



Skin Cells Converted into Heart Tissue

US researchers have managed to take a giant step forward in the area of stem cell research; they have used skin cells to create a new type of powerful stem cell which they then managed to coax into becoming three different types of heart and blood cells. Findings of the research have been published in the journal *Stem Cells Express*.

Stem cells have been seen as the best way to treat heart disease in humans for a long time and there are several studies that are currently being conducted on the cutting edge of technology to achieve success in this field. Stem cells are usually derived from embryonic stem cells as these have the potential to develop into any types of cells in the body. However, use of embryos for research and treatment has run into strong opposition on the issue of ethics and many countries including the US have put severe restrictions on the same.

This has forced scientists to look at other options for getting stem cells. The new study by Dr. W. Robb MacLellan and colleagues at the University of California in Los Angeles promises just this. Working on laboratory mice, the researchers managed to create heart and blood cells from so-called induced pluripotent stem (iPS) cells. iPS cells are basically skin cells that have been transformed to mimic the powers of embryonic stem cells.

The research team got the iPS cells to differentiate and mature into cardiomyocytes cardiac muscle cells that contract with the beating heart. They also developed vascular smooth muscle cells, the specialised muscle cells that line blood vessel walls and hematopoietic cells that create blood.

Thus, iPS cells could prove a valuable cell source for applications in regenerative medicine, the researchers said. Their findings come in the wake of the findings of another similar study that was based on human embryonic stem cells. In the past year, there have been several studies conducted on these lines and scientists have reported finding certain genes

that can turn regular skin cells into iPS cells, which can later be made to act and work like embryonic stem cells.