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News

Breastmilk to provide stem cells

THE UNIVERSITY OF WESTERN AUSTRALIA
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Human breastmilk has the potential to help people suffering from diseases including Parkinson's disease and diabetes, according to a researcher at The University of Western Australia.

Dr Foteini Hassiotou presented her findings at the National finals at the 2011 AusBiotech Conference in Adelaide and was the national winner of the AusBiotech-GSK Student Excellence Awards.

"The benefit of obtaining stem cells from breastmilk is that they can be accessed non-invasively."
Image: ChepeNicoli/iStockphoto

Dr Hassiotou, a member of the UWA Hartmann Human Lactation Research Group, has discovered that human breastmilk contains stem cells which are able to turn into not only breast cells, but also cells of the bone, cartilage, fat, brain, liver and pancreas, depending on the medium in which they are grown.

"The benefit of obtaining stem cells from breastmilk is that they can be accessed non-invasively, unlike getting them from the bone marrow, umbilical cord blood or peripheral blood," she said.

"If we can understand the properties of these cells and their role in the breast and in the breast-fed baby, we can use them as models for breast cancer research and in innovative stem cell therapies.

"Stem cell therapy is a very promising technology. Every year there are more than 1,000 stem cell transplants in Australia and over 60,000 around the world. The limitations of the current therapies are that the transplanted stem cells are accessed using invasive methods and have limited differentiation potential. Breastmilk offers a new exciting opportunity for stem cell

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"Stem cell therapy is a very promising technology. Every year there are more than 1,000 stem cell transplants in Australia and over 60,000 around the world. The limitations of the current therapies are that the transplanted stem cells are accessed using invasive methods and have limited differentiation potential. Breastmilk offers a new exciting opportunity for stem cell therapies, with the potential to benefit not only the mother and child, but also other people."

Dr Hassiotou said that she is currently examining the in vivo transplantation potential of milk stem cells into animals.

Her supervisors are Winthrop Professor Peter Hartmann, head of the 30-year old Human Lactation Research Group of UWA, and Professor Luis Filgueira, an expert in cell development and function.