Dr. Andras Nagy

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Nagy András matematikus szakra járt az ELTE-re, de már diákkén elkezdett dolgozni Csányi Vilmos professzor etológiai kutatócsoportjában. A nála megszerzett egyetemi doktori és kandidátusi fokozat után a ’80-as évek második felében az ELTE Biokémiai Tanszék kötelékében a Gödi Biológiai Állomás területén önállóan létrehozott egy kísérleti embriológia laboratóriumot, ahol már 1989-ben egérembrióból származó embrionális őssejt tenyészetet tudtak fenntartani. Abban az évben került ki Janet Rossan fejlődésbiológiával foglalkozó professzor meghívására vendégkutatóként a torontói Mount Sinai Kórház kutatóközpontjába. Azóta ott végzi világszínvonalú kutatásait. 2009-ben felkerült a Scientific American magazin 10-es toplistájára (Bill Gates társaságában), amelyen azok a személyek szerepelnek, akik a szerkesztőség szerint a legtöbbet tették az orvostudomány, a közegészség és a környezet védelmének érdekében. A kutatóintézete így mutatja be őt:

In June 2005, Dr. Andras Nagy put Canada on the map of stem cell research by establishing the country's first, and to date only, human embryonic stem cell lines. On March 1, 2009, Dr. Nagy once again captured the world's attention with another stem cell research breakthrough: the discovery of a new non-viral method of creating stem cells from other cells of the body that could lead to possible cures for devastating diseases including spinal cord injury, macular degeneration, diabetes and Parkinson's disease.

Previous approaches to establish stem cells from adult cells required the use of viruses to deliver the required genes, a method that carries the risk of damaging the DNA. Dr. Nagy's method not only does not require viruses but the stem cell transgenes necessary for the process of reprogramming can be seamlessly removed after they created stem cells. Therefore this method overcomes a major hurdle for the future of safe, personalized stem cell therapies in humans. Dr. Nagy's new method of generating stem cells does not require embryos as starting points and could be used to generate cells from many adult tissues such as a patient's own skin cells.

Dr. Nagy's research is a huge step forward on the path to new stem cell-based therapies and indicates that researchers at the Lunenfeld are at the leading edge of regenerative medicine. Regenerative medicine enables the human body to repair, replace, restore and regenerate its own damaged or diseased cells, tissues and organs.

Joining Mount Sinai Hospital in 1988, Dr. Nagy has been involved in mouse embryonic stem cell research since its early days. His research resulted in an important development in cancer research in 1996 that provided a new tool for researchers and pharmaceutical companies to test new and existing treatments for cancer.

Dr. Nagy has developed a broad spectrum of genomic technologies now used around the world. These technologies assist the study of gene function in development and disease, and are important tools in the development of stem cell based therapies. By using technologies to direct gene expression, scientists will gain control of stem cell behaviour, propagation and differentiation, which will be essential if stem cells are to be used to treat human disease.

With respect to future clinical use of these stem cells, the existence of mutant cells still introduces a significant risk of unexpected behaviour after cell transplantation, including the possibility of cancer formation. Recently, Dr. Nagy and his team found that the early phase of the reprogramming process for induced Pluripotent Stem (iPS) cells is the root cause of acquired mutations. Dr. Nagy and his lab are currently trying to protect the integrity of the genomic DNA of iPS cells during the reprogramming process by ensuring the safety of stem-cell-based therapies before they can be brought to clinical therapies and treatments.

Legutóbbi publikációi:

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