

About Us

Carbometrics Ltd. was founded in 2018 following the acquisition of Ziylo Ltd by Novo Nordisk. Our core competency is the design, synthesis, and derivatisation of highly selective and robust synthetic Glucose Binding Molecules. Ziylo was acquired to support Novo Nordisk's strategic goal to develop the world's first glucose-responsive insulins and transform the treatment of diabetes.

Ziylo's synthetic glucose binding molecules (GBMs) were initially discovered by Professor Anthony Davis, a world-leader in the field of molecularly engineered sugar receptors based at the University of Bristol. Carbometrics negotiated an exclusive license to the non-therapeutic applications of the GBMs for uses such as CGM.

Carbometrics operates from a state-of-the-art 200 m² synthetic organic chemistry laboratory and office space at the Science Creates incubator site in St Philips, Bristol. The laboratories are equipped with BS EN 14175 Certified Fume Extraction and the necessary equipment to conduct sub-mg to >100 g scale chemical synthesis. "This organic synthesis capability is supported by a fully equipped analytical suite including High Performance Liquid Chromatography - Mass Spectrometry (HPLC-MS), preparative HPLC, Size-Exclusion Chromatography and Nuclear Magnetic Resonance (NMR).

Our Science

Our principal technology is the world's most selective synthetic Glucose Binding Molecule (GBM) - a perfectly optimised 3D-scaffold matched to bind glucose.

Specific molecular recognition is routine for biology, but has proved difficult to achieve in synthetic systems. Carbohydrate substrates are especially challenging, because of their diversity and similarity to water, the biological solvent.

The GBM technology, fundamental to our approach in glucose sensing, is a synthetic receptor for glucose that is biomimetic in both design and capabilities.

The core structure is simple and symmetrical, yet provides a cavity which almost perfectly complements the all-equatorial β -pyranose form of glucose.