BIOBUSINESS BRIEFS

DEAL WATCH

CureDM licenses regenerative diabetes therapy to Sanofi–Aventis

Sanofi–Aventis has signed an agreement with CureDM, entitling Sanofi–Aventis to exclusive worldwide rights to develop and market Pancreate — a first-in-class peptide therapeutic that may have the potential to stimulate pancreatic islet neogenesis — for the treatment of type 1 and type 2 diabetes. The agreement for this preclinical-stage agent involves an upfront payment and additional milestone payments, potentially totalling US$335 million.

"In both type 1 and late-stage type 2 diabetes, a fundamental problem is the loss of functional islet β-cell mass, resulting in insulin deficiency and hyperglycaemia," explains Paul Burn, Chair and Director of The Sanford Project, and professor at the Sanford School of Medicine, University of South Dakota, USA. "Although insulin therapy is a life-saving treatment for type 1 diabetes, and has a key role in the treatment for patients with advanced type 2 diabetes, it cannot prevent the development of long-term complications," he adds. "So, the development of disease-modifying therapies — capable of restoring functional β-cell mass and endogenous insulin production — remains a major unmet medical need."

Several strategies aimed to address this need are being actively pursued. "Transplantation of either whole pancreas or islets is one approach, although it is not widely applicable because of the limited numbers of organ donors and the significant negative long-term consequences of the necessary immunosuppression," says Lawrence Rosenberg, professor at McGill University, Quebec, Canada. "Moreover, it is not suitable for individuals with type 2 diabetes — the vast majority of the diabetic population."

Therapeutic strategies capable of stimulating or copying the body's own repair mechanisms and mimicking the actions of endogenous peptide and protein factors are also receiving significant attention, says Burn. Although islet neogenesis mainly takes place only during fetal development, it can occur in adults in response to pancreatic injury or stress, and it seems that this process may be exploited therapeutically. "Islet neogenesis associated protein was the first and is now the most advanced example of such agents, and is currently in a late Phase II clinical trial," notes Rosenberg. Burn also highlights other approved agents that have been reported to have beneficial effects on functional β-cell mass, including glucagon-like peptide 1 analogues, gastrin, dipeptidylpeptidase 4 inhibitors and proton pump inhibitors (*Nature Rev. Drug Discov.* **9**, 187–188; 2010).

CureDM's Pancreate (human islet peptide), a 14 amino-acid peptide encoded by a portion of the human regenerating islet-derived 3α gene, is thought to stimulate islet neogenesis by triggering the differentiation of pancreatic progenitor cells. So far, preclinical studies have reported that Pancreate increased insulin production in human pancreatic ductal cell cultures and improved glycaemic control. Additionally, it increased islet numbers and normalized diabetes markers in mice with streptozotocin-induced diabetes (*Endocr. Pract.* **14**, 1075–1083; 2008).

Although Rosenberg thinks that as a better understanding of the mechanisms of islet neogenesis are elaborated, approaches to regenerative therapy of diabetes will undoubtedly take root, for Pancreate he cautions that: "There appear to be little robust data on which to evaluate its potential for use in humans and moreover, a safety profile has yet to be established."

Phase I trials for Pancreate are expected to begin later this year.