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PRESS RELEASE

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THERAPEUTIC CLONING MUST START NOW, SAYS STEM CELL EXPERT

The UK should now develop a comprehensive programme to clone human embryos from which stem cells can be harvested for new therapies, says a stem cell expert from London.

Speaking today at BioScience2004 in Glasgow, Dr Stephen Minger, director of the Stem Cell Laboratory at King's College said, "It is vital that we do not delay learning how to perform cell nuclear replacement in human cells, the technique required for therapeutic cloning, because new stem cell treatments for diseases such as diabetes and Parkinson's are still many years away. It's going to take us just as long to figure out how to do this safely and reproducibly."

Cell nuclear replacement (CNR) involves removing the nucleus of a human donor egg, replacing it with the genetic material from the nucleus of a skin, heart, or nerve cell, for example, from a patient and stimulating this cell to divide. Once a group of cells has been formed, stem cells can be extracted a few days later.

So far, the South Korean research team are the only group in the world to have successfully cloned a human embryo, but scientists do not yet know whether this can be replicated and whether the stem cells derived from such an embryo could possibly function therapeutically.

Dr Minger is adamant that cloning human embryos for therapeutic purposes is not 'the slippery slope' to creating designer babies. "There is a total ban in the UK and most of the rest of the world on reproductive cloning," he reminded delegates. "And reproductive cloning must not be confused with therapeutic cloning."

Someone who has type 1 diabetes, for example, currently has to inject themselves with insulin everyday. The ultimate goal, therefore, is to generate an embryonic stem cell line that is genetically identical to the person for whom new insulin cells would be created, thus reducing the risk of rejection or the need for suppressive drugs to suppress the immune system.

However, even if CNR is perfected, the result is still just a line of human embryonic stem cells. "Cloning embryos in itself does not provide a therapy, so now is the time to start to work out how to differentiate these cells into specific types. Then we have to carry out safety tests before attempting to treat people for spinal injury or diseases like Parkinson's disease, stroke or diabetes," he said.

Research into human cloning and human embryonic stem cells is highly regulated and Dr Minger is convinced that such tight regulation helps, not hinders, progress in this potentially powerful form of treatment for many diseases in the future. "We have to look ahead. We are learning how to develop cell lines, we have the funding, all the regulations are in place. Now we just have to put it all together," he concluded.

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Notes to Editors

BioScience2004 is hosted by the Biochemical Society – www.biochemistry.org

Dr Stephen Minger is Director of the Stem Cell Laboratory, King's College, London. He was awarded one of the first two licenses granted by the Human Fertilisation and Embryology Authority for research into human embryonic stem cells. Last summer, researchers at King's College London generated a line of human embryonic stem cells for the first time in the UK.