

Glossary

Allogeneic are cells, tissues, or organs derived from antigenically dissimilar individuals from the same species.

Antigenic components are molecules that can trigger an immune response in an immunocompetent organism.

Arginine-Glycine-Aspartic Acid (Arg-Gly-Asp RGD) subunit is a tripeptide motif present in extracellular matrix proteins that serves as an attachment site for cells to the extracellular matrix.

Bioburden is defined as the number of microorganisms on/in a biomaterial before sterilization.

Bioscaffold is a structure of natural origin used as a support to repair and/or regenerate a tissue or organ structure.

Chemical crosslinking refers to a covalent bond between two molecules caused by a chemical agent.

Chemotactic is unidirectional movement of an organism or entity triggered by a chemical gradient.

Comorbidities is the presence of one or more disease conditions that exist in addition to a primary disease.

Computed tomography (CT) scan is a noninvasive medical imaging technique in radiology used for diagnostic purposes to produce three-dimensional images of the body.

Constructive remodeling is a modification of the default wound healing response, different from scarring, and toward site-specific deposition of functional tissue.

Decellularization is a technique by which a tissue or organ is processed by various physical, chemical and/or enzymatic methods to remove all the resident cells leaving behind only the extracellular matrix which later will serve as a bioscaffold.

Delamination is the separation of layers in a multilaminate structure

Donor site morbidity is the presence of discomfort and/or reduced function at the site of tissue harvest.

Dynamic reciprocity is a continuous, two-way interaction between cells and their immediate microenvironment, for instance, between cells and the surrounding extracellular matrix.

Endogenous repair is the process of healing by cells and signaling molecules that exist within the individual.

Epitope is part of the antigen that is recognized by the immune system and is bound by the antibody.

Esophagus is a muscular tube, approximately 25 cm long in the human, that connects the throat (pharynx) with the stomach.

Extracellular matrix (ECM) is a three-dimensional network consisting of extracellular macromolecules, such as collagen, enzymes, and glycoproteins that provide structural and biochemical support to surrounding cells.

Foreign body giant cell (FBGC) is a multinucleate cell resulting from the fusion of several macrophages.

Foreign body reaction (FBR) is the host tissue response to the presence of a (typically non-degradable) foreign material. The classic FBR includes multinucleate giant cells, a persistent mononuclear cell response, and a fibrous capsule around the foreign material.

Frustrated phagocytosis is the process by which phagocytic cells, typically macrophages, attempt to phagocytose an object but are unable to do so because of its large size.

Functional molecules are macromolecules having a specific biologic activity or task in an organism.

Gram-negative bacteria are bacteria that possess a thin layer of peptidoglycan between two membranes (diderm). They give a negative result in the Gram stain test.

Gram-positive bacteria are bacteria that have a single membrane (monoderm) surrounded by a thick peptidoglycan layer. They give a positive result in the Gram stain test.

Hemostasis is the process of halting bleeding.

High grade dysplasia is a term to describe precancerous changes that include both individual cell abnormal morphology and abnormal spatial distribution of cells that have abnormal morphology.

Hyperacute rejection is the most rapid adverse immunological reaction to a tissue or organ graft typically within 24 hours of transplantation, which results in complete failure of function.

Iatrogenic injury is tissue or organ damage that has nothing to do with the primary disease and is caused by medical treatment.

Immune-mediated rejection is a process in which a transplanted tissue/organ is damaged or destroyed due to an adverse immune response by the recipient.

In vivo is a term to describe experiments conducted using animals or humans, as opposed to experiments conducted outside of the body (*ex vivo*).

Inflammatory phase is the second stage in wound healing, characterized by the recruitment of polymorphonuclear leukocytes (neutrophils, eosinophils, basophils and mast cells), macrophages, and other cells of the innate immune system.

Innate inflammatory cells are cells within the immune system that function by identifying and eliminating potential pathogens.

Ligand affinity is the strength of binding between a ligand and its receptor.

M₁ macrophages have a pro-inflammatory phenotype that secretes numerous proinflammatory signaling molecules like TNF, IL-1, or IL-6.

M₂ macrophages are anti-inflammatory, regulatory macrophages that promote wound healing and secrete anti-inflammatory signaling molecules like IL-10 and IL-12.

Matricryptic peptides are bioactive peptides produced by the degradation of parent macromolecules that are part of the natural extracellular matrix (ECM).

Matrix bound nanovesicles are a class of bioactive, extracellular vesicles localized within the extracellular matrix.

Mononuclear cells are a blood cell type containing a single nucleus, including lymphocytes (T cells, B cells, natural killer -NK- cells) and monocytes (which are the precursors of macrophages).

Mucosa layer is the inner lining of tubular organs and body cavities, e.g. the nose, mouth, lungs, and stomach.

Polymorphonuclear cells is the most abundant type of white blood cell in the human body and includes neutrophils, eosinophils, basophils and mast cells. These cells are characterized by varying nuclear shape and are responsible for a variety of immune functions in the body.

Proliferation phase is a stage in wound healing associated with the growth of new tissue. In this phase, angiogenesis, collagen deposition, granulation tissue formation, epithelialization, and wound contraction occur.

Remodeling phase is the final phase of the wound healing process. Connective tissue is realigned along tension lines, and cells spatially arrange according to functional requirements.

Satellite cells are small muscle progenitor cells found in mature muscle which are involved in the normal growth of muscle and can respond to muscle injury.

Sonication is the use of sound energy to agitate or break a tissue or proteins.

Stricture/Stenosis formation is the abnormal narrowing of a tissue cavity in a blood vessel or other tubular structures such as foramina and canals. Stenosis occurs when collagen deposition and smooth muscle cell accumulation is excessive.

Structural molecules are macromolecules that provide shape and form to a tissue.

Tensile strength is the ability of a material to withstand the force of pulling.

T_H1 cells are a class of T-lymphocytes that stimulate a cellular proinflammatory immune response, participate in the modulation of macrophage activation, and stimulate B cells to produce immunoglobulins like IgM and IgG₁.

T_H2 cells are a class of T-lymphocytes that stimulate a humoral immune response, promote B cell proliferation, and induce interleukin 4 (IL-4) production.

Xenogeneic – Cells, tissue or organs belonging to a different species.

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