



International Stem Cell Collaboration

The AFDR is thrilled to announce that it has entered into an arrangement with the Israeli company, Kadimastem, to explore overcoming the need for insulin administration in people with type 1 diabetes.

The AFDR has bioengineered a device that when seeded with insulin-producing cells and implanted in diabetic animals normalizes blood glucose levels for up to 3 months.

Kadimastem has developed a way of differentiating human embryonic stem cells into insulin-producing cells that secrete insulin in response to glucose.

The two companies have agreed to seed the Kadimastem cells in the AFDR device and implant this into diabetic recipients, initially animals, and subsequently humans. Scientists in Australia and Israel are now actively engaged in the pre-clinical component of this project, which will take place initially in Sydney, and subsequently in Israel. It is anticipated that a human trial will take place in both countries.

The Australian research is taking place at The University of Sydney, with involvement of The Queensland University of Technology, where the 3D printing of the scaffold used in the device, is carried out. The Israeli research is occurring at Kadimastem's headquarters near the Weizmann Institute.

The intellectual property associated with the device is the subject of a patent, which was applied for in October 2016. The national phase of the application is scheduled to be entered into in April 2019.

Director of the AFDR, Professor Bernard Tuch, says: "My colleagues and I are excited by this collaboration to address a serious and growing problem, which affects at least 120,000 Australians and 21 million people worldwide, many of them children."



Speakers at the 27th Workshop of the NSW Stem Cell Network (l to r) Dr Itai Pelled, Prof Bernie Tuch, Dr Tom Loudovaris, Dr Kfir Molakandov, Dr Jacqueline Schiesser, Prof Doug Melton & Prof Toby Coates.

The relationship between AFDR and Kadimastem has been nurtured over the past year, starting with a visit by Professor Tuch to Israel in early November 2017. He met Chief Scientific Officer and co-founder of the company, Professor Michel Revel, a world-renowned immunologist. In June this year, Dr Kfir Molakandov, who heads the beta cell program at Kadimastem, came to Sydney and spoke at an international workshop on *Stem Cells and Diabetes Therapies*. There he met with Dr Auvro Mridha, who is conducting the experiments for the AFDR at the University of Sydney with Professor Tuch.

Support for the relationship between the AFDR and Kadimastem has been provided by The Department of Industry of the NSW Government, as well as by the Israel Innovation Authority as part of the joint Governments' Research and Development and Technological Innovation Program. The successful application was one of the first

funded by the Governments under this scheme, which was established by the then Premier of New South Wales, Mike Baird and the Prime Minister of Israel.

A condition of the Program is that funds need to be provided by the AFDR to match those provided by Government.

You are invited to be part of this international initiative, which is aimed at overcoming the need for insulin administration for people with type 1 diabetes. You will receive a Certificate upon your generous support of this worthy cause as well as a tax deductible receipt.

We look forward to updating you on the progress of this incredible science.