73 m²).

Over the course of the study, the overall estimated mean (SD) difference in HbA1c between the sitagliptin and placebo groups was 0.29% (0.01), 95% CI (-0.32, -0.27); $p <$ 0.001. The primary cardiovascular endpoint was a composite of the first occurrence of cardiovascular death, nonfatal myocardial infarction, nonfatal stroke, or hospitalization for unstable angina. Secondary cardiovascular endpoints included the first occurrence of cardiovascular death, nonfatal myocardial infarction, or nonfatal stroke; first occurrence of the individual components of the primary composite; all-cause mortality; and hospital admissions for congestive heart failure.

After a median follow up of 3 years, sitagliptin, when added to usual care, did not increase the risk of major adverse cardiovascular events or the risk of hospitalisation for heart failure compared to usual care without sitagliptin in patients with type 2 diabetes (see Table 5).

Table 5: Rates of composite cardiovascular outcomes and key secondary outcomes

	Sitagliptin 100 mg		Placebo		Hazard Ratio (95% CI)	p-value [†]
	N (%)	Incidence rate per 100 patient-years*	N (%)	Incidence rate per 100 patient-years*		
Analysis in the Intention-to-Treat Population						
Number of patients	7,332		7,339			
Primary Composite Endpoint (Cardiovascular death, nonfatal myocardial infarction, nonfatal stroke, or hospitalisation for unstable angina)	839 (11.4)	4.1	851 (11.6)	4.2	0.98 (0.89–1.08)	<0.001
Secondary Composite Endpoint (Cardiovascular death, nonfatal myocardial infarction, or nonfatal stroke)	745 (10.2)	3.6	746 (10.2)	3.6	0.99 (0.89–1.10)	<0.001
Secondary Outcome						
Cardiovascular death	380 (5.2)	1.7	366 (5.0)	1.7	1.03 (0.89–1.19)	0.711
All myocardial infarction (fatal and nonfatal)	300 (4.1)	1.4	316 (4.3)	1.5	0.95 (0.81–1.11)	0.487
All stroke (fatal and nonfatal)	178 (2.4)	0.8	183 (2.5)	0.9	0.97 (0.79–1.19)	0.760
Hospitalisation for unstable angina	116 (1.6)	0.5	129 (1.8)	0.6	0.90 (0.70–1.16)	0.419
Death from any cause	547 (7.5)	2.5	537 (7.3)	2.5	1.01 (0.90–1.14)	0.875
Hospitalization for heart failure [‡]	228 (3.1)	1.1	229 (3.1)	1.1	1.00 (0.83–1.20)	0.983

*Incidence rate per 100 patient-years is calculated as $100 \times (\text{total number of patients with } \geq 1 \text{ event during eligible exposure period per total patient-years of follow-up})$.

[†]Based on a Cox model stratified by region. For composite endpoints, the p-values correspond to a test of non-inferiority seeking to show that the hazard ratio is less than 1.3. For all other endpoints, the p-values correspond to a test of differences in hazard rates.

[‡]The analysis of hospitalisation for heart failure was adjusted for a history of heart failure at baseline.

Paediatric population

The European Medicines Agency has waived the obligation to submit the results of studies with Steglujan in all subsets of the paediatric population in the treatment of type 2 diabetes (see section 4.2 for information on paediatric use).

5.2 Pharmacokinetic properties

Steglujan

Steglujan has been shown to be bioequivalent to coadministration of corresponding doses of ertugliflozin and sitagliptin tablets.

The effects of a high-fat meal on the pharmacokinetics of ertugliflozin and sitagliptin when administered as Steglujan tablets are comparable to those reported for the individual tablets. Administration of Steglujan with food decreased ertugliflozin C_{\max} by 29% and had no meaningful effect on ertugliflozin AUC_{inf} , or on sitagliptin AUC_{inf} and C_{\max} .

Ertugliflozin

General introduction

The pharmacokinetics of ertugliflozin are similar in healthy subjects and patients with type 2 diabetes. The steady state mean plasma AUC and C_{max} were 398 ng·hr/ml and 81 ng/ml, respectively, with 5 mg ertugliflozin once daily treatment, and 1,193 ng·hr/ml and 268 ng/ml, respectively, with 15 mg ertugliflozin once daily treatment. Steady-state is reached after 4 to 6 days of once-daily dosing with ertugliflozin. Ertugliflozin does not exhibit time-dependent pharmacokinetics and accumulates in plasma up to 10-40% following multiple dosing.

Absorption

Following single-dose oral administration of 5 mg and 15 mg of ertugliflozin, peak plasma concentrations (median T_{max}) of ertugliflozin occur at 1 hour post-dose under fasted conditions. Plasma C_{max} and AUC of ertugliflozin increase in a dose-proportional manner following single doses from 0.5 mg to 300 mg and following multiple doses from 1 mg to 100 mg. The absolute oral bioavailability of ertugliflozin following administration of a 15-mg dose is approximately 100%.

Administration of ertugliflozin with a high-fat and high-calorie meal decreases ertugliflozin C_{max} by 29% and prolongs T_{max} by 1 hour, but does not alter AUC as compared with the fasted state. The observed effect of food on ertugliflozin pharmacokinetics is not considered clinically relevant, and ertugliflozin may be administered with or without food. In Phase 3 clinical trials, ertugliflozin was administered without regard to meals.

Ertugliflozin is a substrate of P-glycoprotein (P-gp) and breast cancer resistance protein (BCRP) transporters.

Distribution

The mean steady-state volume of distribution of ertugliflozin following an intravenous dose is 86 l. Plasma protein binding of ertugliflozin is 93.6% and is independent of ertugliflozin plasma concentrations. Plasma protein binding is not meaningfully altered in patients with renal or hepatic impairment. The blood-to-plasma concentration ratio of ertugliflozin is 0.66.

Ertugliflozin is not a substrate of organic anion transporters (OAT1, OAT3), organic cation transporters (OCT1, OCT2), or organic anion transporting polypeptides (OATP1B1, OATP1B3) *in vitro*.

Biotransformation

Metabolism is the primary clearance mechanism for ertugliflozin. The major metabolic pathway for ertugliflozin is UGT1A9 and UGT2B7-mediated O-glucuronidation to two glucuronides that are pharmacologically inactive at clinically relevant concentrations. CYP-mediated (oxidative) metabolism of ertugliflozin is minimal (12%).

Elimination

The mean systemic plasma clearance following an intravenous 100 µg dose was 11 l/hr. The mean elimination half-life in type 2 diabetic patients with normal renal function was estimated to be 17 hours based on the population pharmacokinetic analysis. Following administration of an oral [¹⁴C]-ertugliflozin solution to healthy subjects, approximately 41% and 50% of the drug-related radioactivity was eliminated in faeces and urine, respectively. Only 1.5% of the administered dose was excreted as unchanged ertugliflozin in urine and 34% as unchanged ertugliflozin in faeces, which is likely due to biliary excretion of glucuronide metabolites and subsequent hydrolysis to parent.

Special populations

Renal impairment

In a Phase 1 clinical pharmacology study in patients with type 2 diabetes and mild, moderate, or severe renal impairment (as determined by eGFR), following a single-dose administration of 15 mg ertugliflozin, the mean increases in AUC of ertugliflozin were ≤ 1.7-fold, compared to subjects with

normal renal function. These increases in ertugliflozin AUC are not considered clinically relevant. There were no clinically meaningful differences in the ertugliflozin C_{max} values among the different renal function groups. The 24-hour urinary glucose excretion declined with increasing severity of renal impairment (see section 4.4). The plasma protein binding of ertugliflozin was unaffected in patients with renal impairment.

Hepatic impairment

Moderate hepatic impairment (based on the Child-Pugh classification) did not result in an increase in exposure of ertugliflozin. The AUC of ertugliflozin decreased by approximately 13%, and C_{max} decreased by approximately 21% compared to subjects with normal hepatic function. This decrease in ertugliflozin exposure is not considered clinically meaningful. There is no clinical experience in patients with Child-Pugh class C (severe) hepatic impairment. The plasma protein binding of ertugliflozin was unaffected in patients with moderate hepatic impairment.

Paediatric population

No studies with ertugliflozin have been performed in paediatric patients.

Effects of age, body weight, gender and race

Based on a population pharmacokinetic analysis, age, body weight, gender, and race do not have a clinically meaningful effect on the pharmacokinetics of ertugliflozin.

Sitagliptin

Absorption

Following oral administration of a 100-mg dose to healthy subjects, sitagliptin was rapidly absorbed, with peak plasma concentrations (median T_{max}) occurring 1 to 4 hours post-dose. Mean plasma AUC of sitagliptin was 8.52 $\mu\text{M}\cdot\text{hr}$ and C_{max} was 950 nM. The absolute bioavailability of sitagliptin is approximately 87%. Since coadministration of a high-fat meal with sitagliptin had no effect on the pharmacokinetics, Steglujan may be administered with or without food.

Plasma AUC of sitagliptin increased in a dose-proportional manner. Dose-proportionality was not established for C_{max} and C_{24hr} (C_{max} increased in a greater than dose-proportional manner and C_{24hr} increased in a less than dose-proportional manner).

Distribution

The mean volume of distribution at steady state following a single 100-mg intravenous dose of sitagliptin to healthy subjects is approximately 198 l. The fraction of sitagliptin reversibly bound to plasma proteins is low (38%).

Biotransformation

Sitagliptin is primarily eliminated unchanged in urine, and metabolism is a minor pathway. Approximately 79% of sitagliptin is excreted unchanged in the urine.

Following a [^{14}C]sitagliptin oral dose, approximately 16% of the radioactivity was excreted as metabolites of sitagliptin. Six metabolites were detected at trace levels and are not expected to contribute to the plasma DPP-4 inhibitory activity of sitagliptin. *In vitro* studies indicated that the primary enzyme responsible for the limited metabolism of sitagliptin was CYP3A4, with contribution from CYP2C8.

In vitro data showed that sitagliptin is not an inhibitor of CYP isozymes CYP3A4, 2C8, 2C9, 2D6, 1A2, 2C19 or 2B6, and is not an inducer of CYP3A4 and CYP1A2.

Elimination

Following administration of an oral [^{14}C]sitagliptin dose to healthy subjects, approximately 100% of the administered radioactivity was eliminated in faeces (13%) or urine (87%) within one week of dosing. The apparent terminal $t_{1/2}$ following a 100-mg oral dose of sitagliptin was approximately

12.4 hours. Sitagliptin accumulates only minimally with multiple doses. The renal clearance was approximately 350 ml/min.

Elimination of sitagliptin occurs primarily via renal excretion and involves active tubular secretion. Sitagliptin is a substrate for human organic anion transporter-3 (hOAT-3), which may be involved in the renal elimination of sitagliptin. The clinical relevance of hOAT-3 in sitagliptin transport has not been established. Sitagliptin is also a substrate of P-gp, which may also be involved in mediating the renal elimination of sitagliptin. However, ciclosporin, a P-gp inhibitor, did not reduce the renal clearance of sitagliptin. Sitagliptin is not a substrate for OCT2 or OAT1 or peptide transporter 1/2 (PEPT1/2) transporters. *In vitro*, sitagliptin did not inhibit OAT3 (IC₅₀=160 µM) or p-glycoprotein (up to 250 µM) mediated transport at therapeutically relevant plasma concentrations. In a clinical study sitagliptin had a small effect on plasma digoxin concentrations indicating that sitagliptin may be a mild inhibitor of P-gp.

Drug interactions

No drug interactions studies have been performed with Steglujan and other medicinal products; however, such studies have been conducted with the individual active substances.

In vitro assessment of ertugliflozin

In *in vitro* studies, ertugliflozin and ertugliflozin glucuronides did not inhibit or inactivate CYPs 1A2, 2C9, 2C19, 2C8, 2B6, 2D6, or 3A4, and did not induce CYPs 1A2, 2B6, or 3A4. Ertugliflozin and ertugliflozin glucuronides did not inhibit the activity of UGTs 1A6, 1A9 or 2B7 *in vitro*. Ertugliflozin was a weak inhibitor of UGTs 1A1 and 1A4 *in vitro* at higher concentrations that are not clinically relevant. Ertugliflozin glucuronides had no effect on these isoforms. Overall, ertugliflozin is unlikely to affect the pharmacokinetics of concurrently administered drugs eliminated by these enzymes.

Ertugliflozin or ertugliflozin glucuronides do not meaningfully inhibit P-gp, OCT2, OAT1, or OAT3 transporters or transporting polypeptides OATP1B1 and OATP1B3 at clinically relevant concentrations *in vitro*. Overall, ertugliflozin is unlikely to affect the pharmacokinetics of concurrently administered medications that are substrates of these transporters.

In vitro assessment of sitagliptin

In vitro data suggest that sitagliptin does not inhibit or induce CYP450 isoenzymes. In clinical studies, sitagliptin did not meaningfully alter the pharmacokinetics of metformin, glyburide, simvastatin, rosiglitazone, warfarin, or oral contraceptives, providing *in vivo* evidence of a low propensity for causing interactions with substrates of CYP3A4, CYP2C8, CYP2C9, and OCT. Sitagliptin may be a mild inhibitor of P-gp *in vivo*.

In vitro transport studies showed that sitagliptin is a substrate for P-gp and OAT3. OAT3 mediated transport of sitagliptin was inhibited *in vitro* by probenecid, although the risk of clinically meaningful interactions is considered to be low. Concomitant administration of OAT3 inhibitors has not been evaluated *in vivo*.

Characteristics in patients

The pharmacokinetics of sitagliptin were generally similar in healthy subjects and in patients with type 2 diabetes.

Renal impairment

In patients with normal renal function, metabolism, including via CYP3A4, plays only a small role in the clearance of sitagliptin. Metabolism may play a more significant role in the elimination of sitagliptin in the setting of severe renal impairment or end-stage renal disease (ESRD).

Compared to normal healthy control subjects, plasma AUC of sitagliptin was increased modestly in patients with GFR ≥ 45 to < 90 mL/min. Because increases of this magnitude are not clinically relevant, dosage adjustment in these patients is not necessary.

Hepatic impairment

No dose adjustment for sitagliptin is necessary for patients with mild or moderate hepatic impairment (Child-Pugh score ≤ 9). There is no clinical experience in patients with severe hepatic impairment (Child-Pugh score > 9). However, because sitagliptin is primarily renally eliminated, severe hepatic impairment is not expected to affect the pharmacokinetics of sitagliptin.

Elderly

No dose adjustment is required based on age. Age did not have a clinically meaningful impact on the pharmacokinetics of sitagliptin based on a population pharmacokinetic analysis of Phase 1 and Phase 2 data. Elderly subjects (65 to 80 years) had approximately 19% higher plasma concentrations of sitagliptin compared to younger subjects.

Paediatric

No studies with sitagliptin have been performed in paediatric patients.

Other patient characteristics

No dose adjustment is necessary based on gender, race, or body mass index (BMI). These characteristics had no clinically meaningful effect on the pharmacokinetics of sitagliptin based on a composite analysis of Phase 1 pharmacokinetic data and on a population pharmacokinetic analysis of Phase 1 and Phase 2 data.

5.3 Preclinical safety data

Non-clinical data reveal no special hazard for humans based on conventional studies of safety pharmacology, acute toxicity, repeated dose toxicity, genotoxicity, and carcinogenic potential.

Ertugliflozin

General toxicity

Repeat-dose oral toxicity studies were conducted in mice, rats, and dogs for up to 13, 26, and 39 weeks, respectively. Signs of toxicity that were considered adverse were generally observed at exposures greater than or equal to 77 times the human unbound exposure (AUC) at the maximum recommended human dose (MRHD) of 15 mg/day. Most toxicity was consistent with pharmacology related to urinary glucose loss and included decreased body weight and body fat, increased food consumption, diarrhoea, dehydration, decreased serum glucose and increases in other serum parameters reflective of increased protein metabolism, gluconeogenesis and electrolyte imbalances, and urinary changes such as polyuria, glucosuria, and calciuria. Microscopic changes related to glucosuria and/or calciuria observed only in rodents included dilatation of renal tubules, hypertrophy of zona glomerulosa in adrenal glands (rats), and increased trabecular bone (rats). Except for emesis, there were no adverse toxicity findings in dogs at 379 times the human unbound exposure (AUC) at the MRHD of 15 mg/day.

Carcinogenesis

In the 2-year mouse carcinogenicity study, ertugliflozin was administered by oral gavage at doses of 5, 15, and 40 mg/kg/day. There were no ertugliflozin-related neoplastic findings at doses up to 40 mg/kg/day (approximately 41 times human unbound exposure at the MRHD of 15 mg/day based on AUC). In the 2-year rat carcinogenicity study, ertugliflozin was administered by oral gavage at doses of 1.5, 5, and 15 mg/kg/day. Ertugliflozin-related neoplastic findings included an increased incidence of benign adrenal medullary pheochromocytoma in male rats at 15 mg/kg/day. This finding was attributed to carbohydrate malabsorption leading to altered calcium homeostasis and was not considered relevant to human risk. The no-observed-effect level (NOEL) for neoplasia was 5 mg/kg/day (approximately 16 times human unbound exposure at the MRHD of 15 mg/day).

Mutagenesis

Ertugliflozin was not mutagenic or clastogenic with or without metabolic activation in the microbial reverse mutation, *in vitro* cytogenetic (human lymphocytes), and *in vivo* rat micronucleus assays.

Reproductive toxicology

In the rat fertility and embryonic development study, male and female rats were administered ertugliflozin at 5, 25, and 250 mg/kg/day. No effects on fertility were observed at 250 mg/kg/day (approximately 386 times human unbound exposure at the MRHD of 15 mg/day based on AUC comparisons). Ertugliflozin did not adversely affect developmental outcomes in rats and rabbits at maternal exposures that were 239 and 1,069 times, respectively, the human exposure at the maximum clinical dose of 15 mg/day, based on AUC. At a maternally toxic dose in rats (250 mg/kg/day), lower foetal viability and a higher incidence of a visceral malformation were observed at maternal exposure that was 510 times the maximum clinical dose of 15 mg/day.

In the pre- and post-natal development study, decreased post-natal growth and development were observed in rats administered ertugliflozin gestation day 6 through lactation day 21 at ≥ 100 mg/kg/day (estimated 239 times the human exposure at the maximum clinical dose of 15 mg/day, based on AUC). Sexual maturation was delayed in both sexes at 250 mg/kg/day (estimated 620 times the MRHD at 15 mg/day, based on AUC).

When ertugliflozin was administered to juvenile rats from post-natal day (PND) 21 to PND 90, a period of renal development corresponding to the late second and third trimesters of human pregnancy, increased kidney weights, dilatation of the renal pelvis and tubules, and renal tubular mineralization were seen at an exposure 13 times the maximum clinical dose of 15 mg/day, based on AUC. Effects on bone (shorter femur length, increased trabecular bone in the femur) as well as effects of delayed puberty were observed at an exposure 817 times the MRHD of 15 mg/day based on AUC. The effects on kidney and bone did not fully reverse after the 1 month recovery period.

Sitagliptin

Renal and liver toxicity were observed in rodents at systemic exposure values 58 times the human exposure level, while the no-effect level was found at 19 times the human exposure level. Incisor teeth abnormalities were observed in rats at exposure levels 67 times the clinical exposure level; the no-effect level for this finding was 58-fold based on the 14-week rat study. The relevance of these findings for humans is unknown. Transient treatment-related physical signs, some of which suggest neural toxicity, such as open-mouth breathing, salivation, white foamy emesis, ataxia, trembling, decreased activity, and/or hunched posture were observed in dogs at exposure levels approximately 23 times the clinical exposure level. In addition, very slight to slight skeletal muscle degeneration was also observed histologically at doses resulting in systemic exposure levels of approximately 23 times the human exposure level. A no-effect level for these findings was found at an exposure 6-fold the clinical exposure level.

Sitagliptin has not been demonstrated to be genotoxic in preclinical studies. Sitagliptin was not carcinogenic in mice. In rats, there was an increased incidence of hepatic adenomas and carcinomas at systemic exposure levels 58 times the human exposure level. Since hepatotoxicity has been shown to correlate with induction of hepatic neoplasia in rats, this increased incidence of hepatic tumours in rats was likely secondary to chronic hepatic toxicity at this high dose. Because of the high safety margin (19-fold at this no-effect level), these neoplastic changes are not considered relevant for the situation in humans.

No adverse effects upon fertility were observed in male and female rats given sitagliptin prior to and throughout mating.

In a pre-/post-natal development study performed in rats sitagliptin showed no adverse effects.

Reproductive toxicity studies showed a slight treatment-related increased incidence of foetal rib malformations (absent, hypoplastic and wavy ribs) in the offspring of rats at systemic exposure levels more than 29 times the human exposure levels. Maternal toxicity was seen in rabbits at more than 29 times the human exposure levels. Because of the high safety margins, these findings do not suggest a relevant risk for human reproduction. Sitagliptin is secreted in considerable amounts into the milk of lactating rats (milk/plasma ratio: 4:1).

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Tablet core

Microcrystalline cellulose (E460)
Calcium hydrogen phosphate (anhydrous)
Croscarmellose sodium
Sodium stearyl fumarate (E487)
Magnesium stearate (E470b)

Tablet coat

Hypromellose (E464)
Hydroxypropyl cellulose (E463)
Titanium dioxide (E171)
Iron oxide red (E172)
Iron oxide yellow (E172)
Iron oxide black (E172)
Carnauba wax (E903)

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

2 years

6.4 Special precautions for storage

This medicinal product does not require any special storage conditions.

6.5 Nature and contents of container

Alu/PVC/PA/Alu blisters
Packs of 14, 28, 30, 84, 90 and 98 film-coated tablets in non-perforated blisters.
Packs of 30x1 film-coated tablets in perforated unit dose blisters.

Not all pack sizes may be marketed.

6.6 Special precautions for disposal

No special requirements.

7. MARKETING AUTHORISATION HOLDER

Merck Sharp & Dohme B.V.
Waarderweg 39
2031 BN Haarlem
The Netherlands

8. MARKETING AUTHORISATION NUMBER(S)

Steglujan 5 mg/100 mg film-coated tablets

EU/1/18/1266/001

EU/1/18/1266/002

EU/1/18/1266/003

EU/1/18/1266/004

EU/1/18/1266/005

EU/1/18/1266/006

EU/1/18/1266/013

Steglujan 15 mg/100 mg film-coated tablets

EU/1/18/1266/007

EU/1/18/1266/008

EU/1/18/1266/009

EU/1/18/1266/010

EU/1/18/1266/011

EU/1/18/1266/012

EU/1/18/1266/014

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 23 March 2018

10. DATE OF REVISION OF THE TEXT

Detailed information on this medicinal product is available on the website of the European Medicines Agency <http://www.ema.europa.eu>.

ANNEX II

- A. MANUFACTURER(S) RESPONSIBLE FOR BATCH RELEASE**
- B. CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE**
- C. OTHER CONDITIONS AND REQUIREMENTS OF THE MARKETING AUTHORISATION**
- D. CONDITIONS OR RESTRICTIONS WITH REGARD TO THE SAFE AND EFFECTIVE USE OF THE MEDICINAL PRODUCT**

A. MANUFACTURER(S) RESPONSIBLE FOR BATCH RELEASE

Name and address of the manufacturer(s) responsible for batch release

Schering-Plough Labo NV
Industriepark 30
2220 Heist-op-den-Berg
BELGIUM

B. CONDITIONS OR RESTRICTIONS REGARDING SUPPLY AND USE

Medicinal product subject to medical prescription.

C. OTHER CONDITIONS AND REQUIREMENTS OF THE MARKETING AUTHORISATION

• Periodic safety update reports

The requirements for submission of periodic safety update reports for this medicinal product are set out in the list of Union reference dates (EURD list) provided for under Article 107c(7) of Directive 2001/83/EC and any subsequent updates published on the European medicines web-portal. The marketing authorisation holder shall submit the first periodic safety update report for this product within 6 months following authorisation.

D. CONDITIONS OR RESTRICTIONS WITH REGARD TO THE SAFE AND EFFECTIVE USE OF THE MEDICINAL PRODUCT

• Risk Management Plan (RMP)

The MAH shall perform the required pharmacovigilance activities and interventions detailed in the agreed RMP presented in Module 1.8.2 of the marketing authorisation and any agreed subsequent updates of the RMP.

An updated RMP should be submitted:

- At the request of the European Medicines Agency;
- Whenever the risk management system is modified, especially as the result of new information being received that may lead to a significant change to the benefit/risk profile or as the result of an important (pharmacovigilance or risk minimisation) milestone being reached.

ANNEX III
LABELLING AND PACKAGE LEAFLET

A. LABELLING

PARTICULARS TO APPEAR ON THE OUTER PACKAGING

CARTON FOR STEGLUJAN 5 mg/100 mg

1. NAME OF THE MEDICINAL PRODUCT

Steglujan 5 mg/100 mg film-coated tablets
ertugliflozin/sitagliptin

2. STATEMENT OF ACTIVE SUBSTANCE(S)

Each tablet contains 5 mg of ertugliflozin (as ertugliflozin L-pyroglutamic acid) and 100 mg of sitagliptin (as sitagliptin phosphate monohydrate).

3. LIST OF EXCIPIENTS

4. PHARMACEUTICAL FORM AND CONTENTS

14 film-coated tablets
28 film-coated tablets
30 film-coated tablets
30x1 film-coated tablets
84 film-coated tablets
90 film-coated tablets
98 film-coated tablets

5. METHOD AND ROUTE(S) OF ADMINISTRATION

Read the package leaflet before use.
Oral use

6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN

Keep out of the sight and reach of children.

7. OTHER SPECIAL WARNING(S), IF NECESSARY

8. EXPIRY DATE

EXP

9. SPECIAL STORAGE CONDITIONS

10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE

11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Merck Sharp & Dohme B.V.
Waarderweg 39
2031 BN Haarlem
The Netherlands

12. MARKETING AUTHORISATION NUMBER(S)

EU/1/18/1266/001 (14 film-coated tablets)
EU/1/18/1266/002 (28 film-coated tablets)
EU/1/18/1266/003 (30 film-coated tablets)
EU/1/18/1266/004 (30x1 film-coated tablets)
EU/1/18/1266/005 (84 film-coated tablets)
EU/1/18/1266/006 (90 film-coated tablets)
EU/1/18/1266/013 (98 film-coated tablets)

13. BATCH NUMBER

Lot

14. GENERAL CLASSIFICATION FOR SUPPLY

15. INSTRUCTIONS ON USE

16. INFORMATION IN BRAILLE

Steglujan 5 mg/100 mg

17. UNIQUE IDENTIFIER – 2D BARCODE

2D barcode carrying the unique identifier included.

18. UNIQUE IDENTIFIER - HUMAN READABLE DATA

PC:
SN:
NN:

MINIMUM PARTICULARS TO APPEAR ON BLISTERS OR STRIPS

BLISTER FOR STEGLUJAN 5 mg/100 mg

1. NAME OF THE MEDICINAL PRODUCT

Steglujan 5 mg/100 mg tablets
ertugliflozin/sitagliptin

2. NAME OF THE MARKETING AUTHORISATION HOLDER

MSD

3. EXPIRY DATE

EXP

4. BATCH NUMBER

Lot

5. OTHER

PARTICULARS TO APPEAR ON THE OUTER PACKAGING

CARTON FOR STEGLUJAN 15 mg/100 mg

1. NAME OF THE MEDICINAL PRODUCT

Steglujan 15 mg/100 mg film-coated tablets
ertugliflozin/sitagliptin

2. STATEMENT OF ACTIVE SUBSTANCE(S)

Each tablet contains 15 mg of ertugliflozin (as ertugliflozin L-pyroglutamic acid) and 100 mg of sitagliptin (as sitagliptin phosphate monohydrate).

3. LIST OF EXCIPIENTS

4. PHARMACEUTICAL FORM AND CONTENTS

14 film-coated tablets
28 film-coated tablets
30 film-coated tablets
30x1 film-coated tablets
84 film-coated tablets
90 film-coated tablets
98 film-coated tablets

5. METHOD AND ROUTE(S) OF ADMINISTRATION

Read the package leaflet before use.
Oral use

6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN

Keep out of the sight and reach of children.

7. OTHER SPECIAL WARNING(S), IF NECESSARY

8. EXPIRY DATE

EXP

9. SPECIAL STORAGE CONDITIONS

10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE

11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER

Merck Sharp & Dohme B.V.
Waarderweg 39
2031 BN Haarlem
The Netherlands

12. MARKETING AUTHORISATION NUMBER(S)

EU/1/18/1266/007 (14 film-coated tablets)
EU/1/18/1266/008 (28 film-coated tablets)
EU/1/18/1266/009 (30 film-coated tablets)
EU/1/18/1266/010 (30x1 film-coated tablets)
EU/1/18/1266/011 (84 film-coated tablets)
EU/1/18/1266/012 (90 film-coated tablets)
EU/1/18/1266/014 (98 film-coated tablets)

13. BATCH NUMBER

Lot

14. GENERAL CLASSIFICATION FOR SUPPLY

15. INSTRUCTIONS ON USE

16. INFORMATION IN BRAILLE

Steglujan 15 mg/100 mg

17. UNIQUE IDENTIFIER – 2D BARCODE

2D barcode carrying the unique identifier included.

18. UNIQUE IDENTIFIER - HUMAN READABLE DATA

PC:
SN:
NN:

MINIMUM PARTICULARS TO APPEAR ON BLISTERS OR STRIPS

BLISTER FOR STEGLUJAN 15 mg/100 mg

1. NAME OF THE MEDICINAL PRODUCT

Steglujan 15 mg/100 mg tablets
ertugliflozin/sitagliptin

2. NAME OF THE MARKETING AUTHORISATION HOLDER

MSD

3. EXPIRY DATE

EXP

4. BATCH NUMBER

Lot

5. OTHER

B. PACKAGE LEAFLET

Package leaflet: Information for the patient

Steglujan 5 mg/100 mg film-coated tablets
Steglujan 15 mg/100 mg film-coated tablets
ertugliflozin/sitagliptin

▼ This medicine is subject to additional monitoring. This will allow quick identification of new safety information. You can help by reporting any side effects you may get. See the end of section 4 for how to report side effects.

Read all of this leaflet carefully before you start taking this medicine because it contains important information for you.

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, pharmacist, or nurse.
- This medicine has been prescribed for you only. Do not pass it on to others. It may harm them, even if their signs of illness are the same as yours.
- If you get any side effects, talk to your doctor, pharmacist, or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

1. What Steglujan is and what it is used for
2. What you need to know before you take Steglujan
3. How to take Steglujan
4. Possible side effects
5. How to store Steglujan
6. Contents of the pack and other information

1. What Steglujan is and what it is used for

What Steglujan is

Steglujan contains two active substances, ertugliflozin and sitagliptin.

- Ertugliflozin belongs to a group of medicines called sodium glucose co-transporter-2 (SGLT2) inhibitors.
- Sitagliptin belongs to a group of medicines called DPP-4 (dipeptidyl peptidase-4) inhibitors.

What Steglujan is used for

- Steglujan lowers blood sugar levels in adult patients (aged 18 years and older) with type 2 diabetes.
- Steglujan can be used instead of taking both ertugliflozin and sitagliptin as separate tablets.
- Steglujan can be used alone or with some other medicines that lower blood sugar.
- You need to keep following your food and exercise plan while taking Steglujan.

How Steglujan works

- Ertugliflozin works by blocking the SGLT2 protein in your kidneys. This causes blood sugar to be removed in your urine.
- Sitagliptin helps to increase the levels of insulin produced after a meal. It also lowers the amount of sugar made by your body.

What is type 2 diabetes?

Type 2 diabetes is a condition in which your body does not make enough insulin or the insulin that your body produces does not work as well as it should. Your body can also make too much sugar. When this happens, sugar (glucose) builds up in the blood. This can lead to serious medical problems, like heart disease, kidney disease, blindness and poor circulation.

2. What you need to know before you take Steglujan

Do not take Steglujan:

- if you are allergic to ertugliflozin or sitagliptin or any of the other ingredients of this medicine (listed in section 6).

Warnings and precautions

Talk to your doctor, pharmacist, or nurse before and while taking Steglujan if you:

- have kidney problems.
- have or have had yeast infections of the vagina or penis.
- have ever had serious heart disease or if you have had a stroke.
- have or have had a disease of the pancreas (such as pancreatitis).
- have type 1 diabetes. Steglujan should not be used to treat this condition.
- take other diabetes medicines: you are more likely to get low blood sugar with certain medicines.
- might be at risk of dehydration (for example, if you are taking medicines that increase urine production [diuretics] or lower blood pressure or if you are over 65 years old). Ask about ways to prevent dehydration.
- have or have had gallstones, alcohol dependence or very high levels of triglycerides (a form of fat) in your blood. These medical conditions can increase your chance of getting pancreatitis (see section 4).
- experience rapid weight loss, feeling sick or being sick, stomach pain, excessive thirst, fast and deep breathing, confusion, unusual sleepiness or tiredness, a sweet smell to your breath, a sweet or metallic taste in your mouth or a different odour to your urine or sweat contact a doctor or the nearest hospital straight away. These symptoms could be a sign of “diabetic ketoacidosis” – a problem you can get with diabetes because of increased levels of “ketone bodies” in your urine or blood, seen in tests. The risk of developing diabetic ketoacidosis may be increased with prolonged fasting, excessive alcohol consumption, dehydration, sudden reductions in insulin dose, or a higher need of insulin due to major surgery or serious illness.
- have had a lower limb amputation.

It is important to check your feet regularly and adhere to any other advice regarding foot care and adequate hydration given by your healthcare professional. You should notify your doctor immediately if you notice any wounds or discolouration, or if you experience any tenderness or pain in your feet. Some studies indicate that taking ertugliflozin may have contributed to an increase in cases of lower limb amputation (mainly of the toe).

Cases of inflammation of the pancreas (pancreatitis) have been reported in patients receiving sitagliptin (see section 4).

When this medicine is used in combination with insulin or medicines that increase insulin release from the pancreas, low blood sugar (hypoglycaemia) can occur. Your doctor may reduce the dose of your insulin or other medicine.

If you have any further questions on the use of this medicine, ask your doctor or pharmacist.

Urine glucose

Because of how Steglujan works, your urine will test positive for sugar (glucose) while you are on this medicine.

Children and adolescents

Children and adolescents below 18 years should not take this medicine. It is not known if this medicine is safe and effective when used in children and adolescents under 18 years of age.

Other medicines and Steglujan

Tell your doctor or pharmacist if you are taking, have recently taken or might take any other medicines.

In particular, tell your doctor:

- if you are taking medicines which increase urine production (diuretics).
- if you are taking other medicines that lower the amount of sugar in your blood, such as insulin or medicines that increase insulin release from the pancreas.
- if you are taking digoxin (a medicine used to treat irregular heart beat and other heart problems). The level of digoxin in your blood may need to be checked if you are taking it with Steglujan.

If any of the above apply to you (or you are not sure), tell your doctor.

Pregnancy and breast-feeding

If you are pregnant or breast-feeding, think you may be pregnant, or are planning to have a baby, ask your doctor or pharmacist for advice before taking this medicine.

It is not known if Steglujan can harm your unborn baby. You should not take this medicine during pregnancy.

It is not known if this medicine passes into breast milk. Talk with your doctor about the best way to feed your baby if you take Steglujan. You should not use this medicine if you are breast-feeding or plan to breast-feed.

Driving and using machines

This medicine has no or negligible influence on the ability to drive and use machines. However, dizziness and drowsiness have been reported with sitagliptin, which may affect your ability to drive or use machines. Do not drive or use any tools or machines if you feel dizzy while taking Steglujan.

Taking this medicine in combination with insulin or medicines that increase insulin release from the pancreas can cause blood sugar levels to drop too low (hypoglycaemia), which may cause symptoms such as shaking, sweating or changes in vision and may affect your ability to drive and use machines.

3. How to take Steglujan

Always take this medicine exactly as your doctor or pharmacist has told you. Check with your doctor or pharmacist if you are not sure.

How much to take

- The recommended dose of Steglujan is one tablet once a day.
- The dose of Steglujan that you take will depend on your condition and the amount of ertugliflozin and sitagliptin needed to control your blood sugar.
- Your doctor will prescribe the right dose for you. Do not change your dose unless your doctor has told you to.

Taking this medicine

- Swallow the tablet; if you have difficulties with swallowing the tablet can be broken or crushed.
- Take one tablet every morning. Try to take it at the same time; this will help you remember to take it.
- You can take your tablet with or without food.
- You need to keep following your food and exercise plan while taking Steglujan.

If you take more Steglujan than you should

If you take too much Steglujan, talk to a doctor or pharmacist straight away.

If you forget to take Steglujan

If you forget a dose, take it as soon as you remember. However, if it is nearly time for your next dose, skip the missed dose and go back to your regular schedule.

Do not take a double dose (two doses on the same day) to make up for a forgotten dose.

If you stop taking Steglujan

Do not stop taking this medicine without talking to your doctor. Your blood sugar levels may increase if you stop the medicine.

If you have any further questions on the use of this medicine, ask your doctor, pharmacist, or nurse.

4. Possible side effects

Like all medicines, this medicine can cause side effects, although not everybody gets them.

Stop taking Steglujan and contact a doctor straight away if you notice any of the following serious side effects:

- Severe and persistent pain in the abdomen (stomach area) which might reach through to your back with or without nausea and vomiting, as these could be signs of an inflamed pancreas (pancreatitis).
- A serious allergic reaction (frequency not known), including rash, hives, blisters on the skin/peeling skin and swelling of the face, lips, tongue, and throat that may cause difficulty in breathing or swallowing. Your doctor may prescribe a medicine to treat your allergic reaction and a different medicine for your diabetes.

If you notice any of the serious side effects above, stop taking this medicine and contact a doctor straight away.

Contact a doctor or the nearest hospital straight away if you have any of the following serious side effects:**Diabetic ketoacidosis (rare, may affect up to 1 in 1,000 people)**

These are the signs of diabetic ketoacidosis (see also section “Warnings and precautions”):

- increased levels of “ketone bodies” in your urine or blood
- rapid weight loss
- feeling sick or being sick
- stomach pain
- excessive thirst
- fast and deep breathing
- confusion
- unusual sleepiness or tiredness
- a sweet smell to your breath, a sweet or metallic taste in your mouth or a different odour to your urine or sweat

This may occur regardless of blood glucose level. Your doctor may decide to temporarily or permanently stop your treatment with Steglujan.

If you notice any of the side effects above, contact a doctor or the nearest hospital straight away.

Contact your doctor as soon as possible if you notice the following side effects:**Dehydration (losing too much water from your body; common, may affect up to 1 in 10 people)**

Symptoms of dehydration include:

- dry mouth
- feeling dizzy, light-headed, or weak, especially when you stand up
- fainting

You may be more likely to get dehydrated if you:

- have kidney problems
- take medicines that increase your urine production (diuretics) or lower blood pressure
- are 65 years or older

Low blood sugar (hypoglycaemia; common)

Your doctor will tell you how to treat low blood sugar and what to do if you have any of the symptoms or signs below. The doctor may lower the dose of your insulin or other diabetes medicine.

Signs and symptoms of low blood sugar may include:

- headache
- drowsiness
- irritability
- hunger
- dizziness
- confusion
- sweating
- feeling jittery
- weakness
- fast heart beat

If you notice any of the side effects above, contact your doctor as soon as possible.

Other side effects include:

Very common

- vaginal yeast infection (thrush)
- low blood sugar

Common

- yeast infections of the penis
- changes in urination, including urgent need to urinate more often, in larger amounts, or at night
- thirst
- vaginal itching
- blood tests may show changes in the amount of urea in your blood
- blood tests may show changes in the amount of total and bad cholesterol (called LDL - a type of fat in your blood)
- blood tests may show changes in the amount of red blood cells in your blood (called haemoglobin)
- constipation
- flatulence
- swelling of the hands or legs
- flu
- headache
- upper respiratory infection
- stuffy or runny nose and sore throat
- osteoarthritis
- arm or leg pain
- nausea/vomiting

Uncommon (may affect up to 1 in 100 people)

- blood tests may show changes related to kidney function (such as 'creatinine')
- painful urination
- stomach ache

- diarrhoea
- drowsiness
- dry mouth
- dizziness
- itching

Rare

- reduced number of platelets

Not known (frequency cannot be estimated from the available data)

- kidney problems (sometimes requiring dialysis)
- joint pain
- muscle pain
- back pain
- interstitial lung disease
- bullous pemphigoid (a type of skin blister)

Reporting of side effects

If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via [the national reporting system listed in Appendix V](#). By reporting side effects you can help provide more information on the safety of this medicine.

5. How to store Steglujan

Keep this medicine out of the sight and reach of children.

Do not use this medicine after the expiry date which is stated on the blister and the carton after EXP. The expiry date refers to the last day of that month.

This medicine does not require any special storage conditions.

Do not use this medicine if the packaging is damaged or shows signs of tampering.

Do not throw away medicines via wastewater or household waste. Ask your pharmacist how to throw away medicines you no longer use. These measures will help protect the environment.

6. Contents of the pack and other information

What Steglujan contains

- The active substances are ertugliflozin and sitagliptin.
 - Each Steglujan 5 mg/100 mg film-coated tablet contains 5 mg of ertugliflozin (as ertugliflozin L-pyroglutamic acid) and 100 mg sitagliptin (as sitagliptin phosphate monohydrate).
 - Each Steglujan 15 mg/100 mg film-coated tablet contains 15 mg of ertugliflozin (as ertugliflozin L-pyroglutamic acid) and 100 mg sitagliptin (as sitagliptin phosphate monohydrate).
- The other ingredients are:
 - Tablet core: microcrystalline cellulose (E460), calcium hydrogen phosphate (anhydrous), croscarmellose sodium, sodium stearyl fumarate (E487), magnesium stearate (E470b).
 - Tablet coat: hypromellose (E464), hydroxypropyl cellulose (E463), titanium dioxide (E171), iron oxide red (E172), iron oxide yellow (E172), iron oxide black (E172), carnauba wax (E903).

What Steglujan looks like and contents of the pack

- Steglujan 5 mg/100 mg film-coated tablets (tablets) are beige, 12.0 x 7.4 mm, almond-shaped, film-coated tablets debossed with “554” on one side and plain on the other side.
- Steglujan 15 mg/100 mg film-coated tablets (tablets) are brown, 12.0 x 7.4 mm, almond-shaped, film-coated tablets debossed with “555” on one side and plain on the other side.

Steglujan is available in Alu/PVC/PA/Alu blisters. The pack sizes are 14, 28, 30, 84, 90 and 98 film-coated tablets in non-perforated blisters and 30x1 film-coated tablets in perforated unit dose blisters.

Not all pack sizes may be marketed.

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This leaflet was last revised in {MM/YYYY}.

Detailed information on this medicine is available on the European Medicines Agency web site:
<http://www.ema.europa.eu>.

ANNEX IV

**SCIENTIFIC CONCLUSIONS AND GROUNDS FOR THE VARIATION TO THE
TERMS OF THE MARKETING AUTHORISATION(S)**

Scientific conclusions

Taking into account the PRAC Assessment Report on the PSUR(s) for ertugliflozin/sitagliptin, the scientific conclusions of CHMP are as follows:

Interim results of an ongoing clinical trial of ertugliflozin on top of standard-of-care in type 2 diabetes patients with a history of established vascular disease, suggest an approximately 1.2-1.6-fold increased risk of lower limb amputation in patients treated with ertugliflozin. An increased risk of amputations with ertugliflozin is also supported by the broad pool safety data. The current information in the SmPC “an increase in cases of lower limb amputation (primarily of the toe) has been observed in long-term clinical studies with another SGLT2 inhibitor” is not adequate. It is therefore not accepted to wait until the final results of the MK-8835-004/B1521021 study are submitted in 2020. Section 4.4 on lower limb amputations should therefore be revised, and the package leaflet should be updated in line with the SmPC.

The CHMP agrees with the scientific conclusions made by the PRAC.

Grounds for the variation to the terms of the marketing authorisation(s)

On the basis of the scientific conclusions for ertugliflozin/sitagliptin the CHMP is of the opinion that the benefit-risk balance of the medicinal product(s) containing ertugliflozin/sitagliptin is unchanged subject to the proposed changes to the product information.

The CHMP recommends that the terms of the marketing authorisation(s) should be varied.