

Media Coverage

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Australian stem cell line offers fresh approach to diabetes cure

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Australian researchers have developed the country's first diabetes specific stem cell line, a major advance for patients suffering from the chronic disease.

The new stem cell line was generated through induced pluripotent stem (iPS) cell technology using skin cells from Type I diabetes patients without the use of embryos, eggs or cloning.

Monash Institute of Medical Research (MIMR) and the Sydney Cell Therapy Foundation have developed the line with almost half a million dollars backing from the Victorian and NSW Stem Cell Research Grant Program.

Victorian Innovation Minister Gavin Jennings announced the breakthrough today, coinciding with the AusBiotech Conference in Melbourne, and said the diabetes-specific iPS cell line was a significant achievement that would open the door to developing new therapies and eventually drugs to slow or stop diabetes.

"Australia's first iPS cell line is another example of how our world-leading stem cell researchers have the skills and expertise to take up novel stem cell technology that has global implications," he said.

The iPS technique reprograms a normal cell – such as a skin cell – using 3 to 4 genes added to the cell via viruses. The iPS cells behave like embryonic stem cells but do not use embryos, eggs, or cloning, avoiding any need to create, destroy, or harm any human embryos.

This breakthrough means Australian researchers and companies are now able to study the development of the disease in petri dishes, instead of inside patients.

Diabetes is the fastest growing chronic disease in Australia affecting 1.5 million Australians and the nation's sixth leading cause of death.

The Victorian and New South Wales Stem Cell Research Grant Program was created to develop new stem cell technologies to treat diseases like Parkinson's, Alzheimer's, cancer, heart disease, spinal cord injury and diabetes.

The program has funded two projects: the collaboration between the Monash Institute of Medical Research and Sydney Cell Therapy Foundation and the Australian Stem Cell Centre and Sydney IVF Ltd.

Dr Paul Verma, researcher at the Monash Institute of Medical Research said it is still too early to assume iPS cells are the preferable alternative to working with embryonic stem cells.

"We don't know whether iPS cells and Embryonic Stem cells will recapitulate the disease in the same way which is why it is important for researchers to have a range of approaches to use in the development of new treatments for diseases such as diabetes," he said.