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Korea develops novel sweat-collecting patch for blood sugar monitoring

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The patch can be used in various wearable healthcare devices, including blood sugar monitoring

Sweat is an effective body fluid for analyzing bioanalytes in the body without collecting blood. The sweat sensor can reduce the hassle for diabetic patients who repeatedly have to draw blood, and can also be used in wearable devices for daily healthcare monitoring.

However, the practical use of sweat sensors is impeded by irregular and low sweat secretion rates. There is a pressing need to effectively collect these sweat secretions.

To this, a research team at South Korea's Pohang University of Science and Technology (POSTECH) has recently developed a skin-attachable patch that quickly collects sweat by mimicking the principle behind cactus spines.

The researchers applied the principle of how cactus spines collect water. They mimicked the structure of the cactus spine by using the wedge-shaped wettability patterns with superhydrophobic/superhydrophilic surfaces.

The wedge-patterned channel shows great sweat-collecting efficiency as it transports nearly all sweat droplets to the sensing area without leaving much behind inside the channel, enabling it to collect sweat much faster than the conventional microfluidic channels. This allows the patch to continuously monitor the bioanalytes in the blood.