Diabetes Center Berne

Advancing Insulin Activity Research with Beyond Diagnostics

Insulin, a crucial protein drug in diabetes management, is highly sensitive to environmental stressors such as temperature fluctuations and mechanical impact, which can compromise its therapeutic efficacy. Current analytical methods fail to accurately assess insulin activity under real-world conditions, limiting insights into its stability and potentially leading to treatment complications and life-threatening situations.

After securing funding from Innosuisse and winning the Digital Health Nation Accelerator, Beyond Diagnostics, a spin-off emerging from the Diabetes Center Berne (DCB), are pioneering research on insulin degradation and activity. In collaboration with the University of Applied Sciences and Arts Northwestern Switzerland (FHNW), they employ advanced biochemical, spectroscopic, and structural analysis techniques including nuclear magnetic resonance (NMR), differential scanning calorimetry (DSC), and receptor-binding assays to investigate molecular changes affecting insulin function.

This research also aims to establish a new reference method for insulin activity assessment with broad implications for diabetes management. By optimizing insulin formulation and mitigating degradation risks, the findings will improve diabetes care and pave the way for next-generation insulin therapies. With the backing of DCB and FHNW, Dr. Schinz and her team at Beyond Diagnostics bridge fundamental science and patient-centered innovation.

By driving cutting-edge research, Beyond Diagnostics contributes to making Switzerland a leader in biomedical innovation while addressing a global healthcare challenge. The project's impact extends beyond research, offering insights that could shape industry standards, improve insulin quality worldwide, and ultimately enhance the lives of millions of people with diabetes.