

Singapore's NTU and Boehringer Ingelheim collaborate to explore new approaches for treating obesity

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Nanyang Technological University (NTU), Singapore and global biopharmaceutical company Boehringer Ingelheim will be investigating new approaches to treating obesity, following a new research collaboration agreement between both organisations.

Under the collaboration, researchers from both partners will undertake two projects exploring different biological mechanisms that could potentially be targeted to develop new anti-obesity therapies.

Obesity is a complex chronic disease involving multiple biological systems, affecting about one in eight people worldwide and a similar, rising share of adults in Singapore. It increases the risk of type 2 diabetes, cardiovascular disease and some cancers, and keeping weight off remains a challenge for many. Developing new treatments requires a deeper understanding of the mechanisms that regulate body weight and metabolism.

The first project will investigate whether long-lasting obesity-related changes in fat tissue can be reversed to restore its ability to regulate energy balance effectively.

Research suggests that weight loss alone may not fully reset obesity-induced alterations in fat tissue, leaving behind a biological memory that can compromise metabolic flexibility and make it more difficult to maintain long-term metabolic health.

The second project will examine the therapeutic potential of mitochondrial-derived peptides, a relatively new class of signalling molecules produced by mitochondria, the structures within cells that generate energy – and how they influence metabolic processes relevant to obesity.

Researchers will identify promising peptides, study their effects in relevant cellular models, and investigate whether they can

act beyond the cells in which they are produced.