



ARTWORK APPROVAL FORM

Product Name: DGSON-5/10

Market: Francophone

Mfg. Location: Unit-3

Use of this notice reserved for approved health professionals, hospitals, laboratories or users of the product
Notice: User Information
DGSON-5/DGSON-10

DGSON-5
Dapagliflozin 5mg Film-Coated Tablets
Each film coated tablet contains:
Dapagliflozin Propanediol Monohydrate Equivalent to Dapagliflozin 5mg
Excipients q.s.
Colour: Titanium dioxide (E171), Iron Oxide Yellow (E172)

DGSON-10
Dapagliflozin 10mg Film-Coated Tablets
Each film coated tablet contains:
Dapagliflozin Propanediol Monohydrate Equivalent to Dapagliflozin 10mg
Excipients q.s.
Colour: Titanium dioxide (E171), Iron Oxide Yellow (E172)

List of excipients
Anhydrous Lactose, Microcrystalline Cellulose, Hydroxypropyl Cellulose Low-substituted, Colloidal Anhydrous Silica, Zinc Stearate, Opadry II Yellow (85F920464), Purified Water
Excipient with known effect: Each tablet contains 75.849 mg of lactose anhydrous
Excipient with known effect: Each tablet contains 151.698 mg of lactose anhydrous

Product description
DGSON-5
Yellow, biconvex, round shaped, film-coated tablets with "5" engraved on one side and plain on other side.
DGSON-10
Yellow, biconvex, diamond-shaped, film-coated tablets with "10" engraved on one side and plain on other side.

Chemical name: (2S,3R,4R,5S,6R)-2-((4-Ethoxybenzyl)(4-chlorophenyl)-6-hydroxyethyl-tetrahydro-2H-pyran-3,4,5-triol) propanediol monohydrate; Molecular formula: C₂₄H₃₄ClO₇; Molecular weight: 502.98 gm/mol.

Pharmacodynamics
Pharmacotherapeutic Class:
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. Inhibition of SGLT2 by dapagliflozin reduces reabsorption of glucose from the glomerular filtrate in the proximal renal tubule with a concomitant reduction in sodium reabsorption leading to urinary excretion of glucose and osmotic diuresis. Dapagliflozin therefore increases the delivery of sodium to the distal tubule which increases tubule glomerular feedback and reduces intra glomerular pressure. This combined with osmotic diuresis leads to a reduction in volume overload, reduced blood pressure, and lower preload and afterload, which may have beneficial effects on cardiac remodeling and diastolic function, and preserve renal function. The cardiac and renal benefits of dapagliflozin go beyond the blood glucose-lowering effect and are not limited to patients with diabetes as demonstrated in the DAPA-HF, DELIVER and DAPA-CKD studies. Other effects include an increase in haematocrit and reduction in body weight.

Dapagliflozin improves both fasting and post-prandial plasma glucose levels by reducing renal glucose reabsorption leading to urinary glucose excretion. The glucose excretion (glucosuric 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. Thus, in subjects with normal blood glucose and/or low GFR, dapagliflozin has a low propensity to cause hypoglycaemia, as the amount of filtered glucose is small and can be reabsorbed by SGLT1 and unblocked SGLT2 transporters. 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 dapagliflozin.

The SGLT2 is selectively expressed in the kidney. 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 micromole/L (-0.87 to -0.33 mg/dL).

Pharmacokinetics
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 values following once daily 10 mg doses of dapagliflozin were 150 ng/mL and 629 ng/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, Dapagliflozin Tablets 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/hepatic impairment). The mean steady-state volume of distribution of dapagliflozin was 119 liters.

Biotransformation
Dapagliflozin is extensively metabolized, 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 10mg 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 ¹⁴C-dapagliflozin dose, 56% was recovered, 75% in urine and 21% in feces. In fact, 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 haemodialysis on dapagliflozin exposure is not known. The effect of reduced renal function on systemic exposure was evaluated in a population pharmacokinetic model. Consistent with previous results, model predicted AUC was higher in patients with chronic kidney disease compared with patients with normal renal function, and was not meaningfully different in chronic kidney disease patients with type 2 diabetes mellitus and without diabetes.

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 (> 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.

Pharmacokinetics and pharmacodynamics (glucosuria) in children with type 2 diabetes mellitus aged 10-17 years were similar to those observed in adults with type 2 diabetes mellitus.
Gender
The mean dapagliflozin AUCs 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.

Indication
Type 2 diabetes mellitus
Dapagliflozin Tablets is indicated in adults and children aged 10 years and above for the treatment of insufficiently controlled type 2 diabetes mellitus as an adjunct to diet and exercise
• as monotherapy when metformin is considered inappropriate due to intolerance.
• in addition to other medicinal products for the treatment of type 2 diabetes.
For study results with respect to combination of therapies, effects on glycaemic control, cardiovascular and renal events, and the populations studied.

Heart failure
Dapagliflozin Tablets is indicated in adults for the treatment of symptomatic chronic heart failure.
Chronic kidney disease
Dapagliflozin Tablets is indicated in adults for the treatment of chronic kidney disease.

Recommended dose
Posology
Type 2 diabetes mellitus
The recommended dose is 10 mg dapagliflozin once daily.
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.
Heart failure
The recommended dose is 10 mg dapagliflozin once daily.
Chronic kidney disease
The recommended dose is 10 mg dapagliflozin once daily.

Special populations
Renal impairment
No dose adjustment is required based on renal function.
It is not recommended to initiate treatment with dapagliflozin in patients with an estimated glomerular filtration rate (eGFR) < 15 mL/min/1.73m².
In patients with type 2 diabetes mellitus, the glucose lowering efficacy of dapagliflozin is reduced when eGFR is < 45 mL/min/1.73m², and is likely absent in patients with severe renal impairment. Therefore, if eGFR falls below 45 mL/min/1.73m², additional glucose lowering treatment should be considered in patients with type 2 diabetes mellitus.
Hepatic impairment
No dose 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.
Elderly (> 65 years)
No dose adjustment is recommended based on age.
Paediatric population
No dose adjustment is required for the treatment of type 2 diabetes mellitus in children aged 10 years and above. No data are available for children below 10 years of age.

The safety and efficacy of dapagliflozin for the treatment of heart failure or for the treatment of chronic kidney disease in children < 18 years have not yet been established. No data are available.
Method of administration
Dapagliflozin Tablets can be taken orally once daily at any time of day with or without food. Tablets are to be swallowed whole.

Contraindication
Hypersensitivity to the active substance or to any of the excipients listed above.

Warnings and precautions
Renal impairment
There is limited experience with initiating treatment with dapagliflozin in patients with eGFR < 25 mL/min/1.73m², and no experience with initiating treatment in patients with eGFR < 15 mL/min/1.73m². Therefore, it is not recommended to initiate treatment with dapagliflozin in patients with eGFR < 15 mL/min/1.73m².
The glucose lowering efficacy of dapagliflozin is dependent on renal function, and is reduced in patients with eGFR < 45 mL/min/1.73m² and is likely absent in patients with severe renal impairment.
In patients with moderate renal impairment (eGFR < 60 mL/min/1.73m²), a higher proportion of patients treated with dapagliflozin had adverse reactions of increase in parathyroid hormone (PTH) and hypotension, compared with placebo.
Hepatic impairment
There is limited experience in clinical studies in patients with hepatic impairment. Dapagliflozin exposure is increased in patients with severe hepatic impairment.
Use in patients at risk for volume depletion and/or hypotension
Due to its mechanism of action, dapagliflozin increases diuresis which may lead to the modest decrease in blood pressure observed in clinical studies. It may be more pronounced in patients with very high blood glucose concentrations.
Caution should be exercised in patients for whom a dapagliflozin-induced drop in blood pressure could pose a risk, such as patients on anti-hypertensive therapy with a history of hypotension or elderly patients.

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 (250mg/dL). 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.
Neutrophil fasciitis of the perineum (Fournier's gangrene)
Postmarketing cases of neutrophil fasciitis of the perineum (also known as Fournier's gangrene) have been reported in female and male patients taking SGLT2 inhibitors. This is a rare but

serious and potentially life-threatening event that requires urgent surgical intervention and antibiotic treatment.
Urinary tract infections
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 (> 65 years)
Elderly patients may be at a greater risk for volume depletion and are more likely to be treated with diuretics.
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.

Cardiac failure
Experience with dapagliflozin in NYHA class IV is limited.
Chronic kidney disease
There is no experience with dapagliflozin for the treatment of chronic kidney disease in patients without diabetes who do not have albuminuria.
Dapagliflozin has not been studied for the treatment of chronic kidney disease in patients with polycystic kidney disease, glomerulonephritis with flares (lupus nephritis or ANCA-associated vasculitis), ongoing or recent requirements of cytotoxic, immunosuppressive or other immunomodulating renal therapy, or in patients who received an organ transplant.

Lower limb amputations
An increase in cases of lower limb amputation (primarily of the toe) has been observed in long-term, clinical studies in type 2 diabetes mellitus with SGLT2 inhibitors. It is unknown whether this constitutes a class effect. It is important to counsel patients with diabetes on routine preventative foot care.
Urinary laboratory assessments
Due to its mechanism of action, patients taking Dapagliflozin Tablets will test positive for glucose in their urine.

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

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.
Insulin and insulin secretagogues
Insulin and insulin secretagogues, such as sulphonylureas, cause hypoglycaemia. Therefore, a lower dose of insulin or insulin secretagogue may be required to reduce the risk of hypoglycaemia when used in combination with dapagliflozin in patients with type 2 diabetes mellitus.
Pharmacokinetic interactions

The metabolism of dapagliflozin is primarily via glucuronide conjugation mediated by UDP-glucuronosyl transferase 1A9 (UGT1A9).
In vitro studies, dapagliflozin neither inhibited cyclochrome 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 metabolized 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 filgrastim (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 metformin (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
Dapagliflozin may increase renal lithium excretion and the blood lithium levels may be decreased. Serum concentration of lithium should be monitored more frequently after dapagliflozin initiation and dose changes. Please refer the patient to the lithium prescribing doctor in order to monitor serum concentration of lithium.
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 (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.

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.

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 trimester of human pregnancy. 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. A risk to the newborn/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 studied.

Effects on ability to drive and use machines
Dapagliflozin Tablets 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.

Undesirable effects
Summary of the safety profile
Type 2 diabetes mellitus
The most frequently reported adverse reactions across the clinical studies were genital infections.
Heart failure
The overall safety profile of dapagliflozin in patients with heart failure was consistent with the known safety profile of dapagliflozin.
Description of selected adverse reactions
Urologic infections, balanitis and related genital infections
In the 13-study safety pool, vulvovaginitis, balanitis and related genital infections were reported in 5.5% and 0.6% of subjects who received dapagliflozin 10 mg and placebo, respectively.
Neutrophil fasciitis of the perineum (Fournier's gangrene)
Cases of Fournier's gangrene have been reported postmarketing in patients taking SGLT2 inhibitors, including dapagliflozin.

Hypoglycaemia
The frequency of hypoglycaemia depended on the type of background therapy used in the clinical studies in diabetes mellitus.
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.
Urinary tract infections
Minor 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).
Paediatric population
The dapagliflozin safety profile observed in a clinical study in children aged 10 years and above with type 2 diabetes mellitus was similar to that observed in the studies in adults.

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.

Dosage forms and packaging available
3 alu/alu blister packs in a cardboard box. Each alu/alu blister pack contains 10 tablets to make a box of 30 tablets.

Storage condition
Store at a temperature not exceeding 30° C, Protected from light and moisture.
Keep the medicine out of reach of children.

Prescription and delivery conditions
Liste-A Only by prescription

Marketing authorization holder / Manufactured by:
UNISON PHARMACEUTICALS PVT. LTD.
Unit-II, C-7, 8, 9, Steel Town, Opp. Nova Petro, Morarji, Ta. -Sanand, Dist. -Ahmedabad-382213, Gujarat, India.

Date of last revision of the text: September 2024

520 mm

400 mm
English

Size: 520 x 400 mm
Colour: P P Black C

Pharmacode: 859

Do not print Outline

Font Type: Arial
Font Size: 6.5 pt
Brand Font Size: 7.5 pt

DATE: 01/10/2024 VERSION:01
DATE: 20/09/2024 VERSION:00

INSERT/PII/OUTSERT SPECIFICATION									
Artwork Code	02 222 1879 00	Open Size	520 x 400 mm	Close Size	31 x 60 mm	Floding Condition	Folded	Type of Paper	Bible
GSM of Paper	40 gsm	Colour of Paper	White	Colour of Matter	P P Black C	Pharmacode	859	Any other special process	N.A.
Old Artwork Code	N.A.	Old Pharmacode	N.A.	Reference Change Control no.	N.A.	of Plant	N.A.		N.A.

Review & Approved By Contract Giver/Customer/Authority/MA Holder (If Applicable) :

Sign & Date :	
Name :	
Designation :	
Department :	