

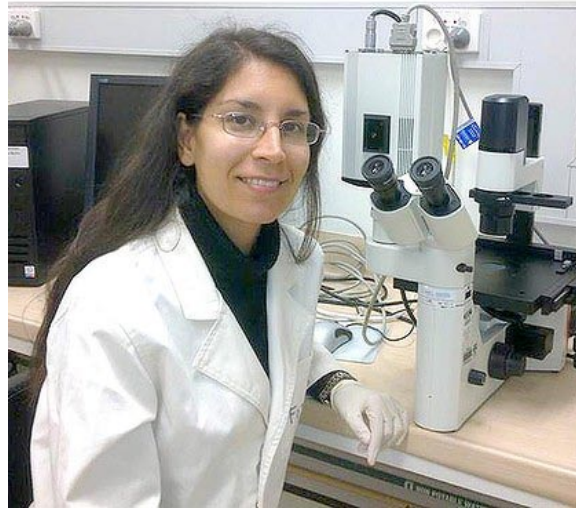
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UWA discovers 'ethical' embryonic-like stem cells in breast milk



UWA PhD student Foteini Hassiotou has discovered stem cells can be obtained from breast milk.

Serious and fatal diseases such as pancreatic cancer, Parkinson's disease and diabetes may eventually be treated using stem cells from breast milk, researchers from the University of Western Australia have discovered.

UWA PhD student Foteini Hassiotou has potentially broken through the greatest hurdle in stem cell research - the ability to ethically obtain stem cells in a non-invasive manner.

Her finding that stem cells from breast milk can be re-programmed to become other body cell types such as bone, fat, liver and brain cells, could reduce the need to use embryonic stem cells and therefore fast-track future therapies.

Dr Hassiotou's research follows the 2008 discovery by a team of UWA scientists that breast milk contained embryonic-like stem cells.

Her work was boosted on Sunday when she won the AusBiotech-GlaxoSmithKline national student excellence award. She will now present her findings at an international conference.

Dr Hassiotou said her research results were particularly important because breast-milk cells could be accessed non-invasively and could be easily obtained, unlike embryonic stem cells.

Using new technology called induced pluripotent, scientists could take the breast milk stem cell and reprogram it to become another stem cell and then attempt to use it in therapies.

"The need currently is to find stem cells which we can access ethically, non-invasively and which have the potential to become everything," Dr Hassiotou said.

"The breakthrough here is that breast milk seems to offer such an opportunity.

"It's plentiful and you can get fresh breast milk and isolate and use it for treatment of various diseases such as Parkinson's and diabetes etc."

Dr Hassiotou will test her hypothesis by conducting animal transplants during the next few months.

AusBiotech chairwoman Deborah Rathjen said Dr Hassiotou's work had the potential to fast-track cures for fatal diseases.

"The whole area of stem cell therapy is a really developing field and Foteini's work helps get over one of the limiting factors in the study of stem cells and that's having access to a source of stem cells that is non-invasive and seen as being ethical," Dr Rathjen said.

"Stem cell therapy is a therapy of the future. It holds a lot of promise and to be able to have these kinds of cells in bigger numbers and to get them ethically and [to know that] they behave in ways that allow you to differentiate them into cells that at some point we may want to put back into people is an important thing."

Dr Rathjen said the discoveries also emphasised the benefits of breast milk for infants.

"One of the things we don't yet fully understand is ... what role do these stem cells play once they've been ingested; what do they help with?" she said.

"It's a very exciting field."

Dr Hassiotou said winning the national award would help boost the profile of her work and the importance of breast milk.

"It's a great thing for this research because people are starting to realise what a breakthrough it is and how important it can be for many years to come to treat people with diseases, to understand how cancer happens and potentially discover a treatment for it," Dr Hassiotou said.

"[The award also will promote] why breast milk is also good for the baby in addition to its nutrition."