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Stem cell therapy: The future medicine

Sri Sannihita Chavali

Stem cell has become an advanced research topic over the past few years owing to its regenerative benefits. Stem cells are special cells in the human body that could develop into many different cell types ranging from muscle to brain cells. During requirement, these cells perform cell repair of damaged tissues efficiently. They provide new cells for the body as they grow by dividing over and over, and help in replacing the specialised cells (e.g. red blood cells) too that are damaged or lost. The stem cells are divided into two main forms, namely embryonic stem cells and adult stem cells. The former pluripotent cells supply new cells for an embryo and the latter multipotent cells supply new cells as an organism grows and replace damaged cells. As stem cells have several uses in research and therapy, they are being studied by scientists intensively. Stem cell therapy has gained a lot of popularity and is performed currently with adult stem cells (e.g. thalessaemia treatment) but to treat many other diseases (e.g. age-related macular degeneration) pluripotent stem cells are necessary for which scientists have developed induced pluripotent stem cells in the lab by reprogramming the adult stem cells like embryonic stem cells, which are pluripotent. Stem cells have gained the interest of many medical practitioners for the treatment of several diseases. Stem cell research is vast and many more applications are yet to be discovered related to stem cells. Furthermore, researchers believe that stem cell-based therapies might one day be employed in the treatment of serious illnesses, such as paralysis and Alzheimer’s disease.

Keywords: Stem cells, Stem cell therapy, Specialised cells, Embryonic stem cells, Adult stem cells, Pluripotent, Multipotent, Induced pluripotent stem cells

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