

# Media Backgrounder:

## About SGLT2 inhibitors

### Type 2 diabetes and the unmet need

Despite the availability of many treatments for type 2 diabetes, approximately half of patients have not reached treatment goals at any given time. More treatment options are needed which provide strong, sustained efficacy in lowering excess blood glucose, which work independent of insulin.<sup>1,2</sup>

#### What are Sodium Glucose Co-Transporter 2 (SGLT2) inhibitors?

SGLT2 inhibitors are an emerging class of glucose-lowering agents for the treatment of type 2 diabetes, that are being developed with the aim of filling a gap for glucose-lowering treatments with a novel mechanism of action, compared to some existing therapies.<sup>3,4</sup>

SGLT2 inhibitors are used to reduce blood glucose levels, either as a monotherapy or in addition to other glucose-lowering therapies, including insulin.<sup>3,4,5</sup>

#### What is Sodium Glucose Co-Transporter 2 (SGLT2)?

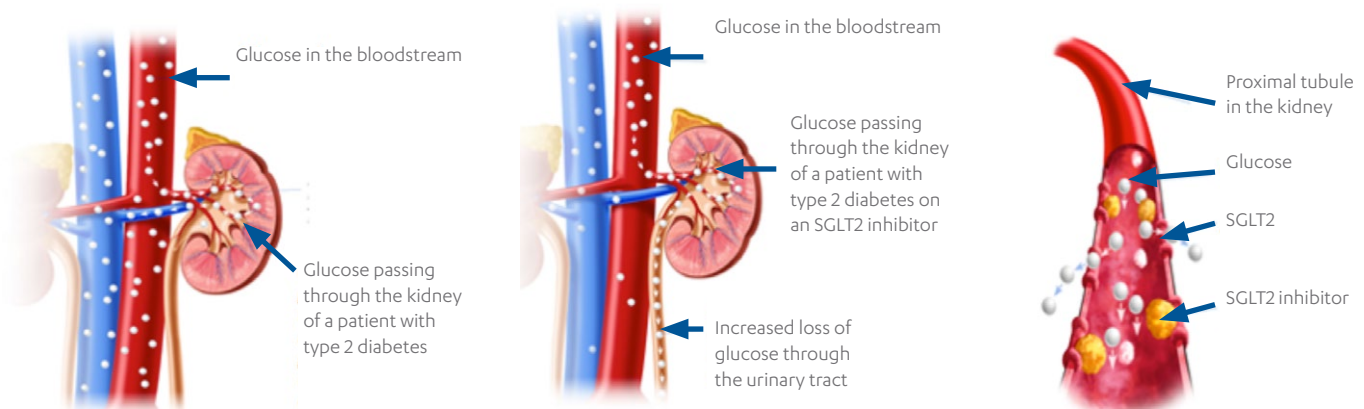
The kidneys make an important contribution to balancing blood glucose. As glucose is filtered from the blood into the kidneys it is reabsorbed back into the bloodstream. A carrier responsible for most of this reabsorption is the human protein sodium glucose co-transporter 2 (SGLT2).<sup>3,4</sup>

The kidneys of people with type 2 diabetes reabsorb greater amounts of glucose back into the body compared to people without type 2 diabetes, which may contribute to elevated blood glucose levels (hyperglycaemia).<sup>4</sup> Therefore SGLT2 is a potential target for novel treatments for type 2 diabetes.<sup>3,5</sup>

#### How do SGLT2 inhibitors work?

SGLT2 inhibitors work by blocking the SGLT2 protein. This reduces reabsorption of glucose in the kidney, leading to increased glucose excretion via the urine and lowering the level of glucose in the blood.<sup>3</sup> This mechanism of action is independent of insulin.<sup>3,4,5</sup>

In addition, the increased excretion of glucose via urine can lead to a loss of calories and therefore a potential reduction in body weight. The effect of increased urinary glucose excretion is a diuretic action which can also lead to a reduction in systolic blood pressure.<sup>3,4</sup>



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### What are the benefits of SGLT2 inhibitors?

The unique mechanism of action of SGLT2 inhibitors is independent of insulin, offering efficacy in lowering blood glucose with low risk of treatment-induced hypoglycaemia, when administered as a monotherapy or as an add on to other anti-diabetes medicines, such as metformin. They have the additional potential effects of weight loss.<sup>3,4</sup>

However, SGLT2 inhibitors when used as add-on to insulin, or insulin secretagogues, can cause hypoglycaemia.<sup>4</sup>



### What is the safety and tolerability profile of SGLT2 inhibitors?

Due to the increased urinary glucose excretion, treatment with SGLT2 inhibitors can increase the risk of genital mycotic (fungal) infection or urinary tract infections (UTIs). The infections are generally mild to moderate.<sup>3,4</sup>

Other side effects can include postural dizziness (associated with volume depletion) and urinary frequency and thirst (related to the mechanism of action).<sup>3,4</sup>

SGLT2 inhibitors are generally well-tolerated; however, the most commonly reported adverse reactions during treatment include hypoglycaemia when used in combination with insulin or a sulphonylurea.<sup>4</sup>

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## References

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