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ASIA EDITION

Australia identifies potential treatment for obesity and insulin resistance

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PureTech's Glyph prodrug technology platform was used in the study

Australia's Monash University researchers have shown for the first time that mesenteric (gut) lymphatic dysfunction is a potential cause of and therapeutic target for obesity and insulin resistance.

The ground-breaking study identified a profoundly damaging cycle in which a high fat diet promotes dysfunction of the mesenteric lymphatics, that in turn leads to accumulation of abdominal fat.

Notably, the study also provides preclinical evidence that intervening in this cycle by inhibiting the pathways associated with lymphatic dysfunction may be a treatment for both obesity and associated metabolic disease.

Treatment of the mesenteric lymphatic system with a prodrug of the lymph-targeted COX-2 inhibitor was shown to normalise the structure of the lymphatic vasculature, block weight gain and reverse glucose intolerance and hyperinsulinemia - conditions associated with type 2 diabetes.

Central to the success of the study was the use of PureTech's Glyph^{TM} prodrug technology platform, which is specifically designed to enable the trafficking of small molecule drugs directly into the mesenteric lymphatic system following oral administration.

The Glyph^{TM} prodrug technology was initially developed by the Monash Institute of Pharmaceutical Sciences (MIPS) team and licensed to PureTech, a US clinical-stage biotherapeutics company, in 2017. MIPS and PureTech scientists have subsequently been working together to further develop the platform.