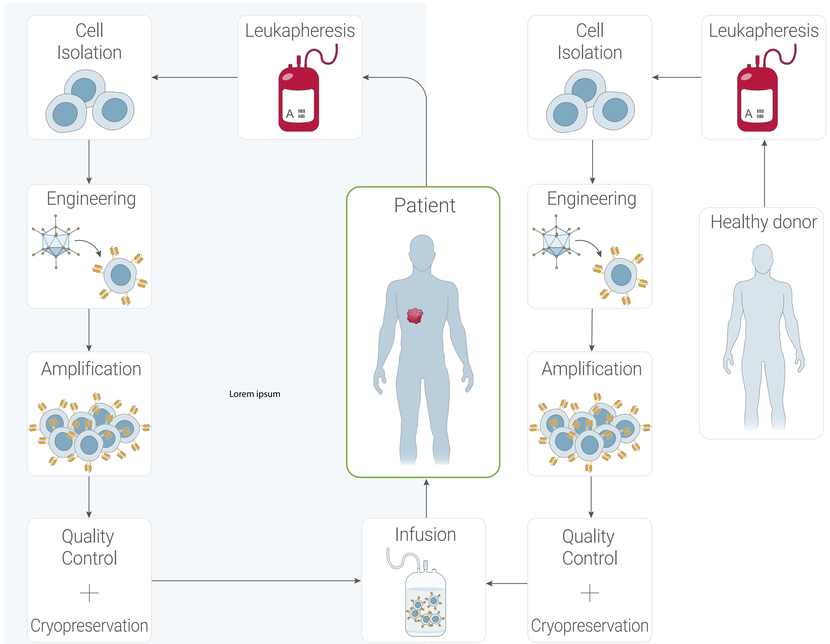
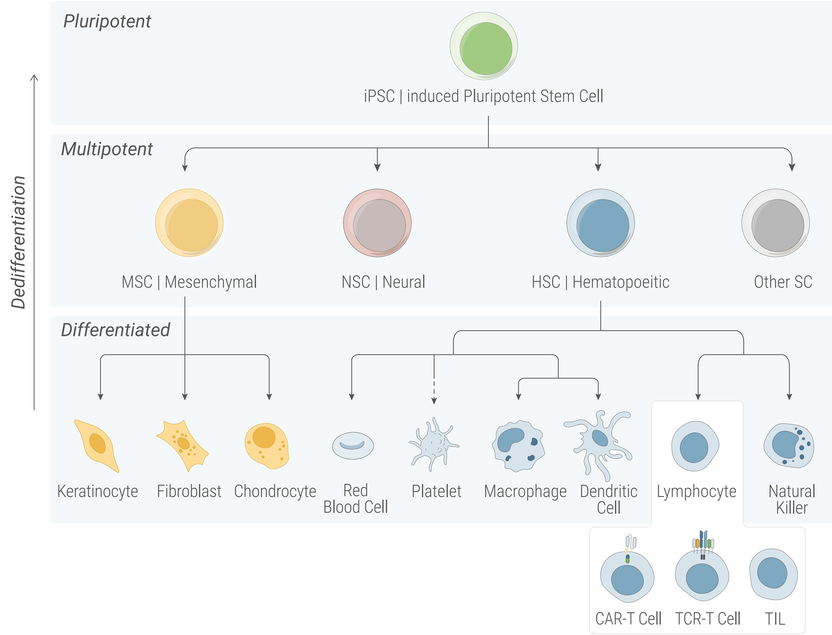
Cell Therapy and Its Applications

AUTOLOGOUS VERSUS ALLOGENEIC



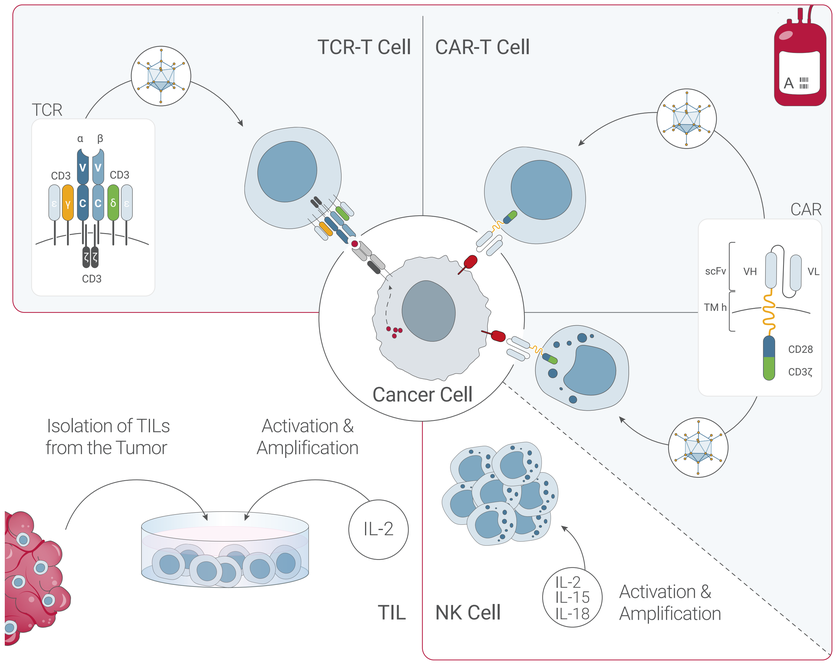
Cell therapy is the administration of living cells to patients to treat disease following their isolation, genetic engineering, or induced directed differentiation and amplification. Therapeutic cells can originate either from an unrelated healthy donor (allogeneic cells) or the patient being treated (autologous cells).

CELL TYPES USED AS THERAPEUTIC PRODUCTS



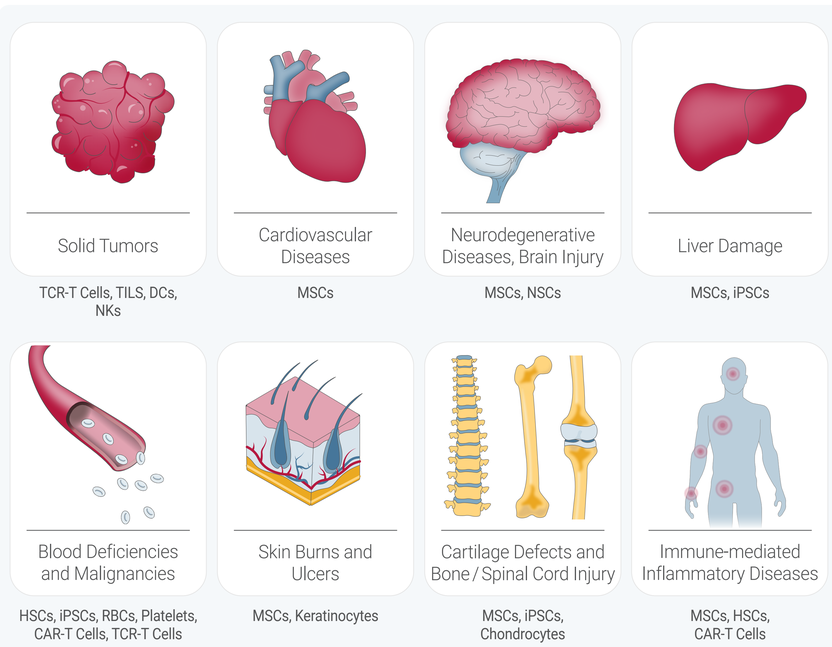
A variety of cell types can be used as therapeutic products: pluripotent and multipotent stem cells such as MSCs or HSCs, as well as fully differentiated cells including skin cells, chondrocytes, or blood cells. The optimal cell type is chosen depending on its therapeutic application. Some of these cells such as CAR-T cells or TCR-T cells are genetically modified.

ADOPTIVE CELL THERAPY



Adoptive cell therapy - also known as cellular immunotherapy - uses differentiated, and often genetically modified, immune cells to eliminate defective cells by enhancing their fighting abilities. These exist primarily in the form of four therapy types: TILs (extracted from the tumor microenvironment), CAR-T cells, TCR-T cells, and NK cells (collected from the peripheral blood).

THERAPEUTIC INDICATIONS



Cell therapy has the potential to treat a wide range of pathologies. While adoptive cell therapy has shown promising results in hematological malignancies and autoimmune diseases, stem cells or differentiated cells can be used in regenerative medicine in other therapeutic indications.

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