

NEWS RELEASE * For immediate distribution *

Embryonic stem cell research moves another step ahead

26 February 2006, Melbourne - Melbourne scientists have identified a new method of detecting abnormal embryonic stem cells before they change into cancerous cells – a discovery which could circumvent one of the greatest challenges facing this field of research.

Human embryonic stem cells have great potential as a source of healthy normal tissue to repair or replace diseased tissues or organs. However, scientists have found that after prolonged cultivation in the laboratory, some embryonic stem cells develop serious genetic abnormalities, similar to those seen in human cancers. Detecting and monitoring these crucial changes, and understanding what causes their activation in embryonic stem cell culture has, until now, been a major hurdle.

Work on these abnormal cells was initiated and completed under the direction of Professor Martin Pera, Director of the Embryonic Stem Cell Program in the laboratories at the Australian Stem Cell Centre in Melbourne. Dr Ernst Wolvetang and Ms Daniella Herszfeld from the Monash Institute of Medical Research and the Australian Stem Cell Centre were joint first authors on the study, which was published online today in the prestigious international journal *Nature Biotechnology*.

“We discovered that the abnormal cells carry a particular marker molecule on their surface called CD30. The emergence of this marker appears to give the cells a survival advantage, allowing them to grow in sub-optimal conditions. The marker is found on the cell surface in some forms of human cancer,” explained Dr Wolvetang.

“We believe the appearance of this marker heralds a change in the stem cell that precedes the development of abnormalities,” he said.

Dr Hugh Niall, Chief Executive Officer of the Australian Stem Cell Centre, said the discovery was a major advance for embryonic stem cell research.

“One of the greatest problems facing embryonic stem cell research has been the emergence of cancerous cells. Essentially, this research discovery brings us to a point where we can forge ahead in developing improved methods for cell growth that maintain normal stem cell development,” said Dr Niall.

The CD30 project is a collaborative research effort between the Australian Stem Cell Centre, Monash Institute for Medical Research, Monash University as well as research groups in the Netherlands, Israel and the United States.

The article can be found via www.nature.com.

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Background - Australian Stem Cell Centre

The Australian Stem Cell Centre is Australia’s Biotechnology Centre of Excellence. The Centre has partnered with nine leading Australian universities and research institutions and brings together a critical mass of outstanding Australian stem cell research that is internationally competitive and recognised.

The Centre's principal objective is to integrate a national multi-institutional research and discovery program to develop treatments for serious disease through the application of stem cells and related technologies.

The Australian Stem Cell Centre is funded by the Commonwealth and Victorian Governments.

For further information or to arrange an interview please contact:

Michelle Singe
Public Affairs Director
Australian Stem Cell Centre
Tel: +61 3 9271 1115
Mobile: +61 423 056 952

James Tonkin
Gavin Anderson & Company
Tel: +61 3 9654 6555
Mobile: +61 413 432 775

Julia Robertson
Personal Assistant to Public Affairs Director
Australian Stem Cell Centre
Tel: +61 3 9271 1149