

**LifeCell – Daily News Update**

**May 6 , 2009**

**Key Industry News:**

Publication	sciencealert.com
Headline	<a href="#">Stem cells regrow muscle</a>
Gist of the article	<p>For the past 40 years scientists have been telling us that stem cells will revolutionise medicine, but we've yet to see that potential materialise. That may soon be about to change – after decades of groundwork Australian scientists at the University of New South Wales have become the first in the world to regrow muscle tissue in mice using adult stem cells.</p> <p>The breakthrough could help sufferers of muscle wasting diseases such as muscular dystrophy. Normally incurable, muscular dystrophy affects around 21,000 Australians.</p> <p>The implications of being able to regrow whole tissue groups are enormous. The way is now set for scientists to regenerate areas of the liver, pancreas, spine and brain, which means we could one day find a cure for Alzheimer's, paralysis and diabetes. "What has been the realm of science fiction is looking more and more like the medicine of the future," said Professor Peter Gunning, one of the lead researchers.</p> <p>Scientists worldwide have been trying to grow muscles for years, but Gunning's team succeeded because it first 'weeded out' the old cells using chemotherapy. This gave the introduced stem cells the time they needed to establish themselves and regrow the muscle without competition.</p> <p>The scientists are now looking to trial the treatment in humans. As they used adult muscle stem cells, which can be obtained from a willing donor, there are no legal or ethical complications. However, only a few types of adult stem cells have been discovered and properly characterised. In the future researchers may need to turn to embryonic stem cells to treat a broader range of diseases, which will raise ethical issues.</p> <p>Embryonic stem cells are taken from human embryos, making their use controversial, but they have the potential to develop into any tissue type in the human body. This includes nerves, which could one day be used to help people paralysed by spinal injuries walk again.</p> <p>The legal and ethical debate surrounding embryonic stem cells has</p>

	<p>constrained the scientific community's understanding of them, but this may soon no longer be the case now that US President Barack Obama has reversed the funding ban on embryonic stem cell research in the US. "New tools will be developed, new ideas will come out and, because it's a global community, we'll all be benefitting", says Gunning. He adds, "It's clear that stem cell therapy is going to change medicine." It may have been a long time coming, but stem cells are finally starting to measure up to their hype.</p> <p><b>How it works</b></p> <p>Scientists have failed to regrow muscle tissue in the past because the donor stem cells that they used were quickly out-competed by existing cells. This was overcome by making them resistant to chemotherapy and then using chemotherapy to wipe out the old tissue. The same process can be used to regenerate tissue in the brain, pancreas or liver. If scientists could learn to use embryonic rather than adult stem cells they could potentially regrow any tissue type in the body.</p>
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<b>Publication</b>	minnesotaindependent.com
<b>Headline</b>	<a href="#">University stem cell breakthrough could reignite stem cell battle</a>
<b>Gist of the article</b>	<p>University of Minnesota researchers are reporting a major advance in the field of embryonic stem cell research that undercuts the anti-abortion movement's — and Gov. Tim Pawlenty's — chief argument against state funding for the research.</p> <p>The researchers used human embryonic stem cells (hESCs) to create immune cells to fight cancer and found a 100-percent success rate at eliminating cancerous tumors in 13 trials. The researchers also used human umbilical cord blood cells, the type of cells anti-abortion activists say are equal to hESCs, and only five trials of 13 saw the successful elimination of cancerous tumors.</p> <p>"This is the first demonstration of anti-cancer activity in a living organism by cells derived from human embryonic stem cells," <a href="#">said study leader Dan Kaufman</a>, an associate professor of medicine and associate director of the University's Stem Cell Institute, in a statement. "The superior performance by cells with an hESC lineage points to a crucial role for hESCs in developing new cell-based cancer therapies."</p> <p>The Minnesota Legislature passed a bill in 2008 that would have allowed state funding to be used for embryonic stem cells research, but it was <a href="#">met with Pawlenty's veto pen</a>. He did so at the behest of anti-abortion group Minnesota Citizens Concerned for Life.</p> <p>"The biotech industry wants you to pay for its ruinous research," says MCCL's anti-embryonic stem cell pamphlets, "but not even a lab mouse has ever benefited from embryonic stem cell research."</p>

	<p>All thirteen of the successful University of Minnesota trials eliminated cancerous tumors in lab mice.</p> <p>Because of Pawlenty's veto last year, legislators have taken a different approach to getting state support for hESC research. Instead of a bill to allow state funding for the research, Rep. Phyllis Kahn, DFL-Minneapolis, has put forward a bill that requires fertility clinics to inform patients about the options for discarded embryos — including stem cell research.</p> <p>But Republican House members want to eliminate research on viable embryos. Their bill, the Minnesota Hope Act, would limit research in Minnesota to “naturally dead” embryos. Reps. Matt Dean of Dellwood, Laura Brod of New Prague, Steve Gottwalt of St. Cloud, Joe Ward (DFL) of Brainerd, Tom Emmer of Delano, Tara Mack of Apple Valley, Jim Abeler of Anoka and Mary Ellen Otremba (DFL) of Long Prairie.</p>
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Publication	bizjournals.com
Headline	<a href="#">Pfizer licenses UW stem cells</a>
Gist of the article	<p>Pharmaceutical giant Pfizer Inc. has agreed to license human embryonic stem cell patents from the University of Wisconsin-Madison for the development of new drug therapies.</p> <p>The license with the university's patent and licensing arm, the Wisconsin Alumni Research Foundation, provides Pfizer the rights to work with human embryonic stem cells for drug research and discovery. Terms of the licensing agreement were not disclosed.</p> <p>“Our license with WARF provides us with information and materials that will allow us to use their cell lines to explore a whole new range of therapies,” said Ruth McKernan, chief scientific officer of Pfizer Regenerative Medicine. “Stem cells can be used to create specialized human tissue. Our scientists will determine how new medicines may be able to improve the way stem cells regenerate damaged tissues. We will be optimizing the production of cells that could, one day, be used for therapeutic purposes.”</p> <p>Stem cell research, pioneered at UW-Madison by biologist James Thomson, is viewed by many to be the gateway to finding cures to debilitating neurological and muscular diseases.</p> <p>“To have these two giants in the field of biopharmaceutical research and stem cell research come together brings us one step closer towards finding relief from diseases like diabetes, Alzheimer's, Parkinson's, multiple sclerosis and cancer,” Wisconsin Gov. Jim Doyle said about the licensing</p>

agreement.

Pfizer researchers and scientists are working to discover and develop new ways to treat and prevent life-threatening and debilitating illnesses, as well as to improve wellness and quality of life.

In November 2008, Pfizer launched the Pfizer Regenerative Medicine research unit. This independent research organization will build on Pfizer's experience in this field and recent progress in understanding the biology of human embryonic stem cells. Pfizer's initial research in this area focused on the development of drug discovery tools and now expands into developing regenerative medicines that could benefit millions of patients worldwide.