

Glossary

Allogeneic is tissue, organ, or cell derived from antigenically dissimilar individuals from the same species.

Apoptosis is a form of programmed cell death that occurs in multicellular organisms.

Asymmetrical division refers to cell division where one daughter cell acquires a different cell fate than the other daughter.

Autologous refers to cells or tissue obtained from the same individual.

Autophagy is the natural, conserved degradation of the cell that removes unnecessary or dysfunctional components through a lysosome-dependent regulated mechanism.

Blastula is an early stage of embryonic development characterized by repeated cell division of the fertilized egg to form a fluid filled cavity surrounded by cells.

Clinical potency is the concentration or amount of the drug required to produce a defined effect.

Colony forming units-fibroblastic (CFU-F) is a unit used to estimate the number of viable fibroblasts cells in a sample.

Contact inhibition is a property of normal cells where growth of the cells in a culture eventually stops in a cell density dependent manner.

Differentiation is a transition of a cell from 1 cell type to another and it involves a switch from one pattern of gene expression to another.

Ectoderm is the outermost of the three primary germ layers in early embryonic development. It originates from the outer layer of germ cells and is the precursor of the skin and neural system and associated organs like the eye and the neural crest.

Embryonic stem cells are pluripotent stem cells derived from the inner cell mass of a blastocyst, an early-stage preimplantation embryo.

Endoderm is the innermost of the three primary germ layers in early embryonic development and is the precursor of organs such as the gastro-intestinal tract.

Epigenetic modifications of DNA is a field of genetics that studies the influence of the reversible heritable changes in gene expression that occur without changes in the sequence of the DNA in the cell nucleus.

Exosomes are microscopic extracellular vesicles with a diameter of 30-100 nm, secreted into the intercellular space by somatic cells.

Fluorescence activated cell sorting (FACS) is a specialized type of flow cytometry, based upon the specific light scattering and fluorescent characteristics of each cell. Used for sorting a heterogeneous mixture of biological cells into two or more containers, one cell at a time.

Hematopoietic stem cells (HSCs) give rise to different types of blood cells, in lines called myeloid and lymphoid.

Homeostasis is the state of steady internal, physical, and chemical conditions maintained by living systems.

Immune suppression is a reduction of the immune system activity which can be accomplished artificially via radiation, medications, surgeries, or plasmapheresis or a disease.

Induced pluripotent stem cells (iPSCs) are a type of pluripotent stem cells generated directly from a somatic cell by expressing the transcription factors Oct 4, Sox2, Klf4, and c-Myc.

Inner cell mass is the mass of cells inside the primordial embryo that will eventually give rise to the definitive structures of the fetus.

Knock-out mouse is a genetically modified mouse in which an existing gene has been inactivated by replacing or disrupting it with an artificial piece of DNA.

Mesoderm is the middle of the three primary germ layers in early embryonic development and precursor to among others muscle and connective tissue.

Necroptosis is an alternative mode of regulated cell death mimicking features of apoptosis and necrosis.

Necrosis is unprogrammed cell death due to cellular damage or infiltration by pathogens, as opposed to orderly programmed cell death via apoptosis.

Pericytes are multifunctional mural cells that wrap around the endothelial cells lining the capillaries throughout the body. Their contraction and relaxation affect the shape of blood vessels.

Potency is the ability of cells to differentiate to multiple lineages.

Progenitor cells can differentiate into a specific type of cell but is already more lineage restricted than a stem cell.

Quiescence is a state of a cell when it is not dividing and metabolically inactive.

Regenerative medicine is actively enhancing the body's ability to heal tissues by understanding and intervening in the repair process of damaged or diseased tissue to achieve better outcomes.

Self-renewal is the ability to go through numerous cycles of cell growth and cell division while maintaining the undifferentiated state.

Stem cell niche refers to a microenvironment within a specific anatomic location where stem cells receive the proper signals to maintain their stem cell properties.

Stem cells are undifferentiated or partially differentiated cells that can differentiate into various types of cells and proliferate indefinitely to produce more of the same stem cell.

Symmetrical division refers to cell division where both daughter cells acquire the same fate as the parent cell.

Temporal stochasticity is the event in the life history of a cell that defines its future, and sometimes that of neighboring cells.

Transit amplifying cells are an undifferentiated population of cells undergoing cell division to become differentiated cells.

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