Acceptance speech

19 June 2025

Joel Habener, awardee in the Biology and Biomedicine category (17th edition)

I'm deeply honored by being selected as a co-recipient of the prestigious 2024 Frontiers of Knowledge Award. I thank the award jury for electing me for this award. It is indeed gratifying to receive this peer recognition for my contributions to the discovery of GLP-1 and to see that they are helping to alleviate illnesses in millions of people throughout the world.

My contribution to this field occurred in 1979 when Kay Lund and Dick Goodman in my lab cloned the gene encoding the anglerfish proglucagon, and found that it encoded not only glucagon, but also a glucagon-related peptide, subsequently known as glucagon-like peptide-1 or GLP-1. The subsequent cloning of the genes for the mammalian pro-glucagons by Gerhard Heinrich in my lab, and by Graeme Bell at Chiron, revealed the encodement of two GLPs, GLP-1 and GLP-2, in addition to glucagon.

Structured function studies in mice and cultured pancreatic cells by Svetlana Mojsov and Dan Drucker, working with me, localized the sequence of the biologically active peptide to 31 amino acids, GLP-1 7-37. This peptide, GLP-1 7-37, was expressed in the intestine and in the pancreas, and stimulated in glucose-dependent insulin secretion from cultured pancreas cells and the isolated pancreas.

These studies established that GLP-1 is a gluco-incretin hormone and could offer an effective treatment for type 2 diabetes. Subsequently, GLP-1 was commercialized on the market as a treatment for type 2 diabetes, because of its importance in stimulating the pancreas to make its own insulin instead of having to take injections of insulin. During this period of therapy for type 2 diabetes, it was noted that the patients were losing weight, and then subsequently it became a treatment for obesity and weight management.