

Korea fabricates multi-organ on-a-chip for studying diabetes treatment

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The Korean Diabetes Union reported that approximately 4.7 million Koreans were diagnosed with diabetes in 2021, with over 90 percent suffering from Type 2 Diabetes



A team of researchers at South Korea-based Pohang University of Science and Technology (POSTECH) and at Eunpyeong St. Mary's Hospital of the Catholic University of Korea, have completed development of a multi-organ chip on-a-chip that applies 3D cell printing technology to closely replicate the pathological environment of type 2 diabetes (T2D).

To replicate the pathological features of diabetes and its implications, the research team developed bioinks derived from the pancreas, adipose tissue, and liver, which are closely related to T2D. They then employed 3D cell printing to create a multi-organ chip on-a-chip with the most appropriate arrangement for reproducing the pathological characteristics of T2D.

The developed multiple-organ on-a-chip can be used to verify the efficacy of diabetes treatments currently in clinical trials. In fact, the device has already been proven to be about as effective as animal and clinical trials are, indicating that chip-based research may soon replace the need for animal and clinical testing.