

Development and Potential Role of Type-2 Sodium-Glucose Transporter Inhibitors for Management of Type 2 Diabetes

- Recovery of glucose from the glomerular filtrate by the type-2 sodium glucose cotransporter (SGLT2) is an important mechanism in maintaining glucose homeostasis and represents a novel target for the management of type 2 diabetes mellitus. Several candidate SGLT2 inhibitors are currently under development, with four in the later stages of clinical testing.
- In clinical and non-clinical studies inhibition of SGLT2 promotes glucose excretion and normalizes glycemia.
- Targeted at specific membrane transporters expressed almost exclusively within the renal tubules, SGLT2 inhibitors demonstrate a promising safety profile with little evidence of associated hypoglycaemia or increased incidence of urinary tract infections.
- Promotion of glucose excretion introduces the opportunity to reduce calories in patients that are generally overweight and is expected to work synergistically with weight reduction programs in T2DM.
- Experience will lead to better understanding of which patients and under what circumstances SGLT2 inhibitors will provide the greatest clinical benefit and where SGLT2 inhibitors will eventually fit in the treatment cascade for T2DM.