Certificate Programme in Acupuncture for Integrative Cancer Care (United Kingdom)

Cancer Biology And Pathophysiology

Ablation refers to the removal or destruction of tissue, in the context of cancer biology and pathophysiology, it often involves the use of thermal or chemical methods to destroy cancer cells. Related terms include cryotherapy and radiofrequency ablation, which are used to treat various types of cancer. For example, radiofrequency ablation is used to treat liver and kidney cancers, while cryotherapy is used to treat prostate and skin cancers.

Acupuncture is a form of traditional Chinese medicine that involves the insertion of fine needles into specific points on the body to stimulate the body's natural healing processes. In the context of cancer biology and pathophysiology, acupuncture is used to manage symptoms and side effects associated with cancer and its treatment, such as nausea and vomiting. Related terms include auriculotherapy and electroacupuncture, which are used to stimulate specific points on the body.

Adenocarcinoma is a type of cancer that originates in the glandular tissue, which is found in various parts of the body, including the breast, lung, and colon. Related terms include ductal carcinoma and lobular carcinoma, which are types of breast cancer. For example, ductal carcinoma is the most common type of breast cancer, while lobular carcinoma is a less common type.

Angiogenesis is the process by which new blood vessels form from pre-existing vessels, which is important for the growth and metastasis of cancer cells. Related terms include anti-angiogenic therapy, which is used to inhibit the formation of new blood vessels and prevent the growth of cancer cells. For example, bevacizumab is an anti-angiogenic drug that is used to treat various types of cancer, including breast and colon cancer.

Apoptosis is the process of programmed cell death, which is important for maintaining tissue homeostasis and preventing cancer. Related terms include mitochondrial apoptosis and death receptors, which are involved in the regulation of apoptosis. For example, mitochondrial apoptosis is involved in the regulation of cell death in response to DNA damage.

Autophagy is the process by which cells recycle their own components, which is important for maintaining cellular homeostasis and preventing cancer. Related terms include macroautophagy and microautophagy, which are types of autophagy. For example, macroautophagy is involved in the regulation of cellular homeostasis in response to nutrient deprivation.

Biomarker is a molecule that is used to diagnose or monitor a particular disease or condition, such as cancer. Related terms include tumor markers and prognostic markers, which are used to diagnose and monitor cancer. For example, CA-125 is a tumor marker that is used to diagnose and monitor ovarian cancer.

Cachexia is a condition characterized by weight loss, muscle wasting, and fatigue, which is common in

patients with advanced cancer. Related terms include anorexia and asthenia, which are symptoms of cachexia. For example, anorexia is a symptom of cachexia that is characterized by a loss of appetite.

Carbohydrate antigen is a type of antigen that is found on the surface of cancer cells, which is used as a tumor marker. Related terms include CA-125 and CA-19-9, which are types of carbohydrate antigens. For example, CA-125 is a tumor marker that is used to diagnose and monitor ovarian cancer.

Cell cycle is the process by which cells grow, divide, and differentiate, which is regulated by a complex system of checkpoints and regulatory proteins. Related terms include mitosis and meiosis, which are types of cell division. For example, mitosis is the type of cell division that results in the production of two daughter cells that are genetically identical to the parent cell.

Chemoprevention is the use of chemical agents to prevent or delay the development of cancer, which is often used in combination with other treatments. Related terms include chemotherapy and hormone therapy, which are types of cancer treatment. For example, tamoxifen is a chemopreventive agent that is used to prevent breast cancer in high-risk women.

Chromatin is the complex of DNA and histone proteins that makes up the nucleus of a cell, which plays a critical role in the regulation of gene expression. Related terms include epigenetics and gene regulation, which are involved in the regulation of chromatin structure and function. For example, epigenetic modifications such as methylation and acetylation can alter chromatin structure and regulate gene expression.

Cytokine is a type of signaling molecule that is involved in the regulation of the immune response, which plays a critical role in the development and progression of cancer. Related terms include interleukin and tumor necrosis factor, which are types of cytokines. For example, interleukin-2 is a cytokine that is used to stimulate the immune response and treat cancer.

Cytoskeleton is the network of filaments that provides structural support and mechanical stability to a cell, which plays a critical role in the regulation of cell shape and movement. Related terms include microtubules and actin filaments, which are components of the cytoskeleton. For example, microtubules are involved in the regulation of cell division and actin filaments are involved in the regulation of cell movement.

Dendritic cell is a type of immune cell that plays a critical role in the regulation of the adaptive immune response, which is involved in the development and progression of cancer. Related terms include antigen presentation and immune surveillance, which are involved in the regulation of the immune response. For example, dendritic cells are involved in the presentation of antigens to T-cells and the stimulation of an immune response.

Differentiation is the process by which a cell becomes specialized and mature, which is regulated by a complex system of signaling pathways and regulatory proteins. Related terms include embryonic development and tissue homeostasis, which are involved in the regulation of differentiation. For example, embryonic development is the process by which a fertilized egg develops into a mature organism.

DNA damage is the process by which the genome is altered or mutated, which can lead to the development

and progression of cancer. Related terms include genetic instability and epigenetic alterations, which are involved in the regulation of DNA damage. For example, genetic instability can lead to the development of cancer, while epigenetic alterations can regulate gene expression and contribute to the development of cancer.

Epigenetics is the study of heritable changes in gene expression that do not involve changes to the underlying DNA sequence, which plays a critical role in the regulation of cancer development and progression. Related terms include methylation and acetylation, which are types of epigenetic modifications. For example, methylation of DNA can silence gene expression, while acetylation of histones can activate gene expression.

Gene expression is the process by which the information encoded in a gene is converted into a protein, which is regulated by a complex system of signaling pathways and regulatory proteins. Related terms include transcription and translation, which are involved in the regulation of gene expression. For example, transcription is the process by which DNA is transcribed into RNA, while translation is the process by which RNA is translated into protein.

Genomics is the study of the genome, which is the complete set of DNA sequences that make up an organism's genetic material. Related terms include proteomics and metabolomics, which are involved in the study of the proteome and metabolome. For example, proteomics is the study of the complete set of proteins that are produced by an organism, while metabolomics is the study of the complete set of metabolites that are produced by an organism.

Hormone therapy is a type of cancer treatment that involves the use of hormones to stimulate or inhibit the growth of cancer cells, which is often used to treat hormone-sensitive cancers such as breast and prostate cancer. Related terms include estrogen and testosterone, which are types of hormones that are involved in the regulation of cancer growth. For example, estrogen is a hormone that is involved in the regulation of breast cancer growth, while testosterone is a hormone that is involved in the regulation of prostate cancer growth.

Immune response is the defense mechanism that is used by the body to protect against infection and disease, which plays a critical role in the development and progression of cancer. Related terms include adaptive immunity and innate immunity, which are types of immune responses. For example, adaptive immunity is the type of immune response that is mediated by T-cells and B-cells, while innate immunity is the type of immune response that is mediated by neutrophils and macrophages.

Inflammation is the response of the body to injury or infection, which plays a critical role in the development and progression of cancer. Related terms include chronic inflammation and acute inflammation, which are types of inflammation. For example, chronic inflammation is the type of inflammation that is characterized by a persistent and long-term inflammatory response, while acute inflammation is the type of inflammation that is characterized by a rapid and short-term inflammatory response.

Karyotype is the characteristic pattern of chromosomes that is found in an individual's cells, which can be

used to diagnose and monitor genetic disorders such as cancer. Related terms include cytogenetics and genetic testing, which are involved in the study of chromosomes and the diagnosis of genetic disorders. For example, cytogenetics is the study of the structure and function of chromosomes, while genetic testing is the use of genetic tests to diagnose and monitor genetic disorders.

Lymphoma is a type of cancer that originates in the lymphatic system, which is the system of organs and tissues that are responsible for the production of immune cells. Related terms include Hodgkin lymphoma and non-Hodgkin lymphoma, which are types of lymphoma. For example, Hodgkin lymphoma is a type of lymphoma that is characterized by the presence of Reed-Sternberg cells, while non-Hodgkin lymphoma is a type of lymphoma that is characterized by the absence of Reed-Sternberg cells.

Macrophage is a type of immune cell that plays a critical role in the regulation of the immune response, which is involved in the development and progression of cancer. Related terms include monocyte and dendritic cell, which are types of immune cells that are involved in the regulation of the immune response. For example, monocytes are the precursors to macrophages and dendritic cells, while dendritic cells are involved in the presentation of antigens to T-cells.

Malignant is a term that is used to describe a type of tumor that is cancerous and has the potential to metastasize and cause death. Related terms include benign and in situ, which are types of tumors that are non-cancerous and do not have the potential to metastasize. For example, benign tumors are non-cancerous tumors that do not have the potential to metastasize, while in situ tumors are non-cancerous tumors that are confined to a specific location and do not have the potential to metastasize.

Metastasis is the process by which cancer cells spread from the primary site to distant sites, which is a critical step in the development and progression of cancer. Related terms include invasion and migration, which are involved in the regulation of metastasis. For example, invasion is the process by which cancer cells invade the surrounding tissue, while migration is the process by which cancer cells migrate to distant sites.

MicroRNA is a type of small RNA molecule that plays a critical role in the regulation of gene expression, which is involved in the development and progression of cancer. Related terms include siRNA and miRNA, which are types of small RNA molecules that are involved in the regulation of gene expression. For example, siRNA is a type of small RNA molecule that is involved in the regulation of gene expression by inducing the degradation of specific messenger RNAs.

Mitosis is the process of cell division that results in the production of two daughter cells that are genetically identical to the parent cell, which is regulated by a complex system of checkpoints and regulatory proteins. Related terms include meiosis and apoptosis, which are types of cell division and cell death. For example, meiosis is the type of cell division that results in the production of gametes, while apoptosis is the type of cell death that is regulated by a complex system of signaling pathways and regulatory proteins.

Molecular biology is the study of the molecular mechanisms that underlie the development and progression of cancer, which involves the use of genetic and epigenetic techniques to analyze the molecular changes that occur in cancer cells. Related terms include genomics and proteomics, which are involved in the study of the genome and proteome. For example, genomics is the study of the complete set of DNA sequences

that make up an organism's genetic material, while proteomics is the study of the complete set of proteins that are produced by an organism.

Mutation is a change in the DNA sequence of a gene or chromosome, which can lead to the development and progression of cancer. Related terms include genetic instability and epigenetic alterations, which are involved in the regulation of mutation. For example, genetic instability can lead to the development of cancer, while epigenetic alterations can regulate gene expression and contribute to the development of cancer.

Necrosis is a type of cell death that is characterized by the premature death of cells and tissues, which can be caused by injury or infection. Related terms include apoptosis and autophagy, which are types of cell death and cellular recycling. For example, apoptosis is a type of cell death that is regulated by a complex system of signaling pathways and regulatory proteins, while autophagy is a type of cellular recycling that is involved in the regulation of cellular homeostasis.

Neoplasm is a type of tumor that is characterized by the abnormal growth of cells and tissues, which can be benign or malignant. Related terms include cancer and carcinoma, which are types of neoplasms. For example, cancer is a type of neoplasm that is characterized by the uncontrolled growth of cells and tissues, while carcinoma is a type of neoplasm that originates in the epithelial tissue.

Oncogene is a type of gene that has the potential to cause cancer, which is often activated or overexpressed in cancer cells. Related terms include tumor suppressor gene and proto-oncogene, which are types of genes that are involved in the regulation of cancer development. For example, tumor suppressor genes are genes that help to prevent the development of cancer, while proto-oncogenes are genes that have the potential to cause cancer when they are activated or overexpressed.

Pathology is the study of the changes that occur in cells and tissues as a result of disease or injury, which is used to diagnose and monitor cancer. Related terms include histology and cytology, which are involved in the study of the structure and function of cells and tissues. For example, histology is the study of the structure of tissues, while cytology is the study of the structure and function of cells.

Pharmacogenomics is the study of the relationship between genetics and drug response, which is used to develop personalized cancer treatments. Related terms include genomics and proteomics, which are involved in the study of the genome and proteome. For example, genomics is the study of the complete set of DNA sequences that make up an organism's genetic material, while proteomics is the study of the complete set of proteins that are produced by an organism.

Prognosis is the prediction of the likely outcome of a disease or condition, which is used to determine the best course of treatment for cancer patients. Related terms include diagnosis and treatment, which are involved in the management of cancer. For example, diagnosis is the process of determining the presence and type of cancer, while treatment is the use of therapies such as surgery, chemotherapy, and radiation to manage cancer.

Proteomics is the study of the complete set of proteins that are produced by an organism, which is used to understand the biological processes that underlie the development and progression of cancer. Related

terms include genomics and metabolomics, which are involved in the study of the genome and metabolome. For example, genomics is the study of the complete set of DNA sequences that make up an organism's genetic material, while metabolomics is the study of the complete set of metabolites that are produced by an organism.

Radiotherapy is a type of cancer treatment that involves the use of ionizing radiation to kill cancer cells, which is often used in combination with other treatments such as surgery and chemotherapy. Related terms include external beam radiation and internal radiation, which are types of radiotherapy. For example, external beam radiation is a type of radiotherapy that involves the use of a machine to deliver radiation to the tumor site, while internal radiation is a type of radiotherapy that involves the use of radioactive materials that are implanted directly into the tumor site.

Receptor is a type of molecule that is found on the surface of cells, which plays a critical role in the regulation of cell signaling and communication. Related terms include ligand and signaling pathway, which are involved in the regulation of cell signaling and communication. For example, ligands are molecules that bind to receptors and activate signaling pathways, while signaling pathways are the complex networks of molecules that regulate cell signaling and communication.

Sarcoma is a type of cancer that originates in the connective tissue, which includes bone, cartilage, and fat. Related terms include osteosarcoma and chondrosarcoma, which are types of sarcoma. For example, osteosarcoma is a type of sarcoma that originates in the bone, while chondrosarcoma is a type of sarcoma that originates in the cartilage.

Stem cell is a type of cell that has the ability to differentiate into multiple cell types, which plays a critical role in the development and progression of cancer. Related terms include embryonic stem cell and adult stem cell, which are types of stem cells. For example, embryonic stem cells are found in the early embryo and have the ability to differentiate into all cell types, while adult stem cells are found in adult tissues and have the ability to differentiate into specific cell types.

Tumor is a type of abnormal growth that can be benign or malignant, which is characterized by the uncontrolled growth of cells and tissues. Related terms include cancer and neoplasm, which are types of tumors. For example, cancer is a type of tumor that is characterized by the uncontrolled growth of cells and tissues, while neoplasm is a type of tumor that is characterized by the abnormal growth of cells and tissues.

Vaccine is a type of biological preparation that is used to stimulate the immune system and prevent disease, which is being developed as a potential treatment for cancer. Related terms include immunotherapy and checkpoint inhibitors, which are types of cancer treatments that involve the use of the immune system to kill cancer cells. For example, immunotherapy is a type of cancer treatment that involves the use of the immune system to kill cancer cells, while checkpoint inhibitors are a type of cancer treatment that involves the use of drugs to inhibit the checkpoints that prevent the immune system from killing cancer cells.