

Glossary

Accessory cells	All cells that aid in the immune reaction but do not directly mediate specific antigen recognition, e.g. →phagocytes, mast cells, →natural killer cells
AGO study	Multicentric study group in the field of gynecological oncology e.g. ovarian cancer
aGvHD	Acute phase of Graft-versus-Host-Disease, caused by T-cells in the donor graft that attack the host organism
AIDS	Acquired immunodeficiency syndrome Without treatment the →HIV-Infection leads to progression (AIDS). The destruction of immune cells causes insufficient and ineffective immune reactions to pathogens normally eliminated by the immune system. Without treatment, AIDS is lethal within 0.5 to - 2 years
Allogeneic	Taken from different individuals of the same species
Antibodies	Antibodies are proteins that bind specifically to a particular substance, its →antigen. Antibodies are known collectively as immunoglobulins (Igs). Antibodies are produced by B-lymphocytes and plasma cells in response to infection or immunization, and bind to and neutralize pathogens thus preparing them for uptake and destruction of →phagocytes
Antigen	Any substance, which is recognized by the body as being foreign so that its presence triggers a specific immune response (e.g. formation of →antibodies)
Antigen presenting cells	Cells of the immune system that internalize and degrade →antigens to molecules. These molecules are then presented on the surface of the cells by special surface molecules specifically interacting with T-lymphocytes resulting in antigen-specific →T-cell responses
Antiproliferatives	→Immunosuppressive drugs that inhibit cell division by interacting with cellular DNA
Apheresis	Extracorporeal collection of blood compartments (e.g. plasma, leukocytes, platelets) using a cell separator
Aplastic anemia	Failure of the bone marrow to properly form all types of blood cells
Apoptosis	A form of cell death in which the cell activates an internal death program (programmed cell death)
Autoantibodies	→Antibodies specific for “self-→ antigens”

Autoimmunity	Immune response directed against self antigens. These misdirected immune responses are referred to as autoimmunity, which can be demonstrated by the presence of →autoantibodies or →T-lymphocytes reactive with host →antigens
Bilirubin	A breakdown product of hemoglobin. Total and direct bilirubin are usually measured to screen for or to monitor liver or gall bladder dysfunction
Bispecific antibodies	→Antibodies having two different specificities
Bone marrow transplants	Bone marrow is taken from the patient or from donor by puncture of i.e. iliac crest. The processed bone marrow is applied intravenously to the patient directly or after → cryopreservation and thawing
Calcineurin inhibitors	Potent →immunosuppressive drugs that are widely used in clinical transplantation, →Graft versus Host Disease, →autoimmune and inflammatory diseases
CD3	Cell surface molecule specific for →T-cells
CD4	Cell surface molecule expressed on a subset of →T-cells (T-helper cells). Major target cells for →HIV
Cellular cytotoxicity	Cell damage caused by cells of the immune system (e.g. → T-cells, →natural killer cells) as a part of immune response
cGvHD	chronic Graft versus Host Disease defined as late manifestation of →GvHD
Chemotherapy	Use of chemical therapeutic agents interfering with cell division in order to inhibit tumor growth in the body
Chondrocytes	Cartilage cells, which make the structural components of cartilage
Coagulation	Physiologic clotting mechanism of peripheral blood in order to stop bleeding
Corticosteroids	Drugs used as →immunosuppressives that inhibit immune and inflammatory responses in animals and humans
Co-stimulatory signals (stimulation):	Molecular cross-talk between →T-cells and →antigen presenting cells as a precondition for T-cell activation
Cryopreservation	Process of freezing and storing cellular material commonly in liquid nitrogen (-196°C) to maintain viability, genetic stability, full development and functional potential of growth and development in vitro
Cytokines	Proteins made by cells (e.g. cells of the immune system) that affect the behaviour of other cells
Dendritic cells	→Antigen presenting cells of the immune system
Diabetes Type I	Type I diabetes is a chronic disease of the pancreas that occurs due to insufficient → insulin production by → islet cells resulting in dysregulation of blood sugar levels

DLT	Dose Limiting Toxicity Adverse event, occurring in such severity, that no higher dose can be administered
EMA	European Agency for the Evaluation of Medicinal Products European Organisation for Drug Approval
Endometrial cancer	Cancer of the corpus of the uterus
Entry inhibitor	A substance or molecule which prevents entry of viral genome into cells. As outcome, cells are not infected by virus
EpCAM	Epithelial Cell Adhesion Molecule Found on the surface of healthy cells of the epithelium (the cell structure covering inner and external body surfaces), but also present in increased numbers on the surfaces of malignant epithelial tumor cells
Ex vivo	Outside a living organism
FDA	Food and Drug Administration US Organisation for Drug Approval
Fcγ-Receptor	A receptor is a protein molecule (most commonly on the surface of a cell), which is stimulated by binding to certain substances. This leads to further biochemical changes within the cell itself. Fcγ-Receptor is a surface molecule expressed on white blood cells, dendritic cells and →platelets, for unspecific binding of and interaction with →antibodies
Gene Therapy	Treatment that alters genes in order to achieve therapeutic or prophylactic effects. In vivo gene therapy: direct introduction of therapeutic/prophylactic genes into the body. Ex vivo gene therapy: genetic modification of somatic cells ex vivo, modified cells are reinfused into the patient
Genomics	Scientific discipline of mapping, sequencing, and analyzing the genome
GLP	Good Laboratory Practice The principles of Good Laboratory Practice (GLP) define a set of rules and criteria for a quality system concerned with the organizational process and the conditions under which non-clinical health and environmental safety studies are planned, performed, monitored, recorded, reported and archived
GMP	Good Manufacturing Practice GMP implements defined guidelines to be followed by the pharmaceutical and biotech firms in order to ensure that the products meet specific requirements for identity, strength, quality and purity
GvHD	Graft versus Host Disease Immune reaction of allogeneic immunocompetent cells in the graft against the recipient. Severe complication of → stem cell transplantation

HAART	Highly Active Antiretroviral Therapy Combination of antiretroviral drugs used for treatment of → HIV infection and →AIDS. HAART greatly improves survival and quality of life of the patients but the side effects, resistance development and high cost are the major unsolved problems
HBV	Hepatitis B virus
HCV	Hepatitis C virus
Hepatocytes	Liver cells
HER2/neu	Human Epidermal Growth Factor Receptor 2 A membrane receptor which is overexpressed in up to 30 % of breast cancers and some other tumor types
Herceptin	Tumor-targeted drug →(antibody) for treatment of → metastasised breast cancer by binding to →HER2/neu surface molecule expressed on most aggressive tumor cells
HIV	Human Immunodeficiency Virus HIV is a pathogenic →retrovirus preferentially infecting immune cells (CD4+ T cells) and causing →AIDS
Hybrid-Hybridoma	Hybrid-Hybridomas are used for the preparation of antibodies having two different specificities, the so-called → bispecific antibodies; generated by fusing →hybridoma cell lines each producing antibodies having one of the desired specificities
Hybridoma cell line	Hybridoma cell lines are developed by fusing specific antibody producing B lymphocytes and myeloma cells in order to produce monoclonal antibodies
IFN	Interferons: →Immunomodulators that can induce cells resist to viral infections. IFN α and β are produced by leukocytes and fibroblasts, whereas IFN γ is a product of →T cell subsets and → natural killer cells
IgG	Immunoglobuline G Subset of → antibodies
IL-2	Interleukin-2; →T-cell growth factor (→ immunomodulator)
Immunoabsorption	Specific binding of → antibodies (or → antigens) from suspensions to antigen (or antibody) coated surfaces, used for purification of protein preparations
Immunomodulators	→ Immunomodulators are substances, released from immune and →accessory cells, that modulate the immune systems response, e.g. →IL-2, →TNF, →IFN
Immunosuppressives	Drugs that suppress the immune system are given to organ transplanted patients to protect the body from organ →rejection
Incident cases	Newly diagnosed patients with a particular disease per year

Insomnia	The perception or complaint of inadequate or poor-quality sleep
Intraperitoneal	Within the →peritoneal cavity, the area that contains the abdominal organs
Investigator Driven Study	A clinical trial in which the investigator (usually a medical doctor) is responsible for the performance of the study and analysis of results
In vitro	Outside of a living organism in a test tube, often used as a model system instead of a living organism →in vivo
In vivo	Inside of a living organism
Islet cells	Pancreatic cells, that produce insulin (hormone responsible for maintenance of blood sugar levels). →Autoimmunity against islet cell leads to destruction of islet cells and thus to development of →Diabetes Type I
Jurkat cells	Human →T-cell line
Leukapheresis	Collection of white blood cells from the peripheral blood by centrifugation with a cell separator. The red blood cells are given back to the patient
Macrophages	→Phagocytosing and →antigen presenting cell of the immune system
Malignant ascites	Abnormal accumulation of fluid in the →peritoneal cavity due to malignant processes
Malignant Pleural Effusion	Abnormal accumulation of fluid in the pleural cavity (cavity in the thorax that contains the lungs) due to malignant processes
Master cell bank	Cultured cells that are characterized according to requirements of regulatory authorities and used as source for production of working cell banks. Working cell banks are used for production of biopharmaceutical products under GMP conditions
Metastases	“Offsprings” of the primary tumor due to the spread of tumor cells to other body regions
MHC antigens	Major Histocompatibility Complex Histocompatibility antigens on the surface of cells, defining “own” and “foreign”
Monoclonal antibodies	A monoclonal →antibody is produced by a single clone of B-lymphocytes. All molecules from one clone have the same specificity
MTD	Maximal Tolerated Dose Dose-level on which a →DLT occurs. This dose is the maximum dose a patient can tolerate
Murine	Relating to a member of the Muridae (rats and mice)
Myelodysplastic syndrome	Hematologic malignancy originating from stem cells

National Advice	National advice is an authorizational consultation given by National authorities, e.g. Paul-Ehrlich-Institute (Germany). The advice is focussed on non-clinical and clinical development and quality aspects of human medicinal products that are not ruled in marketing authorization relevant guidelines
Natural killer (NK) cells	Cytotoxic cells of the immune system
Non-Small-Cell Lung Cancer	Most common type of lung cancer
Oncology	A discipline in the field of internal medicine dealing with the development and treatment of cancer
Organ recipients	Patients who receive an organ from a foreign donor
Orphan drug	Medicinal product approved for rare (orphan) diseases
Packaging cell line	Genetically modified cell line for the production of viral vectors
PBMC	Peripheral blood mononuclear cells Circulating white blood cells with one nucleus. All white blood cells excluding granulocytes (polymorph nuclear cells)
Perforin	A protein produced by cytotoxic →T-cells and →natural killer cells that causes lysis of target cells on contact
Peripheral blood leukocytes	All white cells of the peripheral blood. All these cells are part of the immune system
Peripheral blood stem cells	Stem cells that are circulating in the peripheral blood. Stem cells located in the bone marrow can be induced to migrate from the bone marrow into the peripheral blood by hematopoietic growth factors or chemotherapy. It is possible to collect them from the blood by →leukapheresis
Peritoneal cavity	The cavity within the abdomen, the space between the abdominal wall (peritoneum) and the spine
Peritoneal carcinomatosis	→Metastatic spread of tumors to the surfaces of the peritoneal cavity, mainly caused by abdominal tumors
Phagocytosis	The internalization of particles (bacteria, cell fragments) by cells. The main function of phagocytes (usually → macrophages and neutrophils) is the destruction of pathogens. The internalized material is destroyed by a special system of enzymes and degraded to small molecules
Platinum refractory	Unresponsiveness of ovarian cancer to platinum containing chemotherapy representing as early relapses (> 6 months after chemotherapy); incurable and associated with a poor prognosis
Polyclonal antibodies	→Antibodies produced by different B lymphocytes in response to the same →antigen recognizing different parts of it. For that reason polyclonal antibodies offer a broader therapeutic spectrum

Proteomics	Proteomics characterize functional protein networks and their dynamic alteration during physiological and pathological processes. Proteins have to be identified, sequenced, categorized and classified with respect to their function and interaction in a protein network
Rejection	Immunologic reaction of the recipient against the donor organ causing failure of engraftment
Relapse	Recurrent disease
Retroviral vector	A recombinant retroviral particle for therapeutic use, containing an envelope, regulatory proteins of the host virus and (a) therapeutic gene(s). Replication of incompetent retroviral vectors (used in Fresenius Biotech's therapy) allows the insertion of the therapeutic gene into the genome of the host cell
Retroviruses	Group of viruses that contain two single-strand linear RNA molecules per virion and reverse transcriptase (converting RNA to DNA)
SCID	Severe Combined Immunodeficiency Disease The SCID mouse is used as an in vivo model of the human immune system. Lacking an enzyme necessary to fashion a functional immune system SCID mice are unable to fight against infections and to reject transplants
SCT	Stem Cell Transplantation Transplantation of hematopoietic stem cells into myeloablatively pretreated donors in order to substitute the hematopoietic system
SOT	Solid Organ Transplantation Transplantation of solid organs e.g. kidney, liver, heart, lung, pancreas and intestine
T-20	New class of anti-HIV drugs which is used for the therapy of →AIDS. Unlike other antiretrovirals, T-20 is a fusion inhibitor blocking the entry of →HIV into cells
T-cell	A small lymphocyte developed in the thymus. It conducts the immune responses against infected or malignant cells
Thrombocytes	Blood platelets Small cell fragments that are crucial for blood clotting
TNF-α	Tumor necrosis factor- α is a →cytokine produced by →macrophages and →T cells that has multiple functions in the immune response
Tolerance induction	Tolerance is defined as persisting non-reactivity of the immune system to a specific antigenic pattern without immunosuppressive medication, i. e. tolerance for donor derived organs without →immunosuppressive drugs in transplantation medicine
TOR inhibitors	→Immunosuppressive drugs that inhibit the signal for lymphocyte proliferation and prevent acute organ →rejection after transplantation

Transformation potential

Possible modification of a cell, which leads to genetic changes

Tumor cell antigens

Specific structures on the surface of tumor cells that usually do not belong to the basic configuration of the individual organism and can be recognized as being foreign by the immune system

Tx

Abbreviation for transplantation

VEGF

Vascular Endothelial Growth Factor
Responsible for the growth of blood vessels and modulator of blood vessel permeability