

LifeCell – Daily News Update

May 18 , 2009

Key Industry News:

Publication	argusleader.com
Headline	Research must respect life
Gist of the article	<p>We all desire cures for debilitating diseases with which we or our loved ones might suffer. Our creator has blessed man with wisdom to conquer those noble goals. We've come to a crossroad in medical research, however. Will we go down the moral path that respects human life and has proven successful? Or will we pursue an unethical and futile course?</p> <p>Stem cell science is not controversial. Killing embryos is. Only research that requires the destruction of a human embryo is objectionable. What the media and proponents of embryonic stem cell research ignore is that embryonic stem cells have not cured any diseases or successfully treated a single patient. In fact, embryonic stem cell research has yielded only unstable, deadly tumors and patient immune rejection.</p> <p>The good news is that there are ethical alternatives to embryonic stem cell research that are working, treating and curing without the destruction of the tiniest human life. Skin cells that are reprogrammed to act like embryos - induced pluripotent stem cells - hold the same research potential as stem cells from embryos.</p> <p>The induced pluripotent stem cells can be created from the body cells of anyone, so the ensuing stem cell lines are plentiful and avoid the high risk of tissue rejection. They already have been used to make heart muscle, brain neurons, motor neurons, blood and insulin-secreting cells.</p> <p>One of the researchers who discovered the induced pluripotent stem cell alternative was the first to identify embryonic stem cells. Dr. James Thomson, a University of Wisconsin stem cell scientist, stated, "If human embryonic stem cell research does not make you at least a little bit uncomfortable, you have not thought about it enough."</p> <p>Dr. Mehmet Oz, a cardiovascular surgeon at Columbia University, appeared on the "Oprah Winfrey Show" and in the presence of Oprah and Michael J. Fox declared that the "stem cell debate is dead" because of the successes using adult stem cells and induced pluripotent stem cells.</p>

	In an article in the March 4 issue of U.S. News and World Report titled "Why embryonic stem cells are obsolete", Dr. Bernadine Healy, the former head of the National Institutes of Health, wrote that "adult stem cell research successes have 'diminished' the prospect that embryonic stem cell research is the future of regenerative medicine."
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Publication	newsroom.ucr.edu
Headline	Stem Cell Research Made Safer with Latest Discovery
Gist of the article	<p>new development in stem cell research has resulted from a completed study by a collaboration of scientists using the drug Rapamycin to inhibit mTOR, an intracellular protein necessary in cell proliferation. UCR's Jiayu Liao, assistant professor in the Department of Bioengineering at Bourns College of Engineering, recently published a paper on the results in the Proceeding of the National Academy of Sciences dealing with human embryonic stem cell pluripotency.</p> <p>His team inhibited mTOR using Rapamycin, a drug approved by the Food and Drug Administration, and found that pluripotency (the ability to create all cell types) was impaired, stem cell self-renew was prevented, and endodermal and mesodermal differentiation were enhanced.</p> <p>"Stem cells can potentially develop into cancer," Liao said. "That's why it is important to be certain that any stem cells introduced into patients do not remain pluripotent, which has the potential to form tumors. The use of Rapamycin could potentially prevent this problem."</p> <p>Stem cells can differentiate into and of the three germ layers: the endoderm (interior stomach lining, gastrointestinal tract, the lungs), the mesoderm (muscle, bone, blood, urogenital), or the ectoderm (epidermal tissues and nervous system). Pluripotent stem cells can give rise to any fetal or adult cell type. However, alone they cannot develop into a fetal or adult animal because they lack the potential to contribute to extra embryonic tissue, such as the placenta.</p> <p>"You don't want to maintain pluropotency when using stem cells for treatment," Liao said. "You want them all to differentiate into one of the three germ layers." The discovery could have a significant impact on the future use of stem cells in regenerative medicine, he added. Rapamycin itself is also an immunosuppressant which prevents rejection of organ transplantation from the host.</p> <p>"It really opens the door for stem cell research towards translational medicine" he said. In addition, because the drug is FDA approved, there is no need to order clinical trials for safety so the method can be placed into treatment immediately.</p>

Publication	bbc.co.uk
Headline	The hunt for a stem cell miracle
Gist of the article	<p>For Wilma Clarke, there is no doubt. Her three-year-old daughter, Dakota, born with a rare condition that left her almost blind and suffering from balance problems, can see things that she could not see before.</p> <p>"I know she is seeing because she is a completely different child," Mrs Clarke told BBC's Panorama. Dakota's parents say her improvement is down to controversial stem cell treatment that she underwent in February - at a cost of £30,000 - at the Beike Biotech clinic in Qingdao, northeast China.</p> <p>The expectations are high and they are not sure that they want to know that you think they have wasted their time and money Dr Larry Tychsen, St Louis Children's Hospital, Missouri</p> <p>The family, from Newtownabbey in Northern Ireland, tapped into their savings and raised the £20,000 cost of the treatment, plus their travel expenses, in a series of local fundraisers.</p> <p>The Clarkes are among a growing number of what scientists term "stem cell tourists", people looking abroad for therapy which - with rare exceptions - is not licensed for use in the UK.</p> <p>Its effectiveness is questioned by mainstream scientists, who worry that desperate families are taking risks and spending vast sums on treatments that are years, possibly decades, away from being successfully developed.</p>

Publication	google.com
Headline	PM urged to help stem cell research
Gist of the article	<p>A charity has called on Prime Minister Gordon Brown to guarantee millions of pounds for research into stem cell therapies for multiple sclerosis.</p> <p>The MS society, which represents sufferers of the disease, said without large-scale government support for clinical trials the new hope offered by stem cell science may be lost.</p> <p>It wants to see a specific injection of £3 million to move stem cell technology from the laboratory bench to the hospital ward.</p> <p>Four years ago the Government announced a £50 million windfall for stem cell science.</p> <p>But since then little has been done to promote research into practical stem cell treatments for conditions such as multiple sclerosis, the MS Society claims.</p> <p>Stem cells are immature cells that can develop along a number of different pathways.</p> <p>Scientists hope some of them may be used to create replacement neurons for brain and nervous system diseases, or new immune system cells.</p>

Both could be useful in the treatment of MS, which is an auto-immune disease.

MS occurs when immune system cells attack myelin, the fatty insulating sheath that protects nerve fibres and helps them to transmit messages efficiently.

More than 85,000 people in the UK suffer from the disease, which causes symptoms ranging from mild tingling and loss of balance to full blown paralysis.