Media Backgrounder:

About INVOKANA® (canagliflozin)

Key Facts

- INVOKANA® (canagliflozin) is approved in the European Union for the treatment of adults with type 2 diabetes mellitus, to improve glycaemic control.[1]
- Canagliflozin is an oral, once-daily medication, which belongs to a new class of medications called sodium glucose co-transporter 2 (SGLT2) inhibitors.[2]
- Canagliflozin inhibits SGLT2 and, as a result, promotes the loss of glucose via the urine, lowering blood glucose levels in adults with type 2 diabetes. Due to the increased urinary loss of glucose, canagliflozin can be associated with reductions in body weight and systolic blood pressure.[2]
- The European approval of canagliflozin was based on a comprehensive global Phase 3 clinical trial programme, which enrolled 10,285 patients in nine studies.[2-11]
- The canagliflozin global clinical trial programme, submitted as part of the licencing process, is one of the largest late-stage development programmes for a medicinal product for the treatment of type 2 diabetes conducted to date.

What is INVOKANA® (canagliflozin) and how does it work?

Canagliflozin is an oral, once-daily medication, which belongs to a new class of medications called sodium glucose co-transporter 2 (SGLT2) inhibitors.[2]

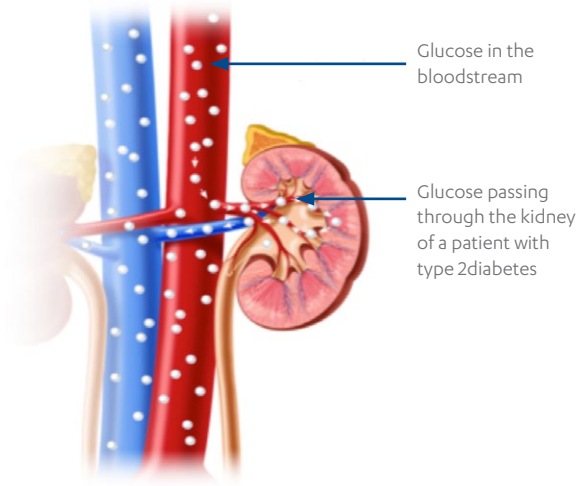
As glucose is filtered from the blood into the kidneys, it is reabsorbed back into the bloodstream. SGLT2 is an important carrier responsible for this reabsorption.

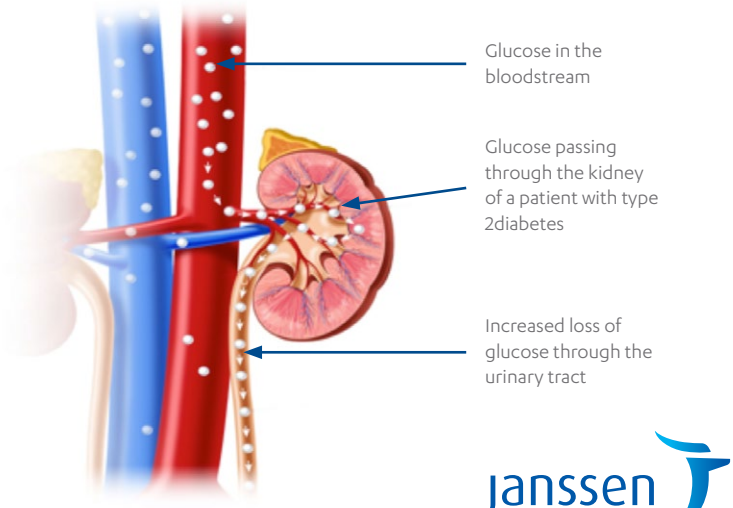
Canagliflozin inhibits SGLT2 and, as a result, promotes the loss of glucose via the urine, lowering blood glucose levels in adults with type 2 diabetes.[2]

Due to the increased urinary loss of glucose, canagliflozin is also associated with reductions in body weight and osmotic diuresis which may reduce systolic blood pressure.[2]

Canagliflozin has an insulin independent mode of action, unlike some other classes of drugs used for the treatment of type 2 diabetes.[2]

Canagliflozin: Mode of action





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PHARMACEUTICAL COMPANIES OF Johnson&Johnson

Media Backgrounder:

About INVOKANA® (canagliflozin)

Improved glycaemic control as monotherapy or as add-on therapy

The recent approval of canagliflozin in the European Union was based on a comprehensive global Phase 3 clinical trial programme, which enrolled 10,285 patients in nine studies.[2-11]

- One of the studies compared canagliflozin with placebo when used alone in patients whose blood glucose levels were not satisfactorily controlled by diet and exercise alone.[9]
- Two studies looked at canagliflozin when used as an add-on to metformin.[2]
- Three further studies looked at canagliflozin when used as an add-on to two other diabetes medicines (including metformin), when these medicines together with exercise and diet were not providing adequate control of diabetes.[2]
- A study was also performed in patients with moderately reduced kidney function, and another in older patients between 55 and 80 years.[2]
- A large cardiovascular outcome study (CANVAS) is ongoing and two new large outcomes studies CANVAS R and CREDENCE are just starting.

Canagliflozin was shown to be more effective than placebo, and at least as effective as comparator medicines, at reducing the levels of blood glucose, as measured by (HbA1c) when used alone and in combination with other diabetes medicines.[2]

A secondary study endpoint showed that there was a reduction in body weight and systolic blood pressure in the canagliflozin groups compared to those on placebo or on active comparator.[2]

Adverse drug reactions due to the mode of action of SGLT2 inhibition were associated with canagliflozin, which included reports of genital mycotic infections, urinary tract infections (UTIs), osmotic diuresis (such as urinary frequency, thirst or constipation) and reduced intravascular volume (such as postural dizziness). Canagliflozin was also associated with a low incidence of rash or urticaria. The most commonly reported adverse reactions during treatment included hypoglycaemia in combination with insulin or a sulphonylurea.[2]

The frequency of hypoglycaemia was low when canagliflozin was used as a monotherapy, as an add-on to metformin or in combination with other agents with a low risk of hypoglycaemia.[2]

Approval of canagliflozin in the European Union

Canagliflozin was approved in the European Union by the European Commission in November 2013 for the treatment of adults aged 18 years and older with type 2 diabetes mellitus, to improve glycaemic control.[1]

- As a monotherapy, when diet and exercise alone do not provide adequate glycaemic control in patients for whom the use of metformin is considered inappropriate due to intolerance or contraindications.
- Or as an add-on therapy with other anti-hyperglycaemic medicinal products including insulin, when these together with diet and exercise do not provide adequate glycaemic control.

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