

# Exploring diabetes

## Inspired to make a difference

Boehringer Ingelheim is committed to researching and developing new compounds to target diabetes

- Boehringer Ingelheim is a research-driven pharmaceutical group of companies dedicated to serving mankind by researching, developing, manufacturing and marketing pharmaceuticals that improve health and quality of life

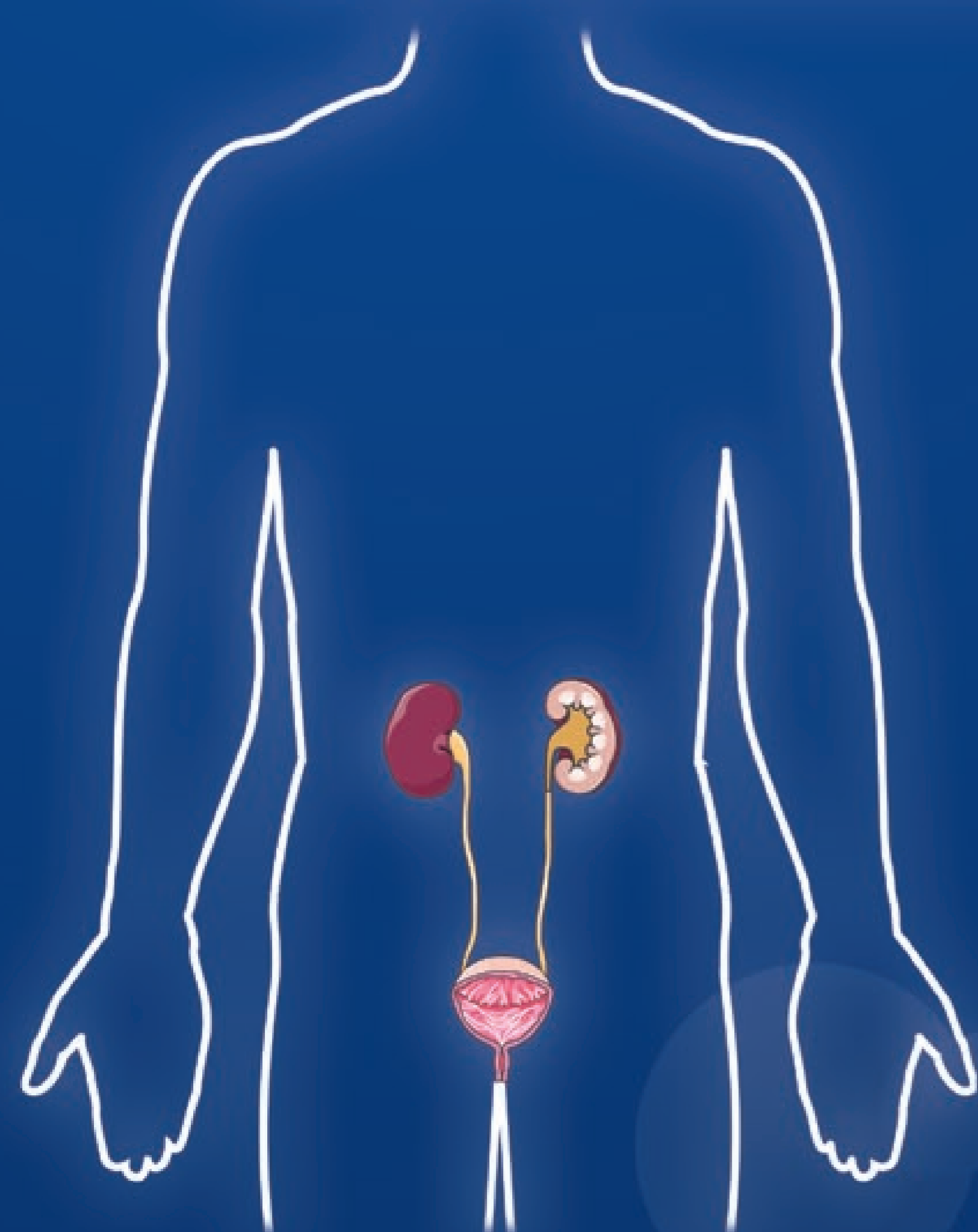
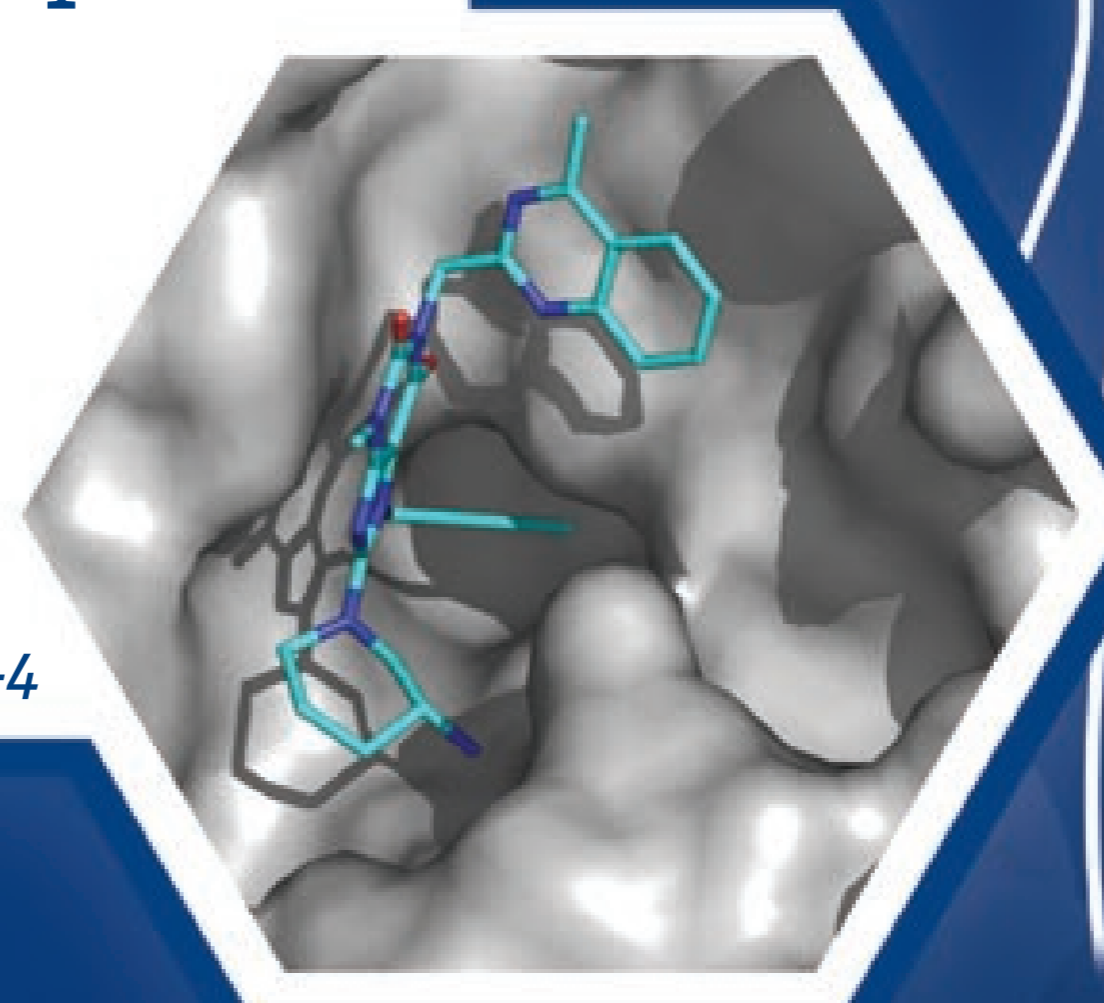
BOEHRINGER INGELHEIM IS PURSUING ANTIDIABETIC COMPOUNDS OF VARIOUS MODES OF ACTION

DPP-4

### DPP-4 inhibitor

Linagliptin (BI 1356) is the most advanced compound in the Boehringer Ingelheim portfolio. Linagliptin reversibly binds to DPP-4 and thus inhibits the breakdown of the incretins GLP-1 and GIP. The intact hormones increase glucose-dependent insulin secretion and suppress glucagon secretion. The inhibition of DPP-4 is therefore beneficial for type 2 diabetic patients to control blood sugar levels<sup>1</sup>

*Linagliptin bound to DPP-4*



SGLT-2

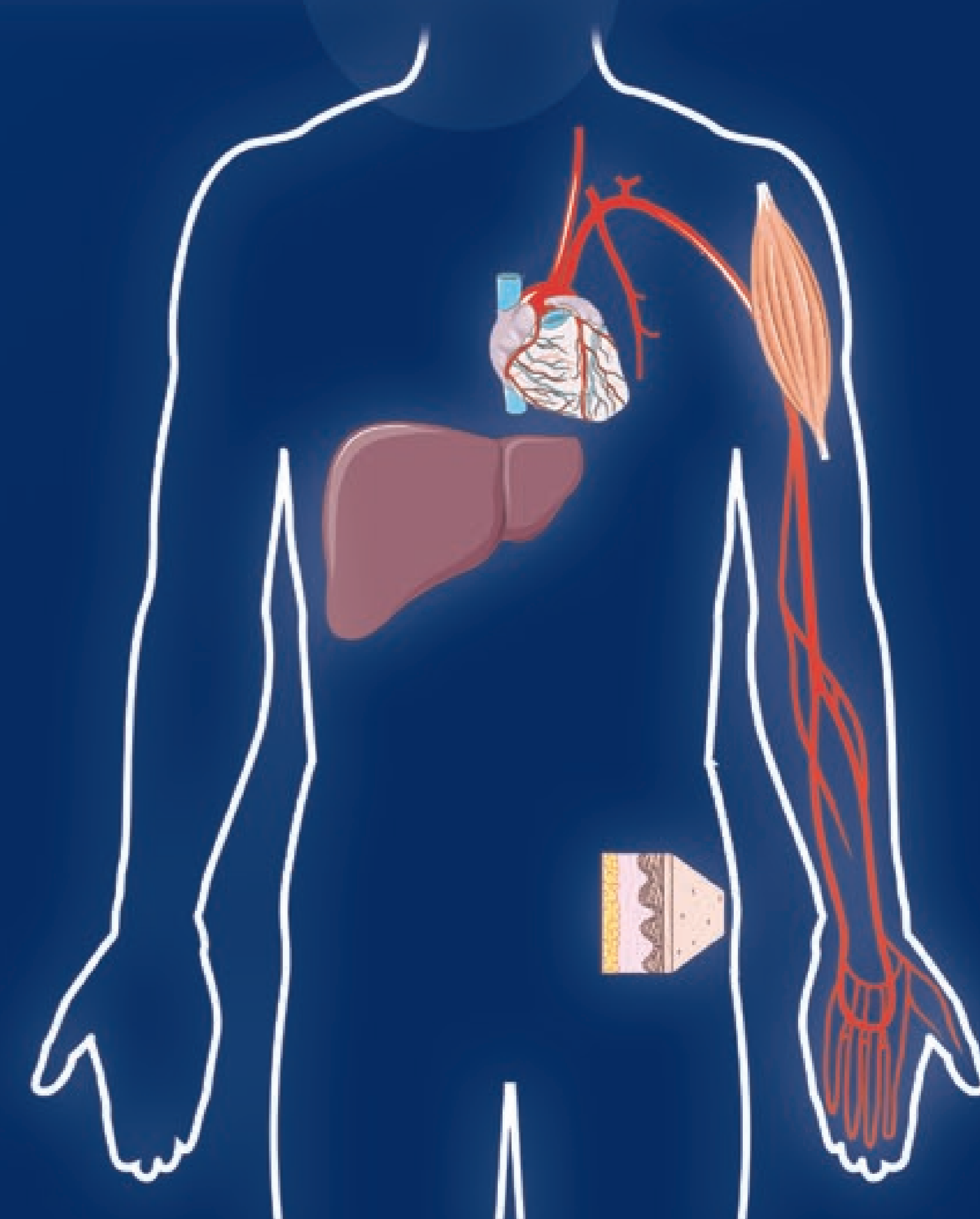
### SGLT-2 inhibitor

BI 10773 is an SGLT-2 inhibitor targeting the kidneys by blocking renal glucose absorption. Lowering of circulating glucose as a result of urinary glucose loss will result in a net energy deficit and thereby improve glycaemic control. The inhibition of SGLT-2 has further potential benefits for promoting body weight loss and reducing blood pressure<sup>2</sup>

11 $\beta$ -HSD1

### 11 $\beta$ -HSD1 inhibitor

Boehringer Ingelheim is dedicated to advancing its diabetes franchise with various compounds in development, including an 11 $\beta$ -HSD1 inhibitor. Inhibition of 11 $\beta$ -HSD1 offers a novel potential therapy to lower intracellular cortisol concentrations and thereby improve insulin sensitivity, blood lipid levels and vascular function<sup>3</sup>



#### References:

- Pratley RE, Salsali A. Inhibition of DPP-4: a new therapeutic approach for the treatment of type 2 diabetes. *Curr Med Res Opin.* 2007; 23(4):919-31.
- Bays H. From victim to ally: the kidney as an emerging target for the treatment of diabetes mellitus. *Curr Med Res Opin.* 2009; 25(3):671-81.
- Stulnig TM, Waldhäusl W. 11beta-Hydroxysteroid dehydrogenase Type 1 in obesity and Type 2 diabetes. *Diabetologia.* 2004; 47(1):1-11.