

LifeCell – Daily News Update

April 29 , 2009

Key International Research News:

Publication	Science Daily
Headline	<u>Stem Cell Focus For IBD Wound Healing</u>
Gist of the article	<p>Scientists at The University of Nottingham are investigating whether stem cell markers could have a role to play in speeding up wound healing in patients suffering from inflammatory bowel disease (IBD).</p> <p>The study could eventually lead to the development of new drugs which use natural molecules to spark the recovery of patients suffering from ulcerative colitis and Crohn’s disease, reducing their risk of associated complications such as scarring, bowel obstructions and tumor growth.</p> <p>Funded with a £118,500 grant from the National Association for Colitis and Crohn’s Disease (NACC), the two-year project is being led by Professor Mohammad Ilyas in the University’s Division of Pathology.</p> <p>He said: “The study will focus on the molecule CD24 which is a stem cell marker and which plays a key role in cell proliferation and the migration of healthy cells to a damaged area to restore normal tissue. “CD24 is a small molecule attached to the cell membrane which has been recently reported as a marker of stem cells in the colon. It occurred to us that CD24 might have a role to play in IBD and during further studies we found that it was indeed present in sections of diseased bowel.”</p> <p>IBD affects around one in 400 people in the UK. Common symptoms include inflammation and ulceration of the intestine and colon, pain, severe diarrhoea, tiredness and weight loss. The cause of the disease is yet to be definitively identified, although scientists believe it could be due to a combination of genetic predisposition and environmental factors. Currently, there is no cure and patients manage their condition with a mixture of lifestyle changes, anti-inflammatory drugs and, in severe cases, surgery.</p> <p>Professor Ilyas added: “The power of the gut to heal the damage caused by acute episodes of inflammation is remarkable and frequently the gut lining reverts to normal. Anti-inflammatory drugs help this process along and allow the wound healing to begin earlier than it would naturally.</p> <p>“In the future, it may be possible to use a variety of therapies (possibly including gene therapy) to manipulate the expression of the CD24 molecules on cells to promote even more rapid healing. This may mean less scarring, bowel obstruction and fistulation and less</p>

	<p>chance of developing tumors resulting from persistent inflammation. As a result of this, it may also reduce the chance of needing surgery further down the line.”</p> <p>In the early stages of the project, the pathologists will be using cell lines in the lab to study CD24 at a cellular and molecular level to discover the mechanisms by which it operates and encourages cell migration and other associated molecules that are co-expressed. They will then examine diseased IBD tissue to establish whether what they have observed in the lab is occurring in reality. It is hoped the findings will lead to further clinical work to look at the possible benefits of CD24 in allowing IBD patients to more effectively manage their disease.</p> <p>The CEO of NACC, Richard Driscoll, explains, “Since 1984, NACC members have raised over £4.5 million and more than 100 research awards have been made to hospitals and universities throughout the United Kingdom. This year our Medical Research Committee selected three studies to receive NACC research awards which we hope will contribute to finding improved treatments and ultimately a cure for IBD. We welcome Professor Ilyas’ work on CD24 in seeking a better understanding of the gut healing process and how it may be enhanced in inflammatory bowel disease.”</p>
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Key International Industry News:

Publication	<u>Pharma Focus</u>
Headline	<u>Pfizer taps UCL for stem cell expertise</u>
Gist of the article	<p>Pfizer will work with researchers from University College London in the UK to try to develop stem cell-based therapies for macular degeneration, a disease affecting the eye which affects around a quarter of people aged over 60.</p> <p>The deal brings pharma backing to the London Project to Cure Blindness, which aims to use human embryonic stem (hES) cells to replace the cells at the back of the eye which are lost in age-related macular degeneration (AMD).</p> <p>Pfizer will help fund research in the project, and will also contribute its expertise in manufacturing, clinical trials and regulatory affairs to the project, with the aim of bringing a therapy into clinics in 2011.</p> <p>The announcement came as UCL officially opened its Centre for Stem Cells and Regenerative Medicine, which aims to bring together the stem cell-related research of all the scientists working at the University.</p> <p>Critically, the approach could be valuable in the treatment of both the 'dry' and 'wet' form of AMD. The dry form in which cells of the retina waste away and die off is the most common, accounting for 90% of AMD patients, but has no current or emerging therapy.</p>

	<p>The wet form, caused by growth of new blood vessels between the retina and the back of the eye, affects 10% of patients.</p> <p>The pharmaceutical industry has been more successful in tackling this form, with a number of treatment options available, including Pfizer's Macugen (pegaptanib), Novartis' Lucentis (ranibuzumab) and Roche's Avastin (bevacizumab).</p> <p>The London Project to Cure Blindness is led by Professor Pete Coffey of UCL's Institute of Ophthalmology, who said Pfizer's involvement would help usher the technology through the regulatory process, and make it possible to manufacture the therapy "on a much larger scale".</p> <p>The Pfizer deal "has huge implications, not only for our project, but for the field of regenerative medicine as a whole, "added Prof Coffey."And it is great that Britain is at the forefront of this research."</p> <p>Under the terms of the deal, once preclinical testing has been completed Pfizer has the option to conduct clinical testing and has commercial rights to any resulting product.</p> <p>The drug maker has a clear ambition to be at the forefront of stem cell research, and opened a dedicated Regenerative Medicine research unit in November 2008, based in the UK and the US.</p> <p>Pfizer's US facility - in Cambridge, Massachusetts - is expected to employ up to 20 scientists and focuses on using stem cells to develop therapies for cardiac disorders and cancer.</p> <p>The UK facility - also in Cambridge - focuses predominantly on age-related and degenerative disorders with particular interest in disorders of the central and peripheral nervous system, and is expected to employ around 60 scientists once it's operating at full strength.</p> <p>The Regenerative Medicine unit is in-line with big pharma's current trend of allowing greater independence and autonomy to individual research units in the hope of stimulating a nimble, biotech-like research culture. That includes a lot of freedom in forging research alliances and collaborations.</p>
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Key International Research News:

Publication	glgroup.com
Headline	<u>Stem cells for transplantation from own body fat in Multiple Sclerosis. Case reported</u>
Gist of the article	Implications Three patients with MS were treated using stem cells from their own

body fat. After the procedure all patients improve their clinical condition (seizures and better able to walk). All three patients in this study showed dramatic improvement in their condition. No adverse events.

Analysis

This a potential treatment for MS patients.

We don't have data from these patients is they were RR-MS or progressive forms. The other concern is that seizures are uncommon in MS patients, less than 15%). The only conclusion with this procedure was that had a good tolerance. A phase I clinical trial might be recommended with more patients but we suggest the article with the recommendations for Stem Cells Clinical Trials:

Duncan ID et al. Stem cell therapy in multiple sclerosis: promise and controversy. Multiple Sclerosis 2008; 14: 541-546.