Introduction to Health Biotechnology

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Health Biotechnology

Gene therapy

Gene therapy can be described as the intracellular delivery of genetic material to generate a therapeutic effect by correcting an existing abnormality or providing cells with a new function.

Blood Transfusion

injection of a volume of blood, previously taken from a healthy person, into a patient.

Stem Cell

Can differentiate into other types of cells and can also divide in self renewal to produce more of the same type of stem cells.

Transplantation is the introduction of biological material - organs, tissue, cells, fluids - into an organism.

We can distinguish 3 critical relationships between the transplanted material and the recipient.

syngeneic transplants - from genetically identical individuals, usually the same individual *(these are similar to grafts between identical twins or isogenic strains of experimental animals)*

allogeneic transplants - from one individual to another of the same species

xenogeneic transplants - between individuals of different species.

Transgenic

A transgenic animal is one whose genome has been changed to carry genes from other species. The nucleus of all cells in every living organism contains genes made up of DNA. These genes store information that regulates how our bodies form and function.

Transgenic Livestock

Cloning livestock by somatic cell nuclear transfer

Pharmaceuticals

Donor organs

Disease resistant livestock
Milk quality

Animal production traits

Transgenic poultry

Transgenic fish

Diagnostic and Vaccines

Diagnostics Based on Polymerase Chain Reaction

Vaccines using recombinant technology