



Production Of Autologous Eggs From Adult Human Ovarian Stem Cells For Use In IVF

The Technology

The current incidence of female infertility is at least 2 million cases per year and growing. Many couples faced with infertility are unable to become pregnant after first line therapies such as ovulation induction, intrauterine insemination, or reproductive surgery. For these couples, the logical next step is to explore Assisted Reproductive Technologies (ART). The most widely known and successful of these is in vitro fertilization (IVF). The CDC estimates that the IVF success rates (treatments resulting in a live birth) range between 8-31% depending on the age of the patient. One of the main reasons for IVF failure is poor ovarian response to produce quality eggs which is exemplified in older patients or those who have experienced early menopause. Researchers at the University of Tennessee have discovered adult ovarian stem cells that are capable of differentiation into distinct cell types, including viable eggs. These cells have been obtained from both functional and non-functional ovarian tissue and have been shown to develop into mature oocytes in vitro. These oocytes have the potential for both autologous and allogeneic applications. Coupling this technology with the current knowledge of embryonic transfer will increase the likelihood of infertile women to become pregnant with a child of their own.

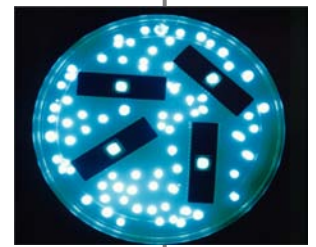
Benefits

- Potential for the production of autologous eggs from the patient's own functional or non-functional ovarian tissue, including postmenopausal ovaries
- Cells can be harvested relatively easily from ovarian surface or small ovarian biopsy by a laparoscopy technique yielding more cells with potentially higher quality for fertilization than traditional egg harvesting techniques.
- Technique allows women with reduced fertility and premature menopause, which lack follicles in their ovaries, to have a chance of conceiving their own child.

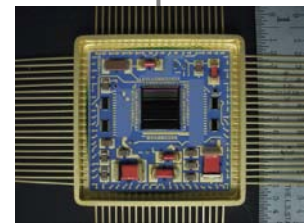
AGRICULTURE



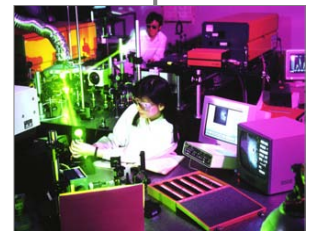
BIOTECHNOLOGY



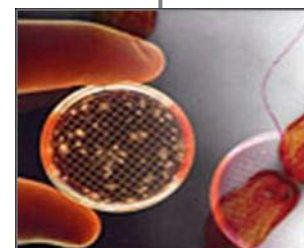
ENGINEERING



MATERIALS



MEDICINE





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Inventor

Dr. Antonin Bukovsky is a Professor of Obstetrics and Gynecology and Reproductive Biology in the Graduate School of Medicine at the University of Tennessee. The main focus of his research is female reproductive issues. He has produced several publications on reproductive biology including publications on stem cell research in female reproduction. He has several international collaborators and has presented at several meetings on his research in reproductive biology.

Contact

The University of Tennessee Research Foundation (UTRF) is a non-profit corporation responsible for commercializing University of Tennessee technologies and for supporting University research. UTRF is presently seeking parties interested in learning more about this technology and in exploring possible research and/or commercialization arrangements.

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