

Learn More About Our Research

We are conducting primary research on bone regeneration and pancreas regeneration (diabetes research), cord blood expansion, and biomolecule expansion, all of which are covered by our worldwide [patent](#) applications.

Whoever Would Cure, Must Use Adult



Stem Cells

It has been known for about 30 years that stem cells are present in the tissue of the adult, but it was assumed that they could only form cells of a particular tissue. That is, reprogramming them was considered impossible. In recent years, however, pluripotent stem cells were discovered in various human tissues-in the spinal cord, in the brain, in the mesenchyme (connective tissue) of various organs, and in the blood of the umbilical cord. These pluripotent stem cells are capable of forming several cell types-principally blood, muscle, and nerve cells. It has been possible to recognize, select, and develop them to the point that they form mature cell types with the help of growth factors and regulating proteins.

This shows that in tissues of the body, adult stem cells possess a much greater potential for differentiation than previously assumed. This knowledge must be brought into the public consciousness with all possible emphasis. If stem cell research were really only meant for therapeutic uses, which it most obviously should be, adult stem cells would promise a very productive research field-and beyond that, a possibility, without moral objection, to discover fundamentals of the dynamics of tissue differentiation.

It has become clear from transplantation experiments with animals, that stem cells of a particular tissue can develop into cells of a completely different kind. Thus, bone marrow stem cells have been induced to become brain cells, but also liver cells.

Adult stem cells obviously have a universal program for division that is common to all the kinds of tissue stem cells, and makes them mutually interchangeable. This was discovered by Alexei Terskikh at Stanford University School of Medicine in California. He was able to prove that adult stem cells of blood-forming tissues, and of the brain, activate the same genes, in order to preserve their status as stem cells.

In May 2001, a further, spectacular experiment was reported, which was carried out on mice by scientists at Yale University. The researchers obtained stem cells from the bone marrow of male mice, and injected it into females whose own marrow had been destroyed by radioactive irradiation. Eleven months later, the male stem cells (identifiable through the male Y-chromosome) were found not only in the females' bone marrow, but also in their blood, and in their gut, lung, and skin tissues.

If these observations are correct and are confirmed by other teams of scientists, science should concentrate on research with adult stem cells and renounce further experiments with the embryonic.

From *The Case for Adult Stem Cell Research*

Courtesy of Wolfgang Lillge, M.D.