

**ANNEX I**  
**SUMMARY OF PRODUCT CHARACTERISTICS**

## 1. NAME OF THE MEDICINAL PRODUCT

Forxiga 5 mg film-coated tablets  
Forxiga 10 mg film-coated tablets

## 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

### Forxiga 5 mg film-coated tablets

Each tablet contains dapagliflozin propanediol monohydrate equivalent to 5 mg dapagliflozin.

### *Excipient with known effect:*

Each 5 mg tablet contains 25 mg of lactose anhydrous.

### Forxiga 10 mg film-coated tablets

Each tablet contains dapagliflozin propanediol monohydrate equivalent to 10 mg dapagliflozin.

### *Excipient with known effect:*

Each 10 mg tablet contains 50 mg of lactose anhydrous.

For the full list of excipients, see section 6.1.

## 3. PHARMACEUTICAL FORM

Film-coated tablet (tablet).

### Forxiga 5 mg film-coated tablets

Yellow, biconvex, 0.7 cm diameter round, film-coated tablets with “5” engraved on one side and “1427” engraved on the other side.

### Forxiga 10 mg film-coated tablets

Yellow, biconvex, approximately 1.1 x 0.8 cm diagonally diamond-shaped, film-coated tablets with “10” engraved on one side and “1428” engraved on the other side.

## 4. CLINICAL PARTICULARS

### 4.1 Therapeutic indications

Forxiga is indicated in adults aged 18 years and older with type 2 diabetes mellitus to improve glycaemic control as:

#### Monotherapy

When diet and exercise alone do not provide adequate glycaemic control in patients for whom use of metformin is considered inappropriate due to intolerance.

#### Add-on combination therapy

In combination with other glucose-lowering medicinal products including insulin, when these, together with diet and exercise, do not provide adequate glycaemic control (see sections 4.4, 4.5 and 5.1 for available data on different combinations).

## 4.2 Posology and method of administration

### Posology

#### Monotherapy and add-on combination therapy

The recommended dose is 10 mg dapagliflozin once daily for monotherapy and add-on combination therapy with other glucose-lowering medicinal products including insulin. When dapagliflozin is used in combination with insulin or an insulin secretagogue, such as a sulphonylurea, a lower dose of insulin or insulin secretagogue may be considered to reduce the risk of hypoglycaemia (see sections 4.5 and 4.8).

#### Special populations

##### *Renal impairment*

Forxiga should not be initiated in patients with a glomerular filtration rate [GFR] < 60 mL/min and should be discontinued at GFR persistently below 45 mL/min (see sections 4.4, 4.8, 5.1 and 5.2).

No dosage adjustment is required based on renal function.

##### *Hepatic impairment*

No dosage adjustment is necessary for patients with mild or moderate hepatic impairment. In patients with severe hepatic impairment, a starting dose of 5 mg is recommended. If well tolerated, the dose may be increased to 10 mg (see sections 4.4 and 5.2).

##### *Elderly ( $\geq 65$ years)*

In general, no dosage adjustment is recommended based on age. Renal function and risk of volume depletion should be taken into account (see sections 4.4 and 5.2). Due to the limited therapeutic experience in patients 75 years and older, initiation of dapagliflozin therapy is not recommended.

##### *Paediatric population*

The safety and efficacy of dapagliflozin in children aged 0 to < 18 years have not yet been established. No data are available.

### Method of administration

Forxiga can be taken orally once daily at any time of day with or without food. Tablets are to be swallowed whole.

## 4.3 Contraindications

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

## 4.4 Special warnings and precautions for use

### Renal impairment

The glycaemic efficacy of dapagliflozin is dependent on renal function, and efficacy is reduced in patients who have moderate renal impairment and is likely absent in patients with severe renal impairment (see section 4.2). In subjects with moderate renal impairment (GFR < 60 mL/min), a higher proportion of subjects treated with dapagliflozin had adverse reactions of increase in creatinine, phosphorus, parathyroid hormone (PTH) and hypotension, compared with placebo.

Forxiga should not be initiated in patients with a GFR < 60 mL/min and should be discontinued at GFR persistently below 45 mL/min. Forxiga has not been studied in severe renal impairment (GFR < 30 mL/min) or end-stage renal disease (ESRD).

Monitoring of renal function is recommended as follows:

- Prior to initiation of dapagliflozin and at least yearly, thereafter (see sections 4.2, 4.8, 5.1 and 5.2).
- Prior to initiation of concomitant medicinal products that may reduce renal function and periodically thereafter.
- For renal function with GFR < 60 mL/min, at least 2 to 4 times per year.

### Hepatic impairment

There is limited experience in clinical trials in patients with hepatic impairment. Dapagliflozin exposure is increased in patients with severe hepatic impairment (see sections 4.2 and 5.2).

### Use in patients at risk for volume depletion, hypotension and/or electrolyte imbalances

Due to its mechanism of action, dapagliflozin increases diuresis associated with a modest decrease in blood pressure (see section 5.1), which may be more pronounced in patients with very high blood glucose concentrations.

Dapagliflozin is not recommended for use in patients receiving loop diuretics (see section 4.5) or who are volume depleted, e.g. due to acute illness (such as gastrointestinal illness).

Caution should be exercised in patients for whom a dapagliflozin-induced drop in blood pressure could pose a risk, such as patients with known cardiovascular disease, patients on anti-hypertensive therapy with a history of hypotension or elderly patients.

For patients receiving dapagliflozin, in case of intercurrent conditions that may lead to volume depletion, careful monitoring of volume status (e.g. physical examination, blood pressure measurements, laboratory tests including haematocrit) and electrolytes is recommended. Temporary interruption of treatment with dapagliflozin is recommended for patients who develop volume depletion until the depletion is corrected (see section 4.8).

### Diabetic ketoacidosis

Rare cases of diabetic ketoacidosis (DKA), including life-threatening and fatal cases, have been reported in patients treated with sodium-glucose co-transporter 2 (SGLT2) inhibitors, including dapagliflozin. 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 dapagliflozin.

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 dapagliflozin 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 dapagliflozin may be restarted once the patient's condition has stabilised.

Before initiating dapagliflozin, 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 dapagliflozin in patients with type 1 diabetes have not been established and dapagliflozin 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.

#### Urinary tract infections

Urinary tract infections were more frequently reported for dapagliflozin 10 mg compared to placebo in a pooled analysis up to 24 weeks (see section 4.8). Pyelonephritis was uncommon and occurred at a similar frequency to control. Urinary glucose excretion may be associated with an increased risk of urinary tract infection; therefore, temporary interruption of dapagliflozin should be considered when treating pyelonephritis or urosepsis.

#### Elderly ( $\geq 65$ years)

Elderly patients are more likely to have impaired renal function, and/or to be treated with anti-hypertensive medicinal products that may cause changes in renal function such as angiotensin-converting enzyme inhibitors (ACE-I) and angiotensin II type 1 receptor blockers (ARB). The same recommendations for renal function apply to elderly patients as to all patients (see sections 4.2, 4.4, 4.8 and 5.1).

In subjects  $\geq 65$  years of age, a higher proportion of subjects treated with dapagliflozin had adverse reactions related to renal impairment or failure compared with placebo. The most commonly reported adverse reaction related to renal function was serum creatinine increases, the majority of which were transient and reversible (see section 4.8).

Elderly patients may be at a greater risk for volume depletion and are more likely to be treated with diuretics. In subjects  $\geq 65$  years of age, a higher proportion of subjects treated with dapagliflozin had adverse reactions related to volume depletion (see section 4.8).

Therapeutic experience in patients 75 years and older is limited. Initiation of dapagliflozin therapy in this population is not recommended (see sections 4.2 and 5.2).

#### Cardiac failure

Experience in NYHA class I-II is limited, and there is no experience in clinical studies with dapagliflozin in NYHA class III-IV.

#### Use in patients treated with pioglitazone

While a causal relationship between dapagliflozin and bladder cancer is unlikely (see sections 4.8 and 5.3), as a precautionary measure, dapagliflozin is not recommended for use in patients concomitantly treated with pioglitazone. Available epidemiological data for pioglitazone suggest a small increased risk of bladder cancer in diabetic patients treated with pioglitazone.

#### Elevated haematocrit

Haematocrit increase was observed with dapagliflozin treatment (see section 4.8); therefore, caution in patients with already elevated haematocrit is warranted.

#### Lower limb amputations

An increase in cases of lower limb amputation (primarily of the toe) has been observed in ongoing long-term, clinical studies with another SGLT2 inhibitor. It is unknown whether this constitutes a class effect. Like for all diabetic patients it is important to counsel patients on routine preventative foot care.

#### Urine laboratory assessments

Due to its mechanism of action, patients taking Forxiga will test positive for glucose in their urine.

#### Lactose

The tablets contain lactose. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency, or glucose-galactose malabsorption should not take this medicinal product.

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

### Pharmacodynamic interactions

#### Diuretics

Dapagliflozin may add to the diuretic effect of thiazide and loop 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. Therefore, a lower dose of insulin or an insulin secretagogue may be required to reduce the risk of hypoglycaemia when used in combination with dapagliflozin (see sections 4.2 and 4.8).

### Pharmacokinetic interactions

The metabolism of dapagliflozin is primarily via glucuronide conjugation mediated by UDP glucuronosyltransferase 1A9 (UGT1A9).

In *in vitro* studies, dapagliflozin neither inhibited cytochrome P450 (CYP) 1A2, CYP2A6, CYP2B6, CYP2C8, CYP2C9, CYP2C19, CYP2D6, CYP3A4, nor induced CYP1A2, CYP2B6 or CYP3A4. Therefore, dapagliflozin is not expected to alter the metabolic clearance of coadministered medicinal products that are metabolised by these enzymes.

#### Effect of other medicinal products on dapagliflozin

Interaction studies conducted in healthy subjects, using mainly a single-dose design, suggest that the pharmacokinetics of dapagliflozin are not altered by metformin, pioglitazone, sitagliptin, glimepiride, voglibose, hydrochlorothiazide, bumetanide, valsartan, or simvastatin.

Following coadministration of dapagliflozin with rifampicin (an inducer of various active transporters and drug-metabolising enzymes) a 22% decrease in dapagliflozin systemic exposure (AUC) was observed, but with no clinically meaningful effect on 24-hour urinary glucose excretion. No dose adjustment is recommended. A clinically relevant effect with other inducers (e.g. carbamazepine, phenytoin, phenobarbital) is not expected.

Following coadministration of dapagliflozin with mefenamic acid (an inhibitor of UGT1A9), a 55% increase in dapagliflozin systemic exposure was seen, but with no clinically meaningful effect on 24-hour urinary glucose excretion. No dose adjustment is recommended.

#### Effect of dapagliflozin on other medicinal products

In interaction studies conducted in healthy subjects, using mainly a single-dose design, dapagliflozin did not alter the pharmacokinetics of metformin, pioglitazone, sitagliptin, glimepiride, hydrochlorothiazide, bumetanide, valsartan, digoxin (a P-gp substrate) or warfarin (S-warfarin, a CYP2C9 substrate), or the anticoagulatory effects of warfarin as measured by INR. Combination of a single dose of dapagliflozin 20 mg and simvastatin (a CYP3A4 substrate) resulted in a 19% increase in AUC of simvastatin and 31% increase in AUC of simvastatin acid. The increase in simvastatin and simvastatin acid exposures are not considered clinically relevant.

#### 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. Use of alternative methods to monitor glycaemic control is advised.

#### Paediatric population

Interaction studies have only been performed in adults.

## 4.6 Fertility, pregnancy and lactation

### Pregnancy

There are no data from the use of dapagliflozin in pregnant women. Studies in rats have shown toxicity to the developing kidney in the time period corresponding to the second and third trimesters of human pregnancy (see section 5.3). Therefore, the use of dapagliflozin is not recommended during the second and third trimesters of pregnancy.

When pregnancy is detected, treatment with dapagliflozin should be discontinued.

### Breast-feeding

It is unknown whether dapagliflozin and/or its metabolites are excreted in human milk. Available pharmacodynamic/toxicological data in animals have shown excretion of dapagliflozin/metabolites in milk, as well as pharmacologically-mediated effects in nursing offspring (see section 5.3). A risk to the newborns/infants cannot be excluded. Dapagliflozin should not be used while breast-feeding.

### Fertility

The effect of dapagliflozin on fertility in humans has not been studied. In male and female rats, dapagliflozin showed no effects on fertility at any dose tested.

## 4.7 Effects on ability to drive and use machines

Forxiga has no or negligible influence on the ability to drive and use machines. Patients should be alerted to the risk of hypoglycaemia when dapagliflozin is used in combination with a sulphonylurea or insulin.

## 4.8 Undesirable effects

### Summary of the safety profile

In a pre-specified pooled analysis of 13 placebo-controlled studies, 2,360 subjects were treated with dapagliflozin 10 mg and 2,295 were treated with placebo.

The most frequently reported adverse reaction was hypoglycaemia, which depended on the type of background therapy used in each study. The frequency of minor episodes of hypoglycaemia was similar between treatment groups, including placebo, with the exceptions of studies with add-on sulphonylurea (SU) and add-on insulin therapies. Combination therapies with sulphonylurea and add-on insulin had higher rates of hypoglycaemia (see *Hypoglycaemia* below).

### Tabulated list of adverse reactions

The following adverse reactions have been identified in the placebo-controlled clinical trials. None were found to be dose-related. 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 ( $< 1/10,000$ ), and not known (cannot be estimated from the available data).

**Table 1. Adverse reactions in placebo-controlled clinical studies<sup>a</sup> and postmarketing experience**

System organ class	Very common	Common <sup>*</sup>	Uncommon <sup>**</sup>	Rare
<i>Infections and infestations</i>		Vulvovaginitis, balanitis and related genital infections <sup>*,b,c</sup> Urinary tract infection <sup>*,b,d</sup>	Fungal infection <sup>**</sup>	
<i>Metabolism and</i>	Hypoglycaemia		Volume	Diabetic

<b>System organ class</b>	<b>Very common</b>	<b>Common*</b>	<b>Uncommon**</b>	<b>Rare</b>
<i>nutrition disorders</i>	(when used with SU or insulin) <sup>b</sup>		depletion <sup>b,c</sup> Thirst**	ketoacidosis <sup>i</sup>
<i>Nervous system disorders</i>		Dizziness		
<i>Gastrointestinal disorders</i>			Constipation** Dry mouth**	
<i>Skin and subcutaneous tissue disorders</i>		Rash <sup>j</sup>		
<i>Musculoskeletal and connective tissue disorders</i>		Back pain*		
<i>Renal and urinary disorders</i>		Dysuria Polyuria <sup>*,f</sup>	Nocturia** Renal impairment <sup>**,b</sup>	
<i>Reproductive system and breast disorders</i>			Vulvovaginal pruritus** Pruritus genital**	
<i>Investigations</i>		Haematocrit increased <sup>g</sup> Creatinine renal clearance decreased <sup>b</sup> Dyslipidaemia <sup>h</sup>	Blood creatinine increased <sup>**,b</sup> Blood urea increased** Weight decreased**	

<sup>a</sup>The table shows up to 24-week (short-term) data regardless of glycaemic rescue.

<sup>b</sup>See corresponding subsection below for additional information.

<sup>c</sup>Vulvovaginitis, balanitis and related genital infections includes, e.g. the predefined preferred terms: vulvovaginal mycotic infection, vaginal infection, balanitis, genital infection fungal, vulvovaginal candidiasis, vulvovaginitis, balanitis candida, genital candidiasis, genital infection, genital infection male, penile infection, vulvitis, vaginitis bacterial, vulval abscess.

<sup>d</sup>Urinary tract infection includes the following preferred terms, listed in order of frequency reported: urinary tract infection, cystitis, Escherichia urinary tract infection, genitourinary tract infection, pyelonephritis, trigonitis, urethritis, kidney infection and prostatitis.

<sup>e</sup>Volume depletion includes, e.g. the predefined preferred terms: dehydration, hypovolaemia, hypotension.

<sup>f</sup>Polyuria includes the preferred terms: pollakiuria, polyuria, urine output increased.

<sup>g</sup>Mean changes from baseline in haematocrit were 2.30% for dapagliflozin 10 mg versus -0.33% for placebo. Haematocrit values >55% were reported in 1.3% of the subjects treated with dapagliflozin 10 mg versus 0.4% of placebo subjects.

<sup>h</sup>Mean percent change from baseline for dapagliflozin 10 mg versus placebo, respectively, was: total cholesterol 2.5% versus 0.0%; HDL cholesterol 6.0% versus 2.7%; LDL cholesterol 2.9% versus -1.0%; triglycerides -2.7% versus -0.7%.

<sup>i</sup>See section 4.4

<sup>j</sup>Adverse reaction was identified through postmarketing surveillance. Rash includes the following preferred terms, listed in order of frequency in clinical trials: rash, rash generalised, rash pruritic, rash macular, rash maculo-papular, rash pustular, rash vesicular, and rash erythematous. In active- and placebo-controlled clinical trials (dapagliflozin, N=5936, All control, N=3403), the frequency of rash was similar for dapagliflozin (1.4%) and all control (1.4%), respectively.

\*Reported in ≥ 2% of subjects and ≥ 1% more and at least 3 more subjects treated with dapagliflozin 10 mg compared to placebo.



\*\*Reported by the investigator as possibly related, probably related or related to study treatment and reported in  $\geq 0.2\%$  of subjects and  $\geq 0.1\%$  more and at least 3 more subjects treated with dapagliflozin 10 mg compared to placebo.

### Description of selected adverse reactions

#### Hypoglycaemia

The frequency of hypoglycaemia depended on the type of background therapy used in each study.

For studies of dapagliflozin in monotherapy, as add-on to metformin or as add-on to sitagliptin (with or without metformin), the frequency of minor episodes of hypoglycaemia was similar ( $< 5\%$ ) between treatment groups, including placebo up to 102 weeks of treatment. Across all studies, major events of hypoglycaemia were uncommon and comparable between the groups treated with dapagliflozin or placebo. Studies with add-on sulphonylurea and add-on insulin therapies had higher rates of hypoglycaemia (see section 4.5).

In an add-on to glimepiride study, at Weeks 24 and 48, minor episodes of hypoglycaemia were reported more frequently in the group treated with dapagliflozin 10 mg plus glimepiride (6.0% and 7.9%, respectively) than in the placebo plus glimepiride group (2.1% and 2.1%, respectively).

In an add-on to insulin study, episodes of major hypoglycaemia were reported in 0.5% and 1.0% of subjects treated with dapagliflozin 10 mg plus insulin at Weeks 24 and 104, respectively, and in 0.5% of subjects treated with placebo plus insulin groups at Weeks 24 and 104. At Weeks 24 and 104, minor episodes of hypoglycaemia were reported, respectively, in 40.3% and 53.1% of subjects who received dapagliflozin 10 mg plus insulin and in 34.0% and 41.6% of the subjects who received placebo plus insulin.

In an add-on to metformin and a sulphonylurea study, up to 24 weeks, no episodes of major hypoglycaemia were reported. Minor episodes of hypoglycaemia were reported in 12.8% of subjects who received dapagliflozin 10 mg plus metformin and a sulphonylurea and in 3.7% of subjects who received placebo plus metformin and a sulphonylurea.

#### Volume depletion

Reactions related to volume depletion (including, reports of dehydration, hypovolaemia or hypotension) were reported in 1.1% and 0.7% of subjects who received dapagliflozin 10 mg and placebo, respectively; serious reactions occurred in  $< 0.2\%$  of subjects balanced between dapagliflozin 10 mg and placebo (see section 4.4).

#### Vulvovaginitis, balanitis and related genital infections

Vulvovaginitis, balanitis and related genital infections were reported in 5.5% and 0.6% of subjects who received dapagliflozin 10 mg and placebo, respectively. Most infections were mild to moderate, and subjects responded to an initial course of standard treatment and rarely resulted in discontinuation from dapagliflozin treatment. These infections were more frequent in females (8.4% and 1.2% for dapagliflozin and placebo, respectively), and subjects with a prior history were more likely to have a recurrent infection.

#### Urinary tract infections

Urinary tract infections were more frequently reported for dapagliflozin 10 mg compared to placebo (4.7% versus 3.5%, respectively; see section 4.4). Most infections were mild to moderate, and subjects responded to an initial course of standard treatment and rarely resulted in discontinuation from dapagliflozin treatment. These infections were more frequent in females, and subjects with a prior history were more likely to have a recurrent infection.

#### Increased creatinine

Adverse reactions related to increased creatinine were grouped (e.g. decreased renal creatinine clearance, renal impairment, increased blood creatinine and decreased glomerular filtration rate). This grouping of reactions was reported in 3.2% and 1.8% of patients who received dapagliflozin 10 mg and placebo, respectively. In patients with normal renal function or mild renal impairment (baseline

eGFR  $\geq$  60 ml/min/1.73 m<sup>2</sup>) this grouping of reactions were reported in 1.3% and 0.8% of patients who received dapagliflozin 10 mg and placebo, respectively. These reactions were more common in patients with baseline eGFR  $\geq$  30 and  $<$  60 ml/min/1.73 m<sup>2</sup> (18.5% dapagliflozin 10 mg vs 9.3% placebo).

Further evaluation of patients who had renal-related adverse events showed that most had serum creatinine changes of  $\leq$  0.5 mg/dl from baseline. The increases in creatinine were generally transient during continuous treatment or reversible after discontinuation of treatment.

#### Parathyroid hormone (PTH)

Small increases in serum PTH levels were observed with increases being larger in subjects with higher baseline PTH concentrations. Bone mineral density measurements in patients with normal or mildly impaired renal function did not indicate bone loss over a treatment period of two years.

#### Malignancies

During clinical trials, the overall proportion of subjects with malignant or unspecified tumours was similar between those treated with dapagliflozin (1.50%) and placebo/comparator (1.50%), and there was no carcinogenicity or mutagenicity signal in animal data (see section 5.3). When considering the cases of tumours occurring in the different organ systems, the relative risk associated with dapagliflozin was above 1 for some tumours (bladder, prostate, breast) and below 1 for others (e.g. blood and lymphatic, ovary, renal tract), not resulting in an overall increased tumour risk associated with dapagliflozin. The increased/decreased risk was not statistically significant in any of the organ systems. Considering the lack of tumour findings in non-clinical studies as well as the short latency between first drug exposure and tumour diagnosis, a causal relationship is considered unlikely. Since the numerical imbalance of breast, bladder and prostate tumours must be considered with caution, it will be further investigated in post-authorisation studies.

#### Special populations

##### Elderly ( $\geq$ 65 years)

In subjects  $\geq$  65 years of age, adverse reactions related to renal impairment or failure were reported in 7.7% of subjects treated with dapagliflozin and 3.8% of subjects treated with placebo (see section 4.4). The most commonly reported adverse reaction related to renal function was increased serum creatinine. The majority of these reactions were transient and reversible. In subjects  $\geq$  65 years of age, adverse reactions of volume depletion, most commonly reported as hypotension, were reported in 1.7% and 0.8% of dapagliflozin-treated subjects and placebo-treated subjects, respectively (see section 4.4).

#### 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**

Dapagliflozin did not show any toxicity in healthy subjects at single oral doses up to 500 mg (50 times the maximum recommended human dose). These subjects had detectable glucose in the urine for a dose-related period of time (at least 5 days for the 500 mg dose), with no reports of dehydration, hypotension or electrolyte imbalance, and with no clinically meaningful effect on QTc interval. The incidence of hypoglycaemia was similar to placebo. In clinical studies where once-daily doses of up to 100 mg (10 times the maximum recommended human dose) were administered for 2 weeks in healthy subjects and type 2 diabetes subjects, the incidence of hypoglycaemia was slightly higher than placebo and was not dose-related. Rates of adverse events including dehydration or hypotension were similar to placebo, and there were no clinically meaningful dose-related changes in laboratory parameters, including serum electrolytes and biomarkers of renal function.

In the event of an overdose, appropriate supportive treatment should be initiated as dictated by the patient's clinical status. The removal of dapagliflozin by haemodialysis has not been studied.

## 5. PHARMACOLOGICAL PROPERTIES

### 5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Drugs used in diabetes, Sodium-glucose co-transporter 2 (SGLT2) inhibitors, ATC code: A10BK01

#### Mechanism of action

Dapagliflozin is a highly potent ( $K_i$ : 0.55 nM), selective and reversible inhibitor of SGLT2.

The SGLT2 is selectively expressed in the kidney with no expression detected in more than 70 other tissues including liver, skeletal muscle, adipose tissue, breast, bladder and brain. SGLT2 is the predominant transporter responsible for reabsorption of glucose from the glomerular filtrate back into the circulation. Despite the presence of hyperglycaemia in type 2 diabetes, reabsorption of filtered glucose continues. Dapagliflozin improves both fasting and post-prandial plasma glucose levels by reducing renal glucose reabsorption leading to urinary glucose excretion. This glucose excretion (glucuretic effect) is observed after the first dose, is continuous over the 24-hour dosing interval and is sustained for the duration of treatment. The amount of glucose removed by the kidney through this mechanism is dependent upon the blood glucose concentration and GFR. Dapagliflozin does not impair normal endogenous glucose production in response to hypoglycaemia. Dapagliflozin acts independently of insulin secretion and insulin action. Improvement in homeostasis model assessment for beta cell function (HOMA beta-cell) has been observed in clinical studies with Forxiga.

Urinary glucose excretion (glucuresis) induced by dapagliflozin is associated with caloric loss and reduction in weight. Inhibition of glucose and sodium co-transport by dapagliflozin is also associated with mild diuresis and transient natriuresis.

Dapagliflozin does not inhibit other glucose transporters important for glucose transport into peripheral tissues and is > 1,400 times more selective for SGLT2 versus SGLT1, the major transporter in the gut responsible for glucose absorption.

#### Pharmacodynamic effects

Increases in the amount of glucose excreted in the urine were observed in healthy subjects and in subjects with type 2 diabetes mellitus following the administration of dapagliflozin. Approximately 70 g of glucose was excreted in the urine per day (corresponding to 280 kcal/day) at a dapagliflozin dose of 10 mg/day in subjects with type 2 diabetes mellitus for 12 weeks. Evidence of sustained glucose excretion was seen in subjects with type 2 diabetes mellitus given dapagliflozin 10 mg/day for up to 2 years.

This urinary glucose excretion with dapagliflozin also results in osmotic diuresis and increases in urinary volume in subjects with type 2 diabetes mellitus. Urinary volume increases in subjects with type 2 diabetes mellitus treated with dapagliflozin 10 mg were sustained at 12 weeks and amounted to approximately 375 ml/day. The increase in urinary volume was associated with a small and transient increase in urinary sodium excretion that was not associated with changes in serum sodium concentrations.

Urinary uric acid excretion was also increased transiently (for 3-7 days) and accompanied by a sustained reduction in serum uric acid concentration. At 24 weeks, reductions in serum uric acid concentrations ranged from -48.3 to -18.3 micromoles/l (-0.87 to -0.33 mg/dl).

#### Clinical efficacy and safety

Fourteen double-blind, randomised, controlled clinical trials were conducted with 7,056 subjects with type 2 diabetes to evaluate the efficacy and safety of Forxiga; 4,737 subjects in these studies were

treated with dapagliflozin. Twelve studies had a treatment period of 24 weeks duration, 8 with long-term extensions ranging from 24 to 80 weeks (up to a total study duration of 104 weeks), one study had a 28-week treatment period, and one study was 52 weeks in duration with long-term extensions of 52 and 104 weeks (total study duration of 208 weeks). Mean duration of diabetes ranged from 1.4 to 16.9 years. Fifty percent (50%) had mild renal impairment and 11% had moderate renal impairment. Fifty-one percent (51%) of the subjects were men, 84% were White, 8% were Asian, 4% were Black and 4% were of other racial groups. Eighty-one percent (81%) of the subjects had a body mass index (BMI)  $\geq$  27. Furthermore, two 12-week, placebo-controlled studies were conducted in patients with inadequately controlled type 2 diabetes and hypertension.

### Glycaemic control

#### *Monotherapy*

A double-blind, placebo-controlled study of 24-week duration (with an additional extension period) was conducted to evaluate the safety and efficacy of monotherapy with Forxiga in subjects with inadequately controlled type 2 diabetes mellitus. Once-daily treatment with dapagliflozin resulted in statistically significant ( $p < 0.0001$ ) reductions in HbA1c compared to placebo (Table 2).

In the extension period, HbA1c reductions were sustained through Week 102 (-0.61%, and -0.17% adjusted mean change from baseline for dapagliflozin 10 mg and placebo, respectively).

**Table 2. Results at Week 24 (LOCF<sup>a</sup>) of a placebo-controlled study of dapagliflozin as monotherapy**

	Monotherapy	
	Dapagliflozin 10 mg	Placebo
<b>N<sup>b</sup></b>	70	75
<b>HbA1c (%)</b>		
<b>Baseline (mean)</b>	8.01	7.79
Change from baseline <sup>c</sup>	-0.89	-0.23
Difference from placebo <sup>c</sup> (95% CI)	-0.66* (-0.96, -0.36)	
<b>Subjects (%) achieving: HbA1c &lt; 7%</b>		
Adjusted for baseline	50.8 <sup>§</sup>	31.6
<b>Body weight (kg)</b>		
Baseline (mean)	94.13	88.77
Change from baseline <sup>c</sup>	-3.16	-2.19
Difference from placebo <sup>c</sup> (95% CI)	-0.97 (-2.20, 0.25)	

<sup>a</sup>LOCF: Last observation (prior to rescue for rescued subjects) carried forward

<sup>b</sup>All randomised subjects who took at least one dose of double-blind study medication during the short-term double-blind period

<sup>c</sup>Least squares mean adjusted for baseline value

\*p-value < 0.0001 versus placebo

<sup>§</sup>Not evaluated for statistical significance as a result of the sequential testing procedure for secondary end points

#### *Add-on combination therapy*

In a 52-week, active-controlled non-inferiority study (with 52- and 104-week extension periods), Forxiga was evaluated as add-on therapy to metformin compared with a sulphonylurea (glipizide) as add-on therapy to metformin in subjects with inadequate glycaemic control (HbA1c > 6.5% and  $\leq$  10%). The results showed a similar mean reduction in HbA1c from baseline to Week 52, compared to glipizide, thus demonstrating non-inferiority (Table 3). At Week 104, adjusted mean change from baseline in HbA1c was -0.32% for dapagliflozin and -0.14% for glipizide. At Week 208, adjusted mean change from baseline in HbA1c was -0.10% for dapagliflozin and 0.20% for glipizide. At 52, 104 and 208 weeks, a significantly lower proportion of subjects in the group treated with dapagliflozin (3.5%, 4.3% and 5.0%, respectively) experienced at least one event of hypoglycaemia compared to the group treated with glipizide (40.8%, 47.0% and 50.0%, respectively). The proportion of subjects

remaining in the study at Week 104 and Week 208 was 56.2% and 39.7% for the group treated with dapagliflozin and 50.0% and 34.6% for the group treated with glipizide.

**Table 3. Results at Week 52 (LOCF<sup>a</sup>) in an active-controlled study comparing dapagliflozin to glipizide as add-on to metformin**

<b>Parameter</b>	<b>Dapagliflozin + metformin</b>	<b>Glipizide + metformin</b>
<b>N<sup>b</sup></b>	400	401
<b>HbA1c (%)</b>		
Baseline (mean)	7.69	7.74
Change from baseline <sup>c</sup>	-0.52	-0.52
Difference from glipizide + metformin <sup>c</sup> (95% CI)	0.00 <sup>d</sup> (-0.11, 0.11)	
<b>Body weight (kg)</b>		
Baseline (mean)	88.44	87.60
Change from baseline <sup>c</sup>	-3.22	1.44
Difference from glipizide + metformin <sup>c</sup> (95% CI)	-4.65* (-5.14, -4.17)	

<sup>a</sup>LOCF: Last observation carried forward

<sup>b</sup>Randomised and treated subjects with baseline and at least 1 post-baseline efficacy measurement

<sup>c</sup>Least squares mean adjusted for baseline value

<sup>d</sup>Non-inferior to glipizide + metformin

\*p-value < 0.0001

Dapagliflozin as an add-on with either metformin, glimepiride, metformin and a sulphonylurea, sitagliptin (with or without metformin) or insulin resulted in statistically significant reductions in HbA1c at 24 weeks compared with subjects receiving placebo (p < 0.0001; Tables 4, 5 and 6).

The reductions in HbA1c observed at Week 24 were sustained in add-on combination studies (glimepiride and insulin) with 48-week data (glimepiride) and up to 104-week data (insulin). At Week 48 when added to sitagliptin (with or without metformin), the adjusted mean change from baseline for dapagliflozin 10 mg and placebo was -0.30% and 0.38%, respectively. For the add-on to metformin study, HbA1c reductions were sustained through Week 102 (-0.78% and 0.02% adjusted mean change from baseline for 10 mg and placebo, respectively). At Week 104 for insulin (with or without additional oral glucose-lowering medicinal products), the HbA1c reductions were -0.71% and -0.06% adjusted mean change from baseline for dapagliflozin 10 mg and placebo, respectively. At Weeks 48 and 104, the insulin dose remained stable compared to baseline in subjects treated with dapagliflozin 10 mg at an average dose of 76 IU/day. In the placebo group there was a mean increase of 10.5 IU/day and 18.3 IU/day from baseline (mean average dose of 84 and 92 IU/day) at Weeks 48 and 104, respectively. The proportion of subjects remaining in the study at Week 104 was 72.4% for the group treated with dapagliflozin 10 mg and 54.8% for the placebo group.

**Table 4. Results of 24-week (LOCF<sup>a</sup>) placebo-controlled studies of dapagliflozin in add-on combination with metformin or sitagliptin (with or without metformin)**

	Add-on combination			
	Metformin <sup>1</sup>		DPP-4 Inhibitor (sitagliptin <sup>2</sup> ) ± Metformin <sup>1</sup>	
	Dapagliflozin 10 mg	Placebo	Dapagliflozin 10 mg	Placebo
<b>N<sup>b</sup></b>	135	137	223	224
<b>HbA1c (%)</b>				
Baseline (mean)	7.92	8.11	7.90	7.97
Change from baseline <sup>c</sup>	-0.84	-0.30	-0.45	0.04
Difference from placebo <sup>c</sup>	-0.54*		-0.48*	
(95% CI)	(-0.74, -0.34)		(-0.62, -0.34)	
<b>Subjects (%) achieving: HbA1c &lt; 7%</b>				
Adjusted for baseline	40.6**	25.9		
<b>Body weight (kg)</b>				
Baseline (mean)	86.28	87.74	91.02	89.23
Change from baseline <sup>c</sup>	-2.86	-0.89	-2.14	-0.26
Difference from placebo <sup>c</sup>	-1.97*		-1.89*	
(95% CI)	(-2.63, -1.31)		(-2.37, -1.40)	

<sup>1</sup>Metformin ≥ 1500 mg/day;

<sup>2</sup>sitagliptin 100 mg/day

<sup>a</sup>LOCF: Last observation (prior to rescue for rescued subjects) carried forward

<sup>b</sup>All randomised subjects who took at least one dose of double-blind study medicinal product during the short-term double-blind period

<sup>c</sup>Least squares mean adjusted for baseline value

\*p-value < 0.0001 versus placebo + oral glucose-lowering medicinal product

\*\*p-value < 0.05 versus placebo + oral glucose-lowering medicinal product

**Table 5. Results of 24-week placebo-controlled studies of dapagliflozin in add-on combination with sulphonylurea (glimepiride) or metformin and a sulphonylurea**

	Add-on combination			
	Sulphonylurea (glimepiride <sup>1</sup> )		Sulphonylurea + Metformin <sup>2</sup>	
	Dapagliflozin 10 mg	Placebo	Dapagliflozin 10 mg	Placebo
<b>N<sup>a</sup></b>	151	145	108	108
<b>HbA1c (%)<sup>b</sup></b>				
Baseline (mean)	8.07	8.15	8.08	8.24
Change from baseline <sup>c</sup>	-0.82	-0.13	-0.86	-0.17
Difference from placebo <sup>c</sup> (95% CI)	-0.68* (-0.86, -0.51)		-0.69* (-0.89, -0.49)	
<b>Subjects (%) achieving: HbA1c &lt; 7% (LOCF)<sup>d</sup></b>				
Adjusted for baseline	31.7*	13.0	31.8*	11.1
<b>Body weight (kg) (LOCF)<sup>d</sup></b>				
Baseline (mean)	80.56	80.94	88.57	90.07
Change from baseline <sup>c</sup>	-2.26	-0.72	-2.65	-0.58
Difference from placebo <sup>c</sup> (95% CI)	-1.54* (-2.17, -0.92)		-2.07* (-2.79, -1.35)	

<sup>1</sup>glimepiride 4 mg/day;

<sup>2</sup>Metformin (immediate- or extended-release formulations)  $\geq$ 1500 mg/day plus maximum tolerated dose, which must be at least half maximum dose, of a sulphonylurea for at least 8 weeks prior to enrolment.

<sup>a</sup>Randomised and treated patients with baseline and at least 1 post-baseline efficacy measurement.

<sup>b</sup>Columns 1 and 2, HbA1c analysed using LOCF (see footnote d); Columns 3 and 4, HbA1c analysed using LRM (see footnote e)

<sup>c</sup>Least squares mean adjusted for baseline value

<sup>d</sup>LOCF: Last observation (prior to rescue for rescued subjects) carried forward

<sup>e</sup>LRM: Longitudinal repeated measures analysis

\*p-value < 0.0001 versus placebo + oral glucose-lowering medicinal product(s)

**Table 6. Results at Week 24 (LOCF<sup>a</sup>) in a placebo-controlled study of dapagliflozin in combination with insulin (alone or with oral glucose-lowering medicinal products)**

Parameter	Dapagliflozin 10 mg + insulin ± oral glucose-lowering medicinal products <sup>2</sup>	Placebo + insulin ± oral glucose-lowering medicinal products <sup>2</sup>
<b>N<sup>b</sup></b>	194	193
<b>HbA1c (%)</b>		
Baseline (mean)	8.58	8.46
Change from baseline <sup>c</sup>	-0.90	-0.30
Difference from placebo <sup>c</sup> (95% CI)	-0.60* (-0.74, -0.45)	
<b>Body weight (kg)</b>		
Baseline (mean)	94.63	94.21
Change from baseline <sup>c</sup>	-1.67	0.02
Difference from placebo <sup>c</sup> (95% CI)	-1.68* (-2.19, -1.18)	
<b>Mean daily insulin dose (IU)<sup>1</sup></b>		
Baseline (mean)	77.96	73.96
Change from baseline <sup>c</sup>	-1.16	5.08
Difference from placebo <sup>c</sup> (95% CI)	-6.23* (-8.84, -3.63)	
Subjects with mean daily insulin dose reduction of at least 10% (%)	19.7**	11.0

<sup>a</sup>LOCF: Last observation (prior to or on the date of the first insulin up-titration, if needed) carried forward

<sup>b</sup>All randomised subjects who took at least one dose of double-blind study medicinal product during the short-term double-blind period

<sup>c</sup>Least squares mean adjusted for baseline value and presence of oral glucose-lowering medicinal product

\*p-value < 0.0001 versus placebo + insulin ± oral glucose-lowering medicinal product

\*\*p-value < 0.05 versus placebo + insulin ± oral glucose-lowering medicinal product

<sup>1</sup>Up-titration of insulin regimens (including short-acting, intermediate, and basal insulin) was only allowed if subjects met pre-defined FPG criteria.

<sup>2</sup>Fifty percent of subjects were on insulin monotherapy at baseline; 50% were on 1 or 2 oral glucose-lowering medicinal product(s) in addition to insulin: Of this latter group, 80% were on metformin alone, 12% were on metformin plus sulphonylurea therapy, and the rest were on other oral glucose-lowering medicinal products.

#### *In combination with metformin in drug-naïve patients*

A total of 1,236 drug-naïve patients with inadequately controlled type 2 diabetes (HbA1c ≥ 7.5% and ≤ 12%) participated in two active-controlled studies of 24 weeks duration to evaluate the efficacy and safety of dapagliflozin (5 mg or 10 mg) in combination with metformin in drug-naïve patients versus therapy with the monocomponents.

Treatment with dapagliflozin 10 mg in combination with metformin (up to 2000 mg per day) provided significant improvements in HbA1c compared to the individual components (Table 7), and led to greater reductions in fasting plasma glucose (FPG) (compared to the individual components) and body weight (compared to metformin).



**Table 7: Results at Week 24 (LOCF<sup>a</sup>) in an active-controlled study of dapagliflozin and metformin combination therapy in drug-naïve patients**

	Dapagliflozin 10 mg +	Dapagliflozin 10 mg	Metformin
Parameter	Metformin		
N <sup>b</sup>	211 <sup>b</sup>	219 <sup>b</sup>	208 <sup>b</sup>
<b>HbA1c (%)</b>			
Baseline (mean)	9.10	9.03	9.03
Change from baseline <sup>c</sup>	-1.98	-1.45	-1.44
Difference from dapagliflozin <sup>c</sup> (95% CI)	-0.53* (-0.74, -0.32)		
Difference from metformin <sup>c</sup> (95% CI)	-0.54* (-0.75, -0.33)	-0.01 (-0.22, 0.20)	

<sup>a</sup>LOCF: last observation (prior to rescue for rescued patients) carried forward.

<sup>b</sup>All randomised patients who took at least one dose of double-blind study medication during the short-term double-blind period.

<sup>c</sup>Least squares mean adjusted for baseline value.

\*p-value <0.0001.

*Combination therapy with prolonged-release exenatide*

In a 28-week, double-blind, active comparator-controlled study, the combination of dapagliflozin and prolonged-release exenatide (a GLP-1 receptor agonist) was compared to dapagliflozin alone and prolonged-release exenatide alone in subjects with inadequate glycaemic control on metformin alone (HbA1c  $\geq$  8% and  $\leq$  12%). All treatment groups had a reduction in HbA1c compared to baseline. The combination treatment with dapagliflozin 10 mg and prolonged-release exenatide group showed superior reductions in HbA1c from baseline compared to dapagliflozin alone and prolonged-release exenatide alone (Table 8).

**Table 8. Results of one 28-week trial of dapagliflozin and prolonged-release exenatide versus dapagliflozin alone and prolonged-release exenatide alone, in combination with metformin (intent to treat patients)**

	Dapagliflozin 10 mg QD +	Dapagliflozin 10 mg QD +	Prolonged-release exenatide 2 mg QW +
Parameter	Prolonged-release exenatide 2 mg QW	Placebo QW	Placebo QD
N	228	230	227
<b>HbA1c (%)</b>			
Baseline (mean)	9.29	9.25	9.26
Change from baseline <sup>a</sup>	-1.98	-1.39	-1.60
Mean difference in change from baseline between combination and single active agent (95% CI)		-0.59* (-0.84, -0.34)	-0.38** (-0.63, -0.13)
<b>Subjects (%) achieving HbA1c &lt; 7%</b>	44.7	19.1	26.9
<b>Body weight (kg)</b>			
Baseline (mean)	92.13	90.87	89.12
Change from baseline <sup>a</sup>	-3.55	-2.22	-1.56
Mean difference in change from baseline between combination and single active agent (95% CI)		-1.33* (-2.12, -0.55)	-2.00* (-2.79, -1.20)

QD=once daily, QW=once weekly, N=number of patients, CI=confidence interval.

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<sup>a</sup>Adjusted least squares means (LS Means) and treatment group difference(s) in the change from baseline values at Week 28 are modelled using a mixed model with repeated measures (MMRM) including treatment, region, baseline HbA1c stratum (< 9.0% or ≥ 9.0%), week, and treatment by week interaction as fixed factors, and baseline value as a covariate.

\*p < 0.001, \*\*p < 0.01.

P-values are all adjusted p-values for multiplicity.

Analyses exclude measurements post rescue therapy and post premature discontinuation of study medicinal product.

### Fasting plasma glucose

Treatment with dapagliflozin 10 mg as a monotherapy or as an add-on to either metformin, glimepiride, metformin and a sulphonylurea, sitagliptin (with or without metformin) or insulin resulted in statistically significant reductions in FPG (-1.90 to -1.20 mmol/l [-34.2 to -21.7 mg/dl]) compared to placebo (-0.33 to 0.21 mmol/l [-6.0 to 3.8 mg/dl]). This effect was observed at Week 1 of treatment and maintained in studies extended through Week 104.

Combination therapy of dapagliflozin 10 mg and prolonged-release exenatide resulted in significantly greater reductions in FPG at Week 28: -3.66 mmol/l (-65.8 mg/dl), compared to -2.73 mmol/l (-49.2 mg/dl) for dapagliflozin alone (p < 0.001) and -2.54 mmol/l (-45.8 mg/dl) for exenatide alone (p < 0.001).

In a dedicated study in diabetic patients with an eGFR ≥ 45 to < 60 mL/min/1.73 m<sup>2</sup>, treatment with dapagliflozin demonstrated reductions in FPG at Week 24: -1.19 mmol/L (-21.46 mg/dL) compared to -0.27 mmol/L (-4.87 mg/dL) for placebo (p=0.001).

### Post-prandial glucose

Treatment with dapagliflozin 10 mg as an add-on to glimepiride resulted in statistically significant reductions in 2-hour post-prandial glucose at 24 weeks that were maintained up to Week 48.

Treatment with dapagliflozin 10 mg as an add-on to sitagliptin (with or without metformin) resulted in reductions in 2-hour post-prandial glucose at 24 weeks that were maintained up to Week 48.

Combination therapy of dapagliflozin 10 mg and prolonged-release exenatide resulted in significantly greater reductions in 2-hour post-prandial glucose at Week 28 compared to either agent alone.

### Body weight

Dapagliflozin 10 mg as an add-on to metformin, glimepiride, metformin and a sulphonylurea, sitagliptin (with or without metformin) or insulin resulted in statistically significant body weight reduction at 24 weeks (p < 0.0001, Tables 4 and 5). These effects were sustained in longer-term trials. At 48 weeks, the difference for dapagliflozin as add-on to sitagliptin (with or without metformin) compared with placebo was -2.22 kg. At 102 weeks, the difference for dapagliflozin as add-on to metformin compared with placebo, or as add-on to insulin compared with placebo was -2.14 and -2.88 kg, respectively.

As an add-on therapy to metformin in an active-controlled non-inferiority study, dapagliflozin resulted in a statistically significant body weight reduction compared with glipizide of -4.65 kg at 52 weeks (p < 0.0001, Table 3) that was sustained at 104 and 208 weeks (-5.06 kg and -4.38 kg, respectively).

The combination of dapagliflozin 10 mg and prolonged-release exenatide demonstrated significantly greater weight reductions compared to either agent alone (Table 8).

A 24-week study in 182 diabetic subjects using dual energy X-ray absorptiometry (DXA) to evaluate body composition demonstrated reductions with dapagliflozin 10 mg plus metformin compared with placebo plus metformin, respectively, in body weight and body fat mass as measured by DXA rather than lean tissue or fluid loss. Treatment with Forxiga plus metformin showed a numerical decrease in visceral adipose tissue compared with placebo plus metformin treatment in a magnetic resonance imaging substudy.

### Blood pressure

In a pre-specified pooled analysis of 13 placebo-controlled studies, treatment with dapagliflozin 10 mg resulted in a systolic blood pressure change from baseline of -3.7 mmHg and diastolic blood pressure of -1.8 mmHg versus -0.5 mmHg systolic and -0.5 mmHg diastolic blood pressure for placebo group at Week 24. Similar reductions were observed up to 104 weeks.

Combination therapy of dapagliflozin 10 mg and prolonged-release exenatide resulted in a significantly greater reduction in systolic blood pressure at Week 28 (-4.3 mmHg) compared to dapagliflozin alone (-1.8 mmHg,  $p < 0.05$ ) and prolonged-release exenatide alone (-1.2 mmHg,  $p < 0.01$ ).

In two 12-week, placebo-controlled studies a total of 1,062 patients with inadequately controlled type 2 diabetes and hypertension (despite pre-existing stable treatment with an ACE-I or ARB in one study and an ACE-I or ARB plus one additional antihypertensive treatment in another study) were treated with dapagliflozin 10 mg or placebo. At Week 12 for both studies, dapagliflozin 10 mg plus usual antidiabetic treatment provided improvement in HbA1c and decreased the placebo-corrected systolic blood pressure on average by 3.1 and 4.3 mmHg, respectively.

In a dedicated study in diabetic patients with an  $eGFR \geq 45$  to  $< 60$  mL/min/1.73 m<sup>2</sup>, treatment with dapagliflozin demonstrated reductions in seated systolic blood pressure at Week 24: -4.8 mmHg compared to -1.7 mmHg for placebo ( $p < 0.05$ ).

### Cardiovascular safety

A meta-analysis of cardiovascular events in the clinical program was performed. In the clinical program, 34.4% of subjects had a history of cardiovascular disease (excluding hypertension) at baseline and 67.9% had hypertension. Cardiovascular episodes were adjudicated by an independent adjudication committee. The primary end point was the time-to-first event of one of the following outcomes: cardiovascular death, stroke, myocardial infarction (MI) or hospitalisation for unstable angina. Primary episodes occurred at a rate of 1.62% per patient-year in subjects treated with dapagliflozin and 2.06% in comparator-treatment subjects, per patient-year. The hazard ratio comparing dapagliflozin to comparator was 0.79 (95% Confidence interval [CI]: 0.58, 1.07), indicating that in this analysis Forxiga is not associated with an increase in cardiovascular risk in patients with type 2 diabetes mellitus. Cardiovascular death, MI and stroke were observed with a hazard ratio of 0.77 (95% CI: 0.54, 1.10).

### Renal impairment

#### *Moderate renal impairment CKD 3A ( $eGFR \geq 45$ to $< 60$ mL/min/1.73 m<sup>2</sup>)*

The efficacy of dapagliflozin was assessed in a dedicated study in diabetic patients with an  $eGFR \geq 45$  to  $< 60$  mL/min/1.73 m<sup>2</sup> who had inadequate glycaemic control on usual care. Treatment with dapagliflozin resulted in reductions in HbA1c and body weight compared with placebo (Table 9).

**Table 9. Results at Week 24 of a placebo-controlled study of dapagliflozin in diabetic patients with an eGFR  $\geq$  45 to  $<$  60 mL/min/1.73 m<sup>2</sup>**

	Dapagliflozin <sup>a</sup> 10 mg	Placebo <sup>a</sup>
<b>N<sup>b</sup></b>	<b>159</b>	<b>161</b>
<b>HbA1c (%)</b>		
Baseline (mean)	8.35	8.03
Change from baseline <sup>b</sup>	-0.37	-0.03
Difference from placebo <sup>b</sup> (95% CI)	-0.34* (-0.53, -0.15)	
<b>Body weight (kg)</b>		
Baseline (mean)	92.51	88.30
Percent change from baseline <sup>c</sup>	-3.42	-2.02
Difference in percent change from placebo <sup>c</sup> (95% CI)	-1.43* (-2.15, -0.69)	

<sup>a</sup> Metformin or metformin hydrochloride were part of the usual care in 69.4% and 64.0% of the patients for the dapagliflozin and placebo groups, respectively.

<sup>b</sup> Least squares mean adjusted for baseline value

<sup>c</sup> Derived from least squares mean adjusted for baseline value

\* p<0.001

#### Patients with baseline HbA1c $\geq$ 9%

In a pre-specified analysis of subjects with baseline HbA1c  $\geq$  9.0%, treatment with dapagliflozin 10 mg resulted in statistically significant reductions in HbA1c at Week 24 as a monotherapy (adjusted mean change from baseline: -2.04% and 0.19% for dapagliflozin 10 mg and placebo, respectively) and as an add-on to metformin (adjusted mean change from baseline: -1.32% and -0.53% for dapagliflozin and placebo, respectively).

#### Paediatric population

The European Medicines Agency has deferred the obligation to submit the results of studies with dapagliflozin in one or more 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**

### Absorption

Dapagliflozin was rapidly and well absorbed after oral administration. Maximum dapagliflozin plasma concentrations ( $C_{max}$ ) were usually attained within 2 hours after administration in the fasted state. Geometric mean steady-state dapagliflozin  $C_{max}$  and  $AUC_{\tau}$  values following once daily 10 mg doses of dapagliflozin were 158 ng/ml and 628 ng h/ml, respectively. The absolute oral bioavailability of dapagliflozin following the administration of a 10 mg dose is 78%. Administration with a high-fat meal decreased dapagliflozin  $C_{max}$  by up to 50% and prolonged  $T_{max}$  by approximately 1 hour, but did not alter AUC as compared with the fasted state. These changes are not considered to be clinically meaningful. Hence, Forxiga can be administered with or without food.

### Distribution

Dapagliflozin is approximately 91% protein bound. Protein binding was not altered in various disease states (e.g. renal or hepatic impairment). The mean steady-state volume of distribution of dapagliflozin was 118 liters.

### Biotransformation

Dapagliflozin is extensively metabolised, primarily to yield dapagliflozin 3-O-glucuronide, which is an inactive metabolite. Dapagliflozin 3-O-glucuronide or other metabolites do not contribute to the glucose-lowering effects. The formation of dapagliflozin 3-O-glucuronide is mediated by UGT1A9, an enzyme present in the liver and kidney, and CYP-mediated metabolism was a minor clearance pathway in humans.

### Elimination

The mean plasma terminal half-life ( $t_{1/2}$ ) for dapagliflozin was 12.9 hours following a single oral dose of dapagliflozin 10 mg to healthy subjects. The mean total systemic clearance of dapagliflozin administered intravenously was 207 ml/min. Dapagliflozin and related metabolites are primarily eliminated via urinary excretion with less than 2% as unchanged dapagliflozin. After administration of a 50 mg [ $^{14}\text{C}$ ]-dapagliflozin dose, 96% was recovered, 75% in urine and 21% in faeces. In faeces, approximately 15% of the dose was excreted as parent drug.

### Linearity

Dapagliflozin exposure increased proportional to the increment in dapagliflozin dose over the range of 0.1 to 500 mg and its pharmacokinetics did not change with time upon repeated daily dosing for up to 24 weeks.

### Special populations

#### Renal impairment

At steady-state (20 mg once-daily dapagliflozin for 7 days), subjects with type 2 diabetes mellitus and mild, moderate or severe renal impairment (as determined by iohexol plasma clearance) had mean systemic exposures of dapagliflozin of 32%, 60% and 87% higher, respectively, than those of subjects with type 2 diabetes mellitus and normal renal function. The steady-state 24-hour urinary glucose excretion was highly dependent on renal function and 85, 52, 18 and 11 g of glucose/day was excreted by subjects with type 2 diabetes mellitus and normal renal function or mild, moderate or severe renal impairment, respectively. The impact of hemodialysis on dapagliflozin exposure is not known.

#### Hepatic impairment

In subjects with mild or moderate hepatic impairment (Child-Pugh classes A and B), mean  $C_{\max}$  and AUC of dapagliflozin were up to 12% and 36% higher, respectively, compared to healthy matched control subjects. These differences were not considered to be clinically meaningful. In subjects with severe hepatic impairment (Child-Pugh class C) mean  $C_{\max}$  and AUC of dapagliflozin were 40% and 67% higher than matched healthy controls, respectively.

#### Elderly ( $\geq 65$ years)

There is no clinically meaningful increase in exposure based on age alone in subjects up to 70 years old. However, an increased exposure due to age-related decrease in renal function can be expected. There are insufficient data to draw conclusions regarding exposure in patients > 70 years old.

#### Paediatric population

Pharmacokinetics in the paediatric population have not been studied.

#### Gender

The mean dapagliflozin  $\text{AUC}_{\text{ss}}$  in females was estimated to be about 22% higher than in males.

#### Race

There were no clinically relevant differences in systemic exposures between White, Black or Asian races.

#### Body weight

Dapagliflozin exposure was found to decrease with increased weight. Consequently, low-weight patients may have somewhat increased exposure and patients with high weight somewhat decreased exposure. However, the differences in exposure were not considered clinically meaningful.

## **5.3 Preclinical safety data**

Non-clinical data reveal no special hazard for humans based on conventional studies of safety pharmacology, repeated dose toxicity, genotoxicity, carcinogenic potential and fertility. Dapagliflozin did not induce tumours in either mice or rats at any of the doses evaluated in two-year carcinogenicity studies.

### Reproductive and developmental toxicity

Direct administration of dapagliflozin to weanling juvenile rats and indirect exposure during late pregnancy (time periods corresponding to the second and third trimesters of pregnancy with respect to human renal maturation) and lactation are each associated with increased incidence and/or severity of renal pelvic and tubular dilatations in progeny.

In a juvenile toxicity study, when dapagliflozin was dosed directly to young rats from postnatal day 21 until postnatal day 90, renal pelvic and tubular dilatations were reported at all dose levels; pup exposures at the lowest dose tested were  $\geq 15$  times the maximum recommended human dose. These findings were associated with dose-related increases in kidney weight and macroscopic kidney enlargement observed at all doses. The renal pelvic and tubular dilatations observed in juvenile animals did not fully reverse within the approximate 1-month recovery period.

In a separate study of pre- and postnatal development, maternal rats were dosed from gestation day 6 through postnatal day 21, and pups were indirectly exposed *in utero* and throughout lactation. (A satellite study was conducted to assess dapagliflozin exposures in milk and pups.) Increased incidence or severity of renal pelvic dilatation was observed in adult offspring of treated dams, although only at the highest dose tested (associated maternal and pup dapagliflozin exposures were 1,415 times and 137 times, respectively, the human values at the maximum recommended human dose). Additional developmental toxicity was limited to dose-related reductions in pup body weights, and observed only at doses  $\geq 15$  mg/kg/day (associated with pup exposures that are  $\geq 29$  times the human values at the maximum recommended human dose). Maternal toxicity was evident only at the highest dose tested, and limited to transient reductions in body weight and food consumption at dose. The no observed adverse effect level (NOAEL) for developmental toxicity, the lowest dose tested, is associated with a maternal systemic exposure multiple that is approximately 19 times the human value at the maximum recommended human dose.

In additional studies of embryo-foetal development in rats and rabbits, dapagliflozin was administered for intervals coinciding with the major periods of organogenesis in each species. Neither maternal nor developmental toxicities were observed in rabbits at any dose tested; the highest dose tested is associated with a systemic exposure multiple of approximately 1,191 times the maximum recommended human dose. In rats, dapagliflozin was neither embryo-lethal nor teratogenic at exposures up to 1,441 times the maximum recommended human dose.

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

#### Tablet core

Microcrystalline cellulose (E460i)  
Lactose, anhydrous  
Crospovidone (E1202)  
Silicon dioxide (E551)  
Magnesium stearate (E470b)

#### Film-coating

Polyvinyl alcohol (E1203)  
Titanium dioxide (E171)  
Macrogol 3350  
Talc (E553b)  
Iron oxide yellow (E172)

### **6.2 Incompatibilities**

Not applicable.

### **6.3 Shelf life**

3 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/Alu blister

Pack sizes of 14, 28 and 98 film-coated tablets in non-perforated calendar blisters

Pack sizes of 30x1 and 90x1 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**

AstraZeneca AB  
SE-151 85 Södertälje  
Sweden

## **8. MARKETING AUTHORISATION NUMBER(S)**

### Forxiga 5 mg film-coated tablets

EU/1/12/795/001 14 film-coated tablets

EU/1/12/795/002 28 film-coated tablets

EU/1/12/795/003 98 film-coated tablets

EU/1/12/795/004 30 x 1 (unit dose) film-coated tablets

EU/1/12/795/005 90 x 1 (unit dose) film-coated tablets

### Forxiga 10 mg film-coated tablets

EU/1/12/795/006 14 film-coated tablets

EU/1/12/795/007 28 film-coated tablets

EU/1/12/795/008 98 film-coated tablets

EU/1/12/795/009 30 x 1 (unit dose) film-coated tablets

EU/1/12/795/010 90 x 1 (unit dose) film-coated tablets

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

Date of first authorisation: 12 November 2012

Date of latest renewal: 28 August 2017

## **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

AstraZeneca GmbH  
Tinsdaler Weg 183  
22880 Wedel  
Germany

AstraZeneca UK Limited  
Silk Road Business Park  
Macclesfield  
SK10 2NA  
United Kingdom

Bristol-Myers Squibb S.r.l.  
Contrada Fontana del Ceraso  
IT-03012 Anagni (FR)  
Italy

The printed package leaflet of the medicinal product must state the name and address of the manufacturer responsible for the release of the concerned batch.

## **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.

## **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**

**OUTER CARTON 5 mg**

**1. NAME OF THE MEDICINAL PRODUCT**

Forxiga 5 mg film-coated tablets  
dapagliflozin

**2. STATEMENT OF ACTIVE SUBSTANCE(S)**

Each tablet contains dapagliflozin propanediol monohydrate equivalent to 5 mg dapagliflozin.

**3. LIST OF EXCIPIENTS**

Contains lactose. See package leaflet for further information.

**4. PHARMACEUTICAL FORM AND CONTENTS**

14 film-coated tablets  
28 film-coated tablets  
30x1 film-coated tablets  
90x1 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**

AstraZeneca AB  
SE-151 85 Södertälje  
Sweden

**12. MARKETING AUTHORISATION NUMBER(S)**

EU/1/12/795/001 14 film-coated tablets  
EU/1/12/795/002 28 film-coated tablets  
EU/1/12/795/003 98 film-coated tablets  
EU/1/12/795/004 30 x 1 (unit dose) film-coated tablets  
EU/1/12/795/005 90 x 1 (unit dose) film-coated tablets

**13. BATCH NUMBER**

Lot

**14. GENERAL CLASSIFICATION FOR SUPPLY**

**15. INSTRUCTIONS ON USE**

**16. INFORMATION IN BRAILLE**

forxiga 5 mg

**17. UNIQUE IDENTIFIER – 2D BARCODE**

2D barcode carrying the unique identifier included.

**18. UNIQUE IDENTIFIER – HUMAN READABLE DATA**

PC:  
SN:  
NN:

**PARTICULARS TO APPEAR ON THE OUTER PACKAGING**

**OUTER CARTON 10 mg**

**1. NAME OF THE MEDICINAL PRODUCT**

Forxiga 10 mg film-coated tablets  
dapagliflozin

**2. STATEMENT OF ACTIVE SUBSTANCE(S)**

Each tablet contains dapagliflozin propanediol monohydrate equivalent to 10 mg dapagliflozin.

**3. LIST OF EXCIPIENTS**

Contains lactose. See package leaflet for further information.

**4. PHARMACEUTICAL FORM AND CONTENTS**

14 film-coated tablets  
28 film-coated tablets  
30x1 film-coated tablets  
90x1 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**

AstraZeneca AB  
SE-151 85 Södertälje  
Sweden

**12. MARKETING AUTHORISATION NUMBER(S)**

EU/1/12/795/006 14 film-coated tablets  
EU/1/12/795/007 28 film-coated tablets  
EU/1/12/795/008 98 film-coated tablets  
EU/1/12/795/009 30 x 1 (unit dose) film-coated tablets  
EU/1/12/795/010 90 x 1 (unit dose) film-coated tablets

**13. BATCH NUMBER**

Lot

**14. GENERAL CLASSIFICATION FOR SUPPLY**

**15. INSTRUCTIONS ON USE**

**16. INFORMATION IN BRAILLE**

Forxiga 10 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**

**BLISTERS PERFORATED UNIT DOSE 5 mg**

**1. NAME OF THE MEDICINAL PRODUCT**

Forxiga 5 mg tablets  
dapagliflozin

**2. NAME OF THE MARKETING AUTHORISATION HOLDER**

AstraZeneca AB

**3. EXPIRY DATE**

EXP

**4. BATCH NUMBER**

Lot

**5. OTHER**



**MINIMUM PARTICULARS TO APPEAR ON BLISTERS OR STRIPS**

**BLISTERS PERFORATED UNIT DOSE 10 mg**

**1. NAME OF THE MEDICINAL PRODUCT**

Forxiga 10 mg tablets  
dapagliflozin

**2. NAME OF THE MARKETING AUTHORISATION HOLDER**

AstraZeneca AB

**3. EXPIRY DATE**

EXP

**4. BATCH NUMBER**

Lot

**5. OTHER**

**MINIMUM PARTICULARS TO APPEAR ON BLISTERS OR STRIPS**

**CALENDAR BLISTERS NON-PERFORATED 5 mg**

**1. NAME OF THE MEDICINAL PRODUCT**

Forxiga 5 mg tablets  
dapagliflozin

**2. NAME OF THE MARKETING AUTHORISATION HOLDER**

AstraZeneca AB

**3. EXPIRY DATE**

EXP

**4. BATCH NUMBER**

Lot

**5. OTHER**

Monday Tuesday Wednesday Thursday Friday Saturday Sunday

**MINIMUM PARTICULARS TO APPEAR ON BLISTERS OR STRIPS**

**CALENDAR BLISTERS NON-PERFORATED 10 mg**

**1. NAME OF THE MEDICINAL PRODUCT**

Forxiga 10 mg tablets  
dapagliflozin

**2. NAME OF THE MARKETING AUTHORISATION HOLDER**

AstraZeneca AB

**3. EXPIRY DATE**

EXP

**4. BATCH NUMBER**

Lot

**5. OTHER**

Monday Tuesday Wednesday Thursday Friday Saturday Sunday

**B. PACKAGE LEAFLET**

## Package leaflet: Information for the patient

### Forxiga 5 mg film-coated tablets Forxiga 10 mg film-coated tablets dapagliflozin

**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 or pharmacist. This includes any possible side effects not listed in this leaflet. See section 4.

#### **What is in this leaflet:**

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

#### **1. What Forxiga is and what it is used for**

Forxiga contains the active substance dapagliflozin. It belongs to a group of medicines called “oral anti-diabetics”.

- These are medicines taken by mouth for diabetes.
- They work by lowering the amount of sugar (glucose) in your blood.

Forxiga is used for a type of diabetes called “type 2 diabetes mellitus” in adult patients (aged 18 years and older). “Type 2 diabetes mellitus” is the type of diabetes that usually starts when you are older. If you have type 2 diabetes, your pancreas does not make enough insulin or your body is not able to use the insulin it produces properly. This leads to a high level of sugar in your blood. Forxiga works by removing excess sugar from your body via your urine.

- Forxiga is used if your diabetes cannot be controlled with other medicines for diabetes, diet and exercise.
- Your doctor may ask you to take Forxiga on its own if you are intolerant to metformin or together with other medicines to treat diabetes. This may be another medicine taken by mouth and/or a medicine given by injection, such as insulin or a GLP-1 receptor agonist.

It is important to continue to follow the advice on diet and exercise given to you by your doctor, pharmacist or nurse.

#### **2. What you need to know before you take Forxiga**

##### **Do not take Forxiga:**

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

## **Warnings and precautions**

Talk to your doctor, pharmacist or nurse before taking Forxiga, and during treatment:

- if you have “type 1 diabetes” – the type that usually starts when you are young, and your body does not produce any insulin.
- if you 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 rare but serious, sometimes life-threatening 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.
- if you have a kidney problem – your doctor may ask you to take a different medicine.
- if you have a liver problem – your doctor may start you on a lower dose.
- if you have a history of serious heart disease or if you have had a stroke.
- if you are on medicines to lower your blood pressure (anti-hypertensives) and have a history of low blood pressure (hypotension). More information is given below under ‘Other medicines and Forxiga’.
- if you have very high levels of glucose in your blood which may make you dehydrated (lose too much body fluid). Possible signs of dehydration are listed at the top of section 4. Tell your doctor before you start taking Forxiga if you have any of these signs.
- if you have or develop nausea (feeling sick), vomiting or fever or if you are not able to eat or drink. These conditions can cause dehydration. Your doctor may ask you to stop taking Forxiga until you recover to prevent dehydration.
- if you often get infections of the urinary tract.
- if you are 75 years old or older, you should not start taking Forxiga.
- if you are taking another medicine for diabetes that contains “pioglitazone”, you should not start taking Forxiga.
- if you have an increase in the amount of red blood cells in your blood, seen in tests.

Like for all diabetic patients it is important to check your feet regularly and adhere to any other advice regarding foot care given by your health care professional.

If any of the above applies to you (or you are not sure), talk to your doctor, pharmacist or nurse before taking Forxiga.

## **Kidney function**

Your kidneys should be checked before you start taking and whilst you are on this medicine.

## **Urine glucose**

Because of how Forxiga works, your urine will test positive for sugar while you are on this medicine.

## **Children and adolescents**

Forxiga is not recommended for children and adolescents under 18 years of age, because it has not been studied in these patients.

## **Other medicines and Forxiga**

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

Especially tell your doctor:

- if you are taking a medicine used to remove water from the body (diuretic). Your doctor may ask you to stop taking Forxiga. Possible signs of losing too much fluid from your body are listed at the top of section 4.
- if you are taking other medicines that lower the amount of sugar in your blood such as insulin or a “sulphonylurea” medicine. Your doctor may want to lower the dose of these other medicines, to prevent you from getting low blood sugar levels (hypo-glycaemia).

### **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. You should stop taking this medicine if you become pregnant, since it is not recommended during the second and third trimesters of pregnancy. Talk to your doctor about the best way to control your blood sugar while you are pregnant.

Talk to your doctor if you would like to or are breast-feeding before taking this medicine. Do not use Forxiga if you are breast-feeding. It is not known if this medicine passes into human breast milk.

### **Driving and using machines**

Forxiga has no or negligible influence on the ability to drive and use machines. Taking this medicine with other medicines called sulphonylureas or with insulin can cause too low blood sugar levels (hypo-glycaemia), which may cause symptoms such as shaking, sweating and change in vision, and may affect your ability to drive and use machines. Do not drive or use any tools or machines, if you feel dizzy taking Forxiga.

### **Forxiga contains lactose**

Forxiga contains lactose (milk sugar). If you have been told by your doctor that you have an intolerance to some sugars, contact your doctor before taking this medicine.

## **3. How to take Forxiga**

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

### **How much to take**

- The recommended dose is one 10 mg tablet each day.
- Your doctor may start you on a 5 mg dose if you have a liver problem.
- Your doctor will prescribe the strength that is right for you.

### **Taking this medicine**

- Swallow the tablet whole with half a glass of water.
- You can take your tablet with or without food.
- You can take the tablet at any time of the day. However, try to take it at the same time each day. This will help you to remember to take it.

Your doctor may prescribe Forxiga together with other medicine(s) to lower the amount of sugar in your blood. These may be medicine(s) by mouth or given by injection, such as insulin or a GLP-1 receptor agonist. Remember to take these other medicine(s) as your doctor has told you. This will help get the best results for your health.

### **Diet and exercise**

To control your diabetes, you still need to keep to diet and exercise, even when you are taking this medicine. So it is important to keep following the advice about diet and exercise from your doctor, pharmacist or nurse. In particular, if you are following a diabetic weight control diet, continue to follow it while you are taking Forxiga.

**If you take more Forxiga than you should**

If you take more Forxiga tablets than you should, talk to a doctor or go to a hospital immediately. Take the medicine pack with you.

**If you forget to take Forxiga**

What to do if you forget to take a tablet depends on how long it is until your next dose.

- If it is 12 hours or more until your next dose, take a dose of Forxiga as soon as you remember. Then take your next dose at the usual time.
- If it is less than 12 hours until your next dose, skip the missed dose. Then take your next dose at the usual time.
- Do not take a double dose of Forxiga to make up for a forgotten dose.

**If you stop taking Forxiga**

Do not stop taking Forxiga without talking to your doctor first. Your blood sugar may increase without this 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 Forxiga and see a doctor as soon as possible if you notice any of the following serious side effects:**

- loss of too much fluid from your body (dehydration), seen uncommonly (may affect up to 1 in 100 people).

These are signs of dehydration:

- very dry or sticky mouth, feeling very thirsty
- feeling very sleepy or tired
- passing little or no water (urine)
- fast heart beat.

- urinary tract infection, seen commonly (may affect up to 1 in 10 people).

These are signs of a severe infection of the urinary tract:

- fever and/or chills
- burning sensation when passing water (urinating)
- pain in your back or side.

Although uncommon, if you see blood in your urine, tell your doctor immediately.

**Contact a doctor or the nearest hospital straight away if you have any of the following side effects:**

- diabetic ketoacidosis, seen rarely (may affect up to 1 in 1,000 people)

These are the signs of diabetic ketoacidosis (see also section 2 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 Forxiga.

**Contact your doctor as soon as possible if you have any of the following side effects:**

Very common (may affect more than 1 in 10 people)

- low blood sugar levels (hypo-glycaemia) - when taking this medicine with a sulphonylurea or insulin

These are the signs of low blood sugar:

- shaking, sweating, feeling very anxious, fast heart beat
- feeling hungry, headache, change in vision
- a change in your mood or feeling confused.

Your doctor will tell you how to treat low blood sugar levels and what to do if you get any of the signs above.

**Other side effects when taking Forxiga:**

Common

- genital infection (thrush) of your penis or vagina (signs may include irritation, itching, unusual discharge or odour)
- back pain
- passing more water (urine) than usual or needing to pass water more often
- changes in the amount of cholesterol or fats in your blood (shown in tests)
- increases in the amount of red blood cells in your blood (shown in tests)
- decreases in creatinine renal clearance (shown in tests)
- dizziness
- rash

Uncommon

- thirst
- constipation
- awakening from sleep at night to pass urine
- dry mouth
- weight decreased
- increases in creatinine or urea (shown in laboratory blood tests)
- decrease in kidney function

**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 Forxiga**

- 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 or 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 throw away any medicines via wastewater or household waste. Ask your pharmacist how to throw away medicines you no longer use. These measures will help to protect the environment.

## 6. Contents of the pack and other information

### What Forxiga contains

- The active substance is dapagliflozin.  
Each Forxiga 5 mg film-coated tablet (tablet) contains dapagliflozin propanediol monohydrate equivalent to 5 mg dapagliflozin.  
Each Forxiga 10 mg film-coated tablet (tablet) contains dapagliflozin propanediol monohydrate equivalent to 10 mg dapagliflozin.
- The other ingredients are:
  - tablet core: microcrystalline cellulose (E460i), anhydrous lactose (see section 2 ‘Forxiga contains lactose’), crospovidone (E1202), silicon dioxide (E551), magnesium stearate (E470b).
  - film-coating: polyvinyl alcohol (E1203), titanium dioxide (E171), macrogol 3350, talc (E553b), yellow iron oxide (E172).

### What Forxiga looks like and contents of the pack

- Forxiga 5 mg film-coated tablets are yellow and round with diameter of 0.7 cm. They have “5” on one side and “1427” on the other side.
- Forxiga 10 mg film-coated tablets are yellow and diamond-shaped approximately 1.1 x 0.8 cm diagonally. They have “10” on one side and “1428” on the other side.

Forxiga 5 mg tablets and Forxiga 10 mg tablets are available in aluminium blisters in pack sizes of 14, 28 or 98 film-coated tablets in non-perforated calendar blisters and 30x1 or 90x1 film-coated tablets in perforated unit dose blisters.

Not all pack sizes may be marketed in your country.

### Marketing Authorisation Holder

AstraZeneca AB  
SE-151 85 Södertälje  
Sweden

### Manufacturer

AstraZeneca GmbH  
Tinsdaler Weg 183  
22880 Wedel  
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AstraZeneca UK Limited  
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Macclesfield  
SK10 2NA  
United Kingdom

Bristol-Myers Squibb Company  
Contrada Fontana del Ceraso  
IT-03012 Anagni (FR)  
Italy

For any information about this medicine, please contact the local representative of the Marketing Authorisation Holder:

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**Other sources of information**

Detailed information on this medicine is available on the European Medicines Agency web site:

<http://www.ema.europa.eu>