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ENCITE - European Network for Cell Imaging and Tracking Expertise

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Researchers define cell therapy as the transplantation of living cells for the replacement or repair of damaged tissue and/or cells. Hot on the heels of stem cell therapy research is a group of leading cell imaging experts who are participating in ENCITE (European network for cell imaging and tracking expertise), a four-year project supported by the EU with €11 million in funding. Coordinated by the Vienna-based European Institute for Biomedical Imaging Research (EIBIR), ENCITE aims to develop imaging technologies and methods in the cell therapy field.

Experts have established three different principles underlying the treatment of medical disorders: (1) transplanted cells used as an 'active drug'; (2) transplanted cells used to replace damaged and degenerated tissue; and (3) cells used as a drug delivery vehicle.

The medical world has been using cell therapy over the years to treat a myriad of disorders, including cancer, spinal cord injuries, autoimmune disorders and Alzheimer's disease. Contrary to what some people may think, cell therapy is not a new concept; one can trace its history to the German-Swiss physician and alchemist, Phillippus Aureolus Paracelsus, who in 1536 theorised that illnesses can be treated with living tissue.

Fast forward to 2008 and it's clear that the medical world lacks a single imaging modality that would be effective in stem cell therapy. But experts say that several types of imaging have the capacity to play major roles in this line of research, particularly magnetic resonance imaging (MRI) and optical imaging. Both these imaging types are being researched by the ENCITE team.

The partners will develop and test innovative MRI imaging methods and biomarkers so as to better understand what happens to a cell and how the immune system responds. The potential impact of ENCITE is that the researchers will break new ground in cell therapy research, as well as strengthen Europe's role in this type of research. Applications of the results can be seen in the treatment of cancer, diabetes and cardiovascular diseases.

ENCITE kicked off last month and comprises 21 partners from 10 countries. Team members say that as ENCITE advances, the collaboration of other highly qualified partners will prove positive for the project. They add that their contribution will strengthen research or dissemination and training activities for the newly developed methods. ENCITE will launch a Competitive Call in autumn 2008 to secure new partners.

The following actions will be taken by ENCITE in order to meet the call and tackle the different cell therapies that exist: (1) deliver new imaging methods to improve the