LifeCell – Daily News Update
July 14, 2009

Direct Coverage

Publication	business-standard.com
Headline	India Inc finds stem cells a healthy business
Gist of the article	15 firms, 20 research outfits eye Rs 2,200-crore market.In March this year, Bangalore-based Stempeutics Research received clearance from the Drug Controller General of India to conduct human clinical trials to develop drugs using stem cells. With this, India became the first country after the US to allow human clinical trials to develop drugs by using dormant cells in the body that have natural regeneration capabilities. Once injected into a patient, the stem cells can be controlled with a simple magnet to direct them to the damaged area and cure it. Welcome to the stem cell research boom in India – something that revived eight-year-old Pramita Aich, who was suffering from abdominal cancer. Aich underwent bone marrow stem cell transplant at the Netaji Subhas Chandra Bose Research Institute in Kolkata. It was the first such successful treatment in eastern India. The growth has been phenomenal. The Stem Cell Global Foundation, a New Delhi-based organisation promoting stem cell research, estimates the business to be growing at a compounded annual growth of 15 per cent and cross Rs 2,200 crore next year. The market was nearly non-existent a few years ago. Karan Goel, chairman and founder of the foundation, says the growth estimates for other Asian countries, except China, are less than that for India. The reason is simple: Therapies using stem cells are giving hope to millions of patients afflicted with chronic diseases. Globally, stem cells are used to treat over 130 diseases and it is estimated that more than 500 clinical trials are being done to develop therapies using stem cells. Indian companies are becoming an important part of this revolution, helping treat patients with diseases ranging from eye problems to heart disorders. Apart from Stempeutics, at least 20 research organisations and 15 companies such as Reliance Life Science and Lifecell are working on stem cells in India, prompting K V Subramaniam, president and CEO of Reliance Life Sciences,

	to say that India is one of the few countries in the world actually pursuing stem cell research. Reliance Life, the pioneer in stem cell-based research in India on a commercial scale, has already commercialised two products. Last year, the company launched ReliNethra, a first-of-its-kind treatment in India for corneal blindness. Recently, it launched ReliHeal-G, which quickly heals wounds. The company has completed clinical trials for treatment for heart attack using stem cells from the bone marrow of the patient. It is carrying out clinical trials for application of stem cell-based therapies for skin disorder stable vitiligo, non-healing diabetic ulcers, Parkinson's disease and spinal cord injury. There is more. India's largest stem cell banking company, LifeCell, and US-based Harvest Technologies, which manufactures devices for stem cell harvesting, are developing a unique treatment for heart attack in association with cardiologist Naresh Tehran's hospital in New Delhi and Ramachandra Medical College, Chennai. "We have completed a pilot study of 60 patients and hope to commercialise the product in three to four years. Stem cell-based cardio vascular therapies have a potential of over Rs 3,000 crore in India," said Mayur Abhaya, executive director of LifeCell. Stempeutics, funded by the Manipal Education and Medical Group, started two years ago and is planning to commercialise two drugs by 2011, one for heart complications and the other for limb complications. The company already owns seven patents. Parkinson's patients in the country will be able to avail stem cell therapy services for treatment as the Mumbai-based Jaslok Hospital and Reliance Life are working together to explore using the patient's own stem cells for curing the disease. Stem cell transplants using an advanced technique of biological adhesive agent was recently carried out in eight cases at a military hospital in Jammu.

Key Industry News:

Publication	imn.ie
Headline	**'Stem cell "sperm" overhyped'**
Gist of the article	A commentator on stem cell therapy has dismis sed last week's media reports that scientists have made medical history by using stem cell research to create human sperm as "puffed up". Dr Stephen Sullivan, a visiting lecturer/researcher at Trinity College Dublin, went as far as saying there was no way the "sperm", which was grown in a

	laboratory, and is being hyped as a potential future treatment for people who are infertile, will be relevant clinically as a treatment for fertility. "This paper should not have been brought to the public's attention just yet as the functional data suggesting a sperm identity of the three per cent differentiated cells is not that compelling," he commented. Dr Sullivan, who organised the Human Pluripotent Stem Cells Symposium held in Dublin in April, told IMN that while these sperm-like cells are interesting to gamete biologists for basic research because they exhibit differentiated sperm-like characteristics, such as a tail and half the DNA content of normal cells, they were still a long way from being authentic sperm cells. "Lots of functional tests are missing. Proper meiotic division giving rise to daughter cells containing one exact copy of the genome has not been demonstrated," he maintained. Despite some preliminary DNA methylation studies, the epigenetics of these cells was not well studied and complete functional reprogramming had not been demonstrated, he added. "As Cambridge University's Prof Azim Surani, who chaired a session at the stem cell meeting in April states, 'there has to be evidence that these sperm-like cells are properly reprogrammed with male-specific imprints, without which they cannot function properly in early embryos'," Dr Sullivan concluded.

Publication	nzdoctor.co.nz
Headline	**New funding for stem cell cancer research**
Gist of the article	Guardian Trust confirmed today that a grant of over $84,000 has been made from the Keith Seagar Research Fund to the Malaghan Institute of Medical Research, for cancer research. Further funding is also promised from the Keith Seagar Research Fund, one of a number of medical charitable trusts Guardian Trust manages. Guardian Trust Client Adviser Vanessa Bourke said the first distribution of $84,360 from the charitable trust will be used to fund cancer stem cell research at the Malaghan Institute. Future distributions will be directed to cancer research, but not exclusively cancer stem cell research, at the institute. The charitable trust was established under the will of Keith Seagar in 2005. Ms Bourke says the nature of the institute's work aligns with the trust's philosophy of supporting research of significant merit and social benefit that

	is benchmarked against the highest international medical standards. "The Malaghan Institute is New Zealand's leading vaccine and immunology research centre working to unlock the mysteries of the immune system in the fight against cancer. Mr Seagar established his charitable trust with the clear purpose of supporting this important work. "Our role at Guardian Trust is to support philanthropists to define what it is they want to achieve, protect and grow the funds they have set aside for charity, and ensure that it is used as they would wish, even after they're gone. Especially in light of this latest distribution, it's very rewarding work," she said. The Malaghan Institute of Medical Research's Fundraising and Communications Manager Tanya Fulcher says the funding from the Keith Seagar Research Fund will enable the institute's three dedicated cancer research groups to focus their attention on the research without the added pressure of identifying support funding in the current economic climate. The first distribution will enable the Cancer, Cell and Molecular Biology Group to pursue its current focus on a small population of cells in tumours called cancer stem cells to find out more about the role they play in recurring cancers. The research project involves isolating and characterising potential cancer stem cells from aggressive brain tumours removed during brain surgery at Wellington Hospital. The research grant will fund the purchase of laboratory supplies and other items of equipment not provided for in the current budget. Guardian Trust currently administers over 450 charitable trusts, with approximately 40 of these providing ongoing funding to support medical research in New Zealand.

Publication	blogs.discovermagazine.com
Headline	**Is It Ethical to Pay Women to Donate Eggs for Medical Research?**
Gist of the article	To obtain a steady supply of unfertilized human eggs for medical research, New York's Empire State Stem Cell Board recently authorized paying women to donate their eggs. The decision has set off a new round of discussion about whether paying for eggs is ethical. The board agreed that women can receive up to $10,000 for donating eggs, a painful and sometimes risky process…. Proponents say compensating women for their eggs is necessary for research, and point out that women who give their eggs for fertility purposes are already paid. Others worry that the practice will commodify the human body and lead to the exploitation of women in financial need [The New York Times].

	At the annual meeting of the International Society for Stem Cell Research this week, British researcher Alison Murdoch described a less controversial "egg sharing" program that has met with success. Women struggling to conceive can obtain IVF at a discounted rate, in exchange for donating some of their eggs for research…. In 2008, Murdoch's team had 191 enquiries from interested women and ended up obtaining 199 eggs from 32 couples. "We are getting donors and we are getting eggs," says Murdoch. The team is using the eggs in experiments into "therapeutic cloning", which could ultimately produce stem cells matched to individual patients [New Scientist]. "Therapeutic cloning" relies on a process called somatic cell nuclear transfer. In the process, the DNA from an adult cell, such as a skin cell, is inserted into a human egg that has had its DNA removed. The fertilized egg then begins to develop similarly to a regular embryo, and scientists can harvest stem cells several days later. The resulting cells are genetically matched to the adult tissue donor, and could therefore be used for cell transplants without the risk of immune rejection [Technology Review]. Stem cells can develop into any type of tissue in the body, and are thought to hold great potential for treating diseases. Some researchers suggest that recent advances in reprogramming adult cells to behave like stem cells may eliminate the need for cloning, and thus for egg donation. But others disagree. "There are many questions you can only answer by studying human eggs," said Dr. George Q. Daley, a stem cell researcher [The New York Times]. For example, researchers want to compare stem cells created through therapeutic cloning to those created by reprogramming adult cells to understand why the reprogrammed cells behave somewhat differently.

Publication	english.chosun.com
Headline	**World's 1st Stem Cell Veterinary Hospital Opens in Korea**
Gist of the article	A hospital in Korea has become the first to use stem cell therapy to treat animals. Here doctors use fat-derived stem cells to heal various diseases related to cellular damage and to delay the aging process of animals. Once a patient is referred to the clinic, the vet takes a sample of the animal's fat tissue and customizes the multi-potent stem cells extracted from the fat to specifically target an illness. The stem cells are then injected back into the pet and the repairing process begins. The hospital is the only one in the world that uses stem cell therapy to cure cats and dogs. Vets say their real goal is to enhance early detection through preventive treatment such as regular stem cell shots that keep the stem cell level high in the body. The hospital says the next step is to standardize treatment methods and export them to hospitals overseas. There is also good news for pet owners who wish to have a second chance

	with their deceased or dying four-legged friend. By storing an animal's stem cells, the owners can clone as many dogs as they please. According to a spokesman for Korean biotech firm RNL BIO, the cost of cloning one dog is around US$50,000. Although the price is high, the company says they are currently six months behind in orders, most of which are from overseas.