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Directed differentiation of progenitor cells towards an islet-cell phenotype

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Exogenous insulin administration and oral anti-diabetic drugs are the primary means of treating diabetes. However, tight glycaemic control, with its inherent risk of hypoglycaemia, is required to prevent the microvascular and macrovascular complications of the disease. While islet or pancreas transplantations offer a longer-term cure, their widespread application is not possible, primarily because of a lack of donor tissue, the burden of life-long immunosuppression, and eventual graft rejection. The rapid increase in the incidence of diabetes has promoted the search for alternative cell-based therapies. Here we review recent advances in the directed differentiation of both endocrine and non-endocrine progenitors towards an islet-like phenotype.

Biography

Arif Abed is a distinguished researcher at the Guy Hilton Research Centre, part of the Institute for Science and Technology at Keele University, UK. With a strong background in advanced scientific research, his work focuses on innovative approaches in his field of expertise. Known for his dedication to academic excellence, Arif has contributed to several groundbreaking studies, furthering knowledge and understanding in science and technology. His affiliation with Keele University underscores his commitment to impactful research and collaboration.