Lab report 7 connective tissue

As the name suggests, the connecting tissue serves a connecting function: It supports and connects other tissues in the body. Unlike epithelial tissue, which has cells that are tightly packed together, the connecting tissue usually has cells scattered around an extracellular matrix of fibrous proteins and glycoproteins attached to the basement membrane. The primary elements of the connecting tissue include earth matter, fibres and cells. There are three main groups of connected tissues: Stretched connective tissue has organs in place and entpens epithelial tissue to other connected tissues. Dense connective tissue helps to pin the muscles to the bone and connect the bones together on the joints. Specialized connecting tissue contains many different tissues with specialized cells and unique earthly substances. Some are solid and strong, others are fluid and flexible. Examples include adipose, cartilage, bones, blood and hopeless. The earthly substance acts as a fluid matrix that suspends cells and fibres within a particular type of connecting tissue. Tissue fibres and matrix are synthesized with specialised cells called fibroblasts. There are three main groups of connected tissues: light connecting tissue, dense connecting tissue and specialised connecting tissue. This image of olaxad connecting tissue shows collagen fibers (red), elastic fibers (black), matrix and fibroblasts (cells that produce fibers). Ed Reschke/Photolibrary/Getty Images In vertebrates, the most common type of connecting tissue is lightweight connective tissue. It has organs in place and hardens epithelial tissue to other garment tissues. The light-hearted connecting tissue is so-called because of the binding and the type of its constituent fibers. These fibres form an irregular network with spaces between the fibres. The rooms are filled with earthly matter. The three main types of non-absolution fibers include collagen, elastic and reticular fibers. Collagen fibers are made of collagen and are made up of bundles of fibers that are coils of collagen molecules. These fibers help strengthen the connecting tissue. Elastic fibres are made of protein elasin and are stretchable. They help with the elasticity of the connecting tissues. Reticular fibres connect connecting tissues to other tissues. The comfortable connecting tissues provide the support, flexibility and strength needed to support internal organs and structures such as blood vessels, wireless veins and nerves. This image of the skin dermis shows a dense fibrous connecting tissue. It can be seen irregular collagen fibers (pink) and fibroblastic cores (purple). Ed Reschke/Photolibrary/Getty Images Another type of connective tissue is dense or fibrous connective tissue that can be found in the putty and ligament. These structures help attach muscles to the bone and connect the bones together on the joints. Dense connecting tissue consists of large amounts of tightly packed collagen fibres. Compared to omal-related tissue, dense tissue higher proportion of collagen fibres than ground substances. It is thicker and stronger than the untied connecting tissue and forms a protective layer of the capsule around the organs, such as the liver and kidneys. Dense connecting tissue can be categorized into dense regular, dense irregular and elastic connecting tissues. Densely regular: Tendons and ligaments are examples of dense regular connective tissue. Dense irregularity: Much of the dermiss layer of the skin consists of dense irregular connecting tissue. The membrane capsule that surrounds several organs is also a dense irregular tissue. Elastic: This tissue allows stretching in structures such as arteries, vocal cords, trachea, and bronchial tubes in the lungs. This image shows a sample of adipose tissue from fat cells (adipocyte, blue) surrounded by a fine strand of supporting connecting tissue. Adipose tissue forms an insulating layer under the skin, storing energy in the form of fat. Steve Gschmeissner/Science Photo Library/Getty Images Specialized connecting tissues include several different tissues with specialized cells and unique earthly matter. Some of these tissues are solid and strong, while others are liquid and flexible. Examples include adipose, cartilage, bones, blood and hopeless. Adipose tissue is a form of hinged connecting tissue that stores fat. Adipose lines of organs and body cavities to protect organs and insulate the body from heat loss. Adipose tissue also produces endocrine hormones that affect activities such as blood clotting, insulin sensitivity, and fat storage. The primary cells of adipose are adipocyte. These cells store fats in the form of triglycerides. Adipocytis appear round and swollen when fat is stored and shrinks as fat is used. Most of the adipose tissue is described as white adipose, which works in energy storage. Both brown and beige adipose burn fat and produce heat. This micrograph shows hialin cartilage, a semi-rigid connecting tissue from the human trachea (trachea). Steve Gschmeissner/Science Photo Library/Getty Images Cartilage is a form of fibrous connecting tissue that consists of tightly packed collagen fibers in a rubber gelatinous substance called chondrin. The skeletons of sharks and human embryos are composed of cartilage. Cartilage also provides flexible support for certain structures in adult people, including the nose, trachea and ears. There are three different types of cartilage, each with different characteristics. Hialin cartilage is the most common type and is found in areas such as the trachea, ribs, and nose. Hialin cartilage is flexible, elastic and surrounded by a dense membrane called perichondrium. Fibrocartilage is the most potent type of cartilage and consists of hialin and dense collagen fibers. It is unflexible, tough and is located in areas such as between vertebrae, in some joints and in the heart valves. Fibrocardilage has no perichondrium. Elastic cartilage contains elastic fibers and is the most flexible Cartilage. It is found in locations such as ear and stomachs (voice box). This micrograph shows the spongy bone from the vertebrae. The cancellous bone is characterized by the arrangement of honey, which comprises a mesh trabeculae (tissue in the form of a stick). These structures provide support and strength to the bones. Susumu Nishinaga/Science Photo Library/Getty Images Bone is a type of mineralized connective tissue that contains colic and calcium phosphate, a mineral crystal. Calcium phosphate gives bone strength. There are two types of bone tissue: spongy and compact. The spongy bone, also called the cancellous bone, gets its name because of its spongy appearance. Large spaces or vascular cavities in this type of bone tissue contain blood vessels and bone marrow. The spongy bone is the first type of bone that is formable during bone formation and is surrounded by a compact bone. The compact bone, or cortisol bone, is strong, dense and forms a hard surface of the bone. Small tons inside the tissue allow the passage of blood vessels and nerves. Mature bone cells or osteocytis are found in compact bones. It is a micrograph of a group of red blood cells (red blood cells) that travel through the arterioles (a small branch of the artery). P.M. Motta & S. Correr/Science Photo Library/Getty Images Like other types of connected tissues, blood is derived from mesomodmodosis, the middle germ layer of the developing embryo. Blood also serves to connect other organic systems together by supplying nutrients and transmitting signal molecules between cells. Plasma is an extracellular matrix of blood with red blood cells, white blood cells and platelets that are suspended in plasma. Lymph is another type of liquid connective tissue. This clear fluid comes from blood plasma, which stands out from the blood vessels in the capillary beds. An component of the lymphatic system, lympha contains cells of the immune system that protect the body from pathogens. Lymphoma returns to the bloodstream through lymphatic vessels. In addition to connecting tissue, other tissues in the body include: Epithelial tissue: This type of tissue covers the body's surfaces and lines of the body cavities, providing protection and allowing the absorption and excretion of the substance. Muscle tissue: Exciting cells that are able to shrink allow muscle tissue to create body movement. Neural tissue: This primary tissue of the nervous system allows communication between different organs and tissues. It consists of neurons and glial cells. Unlike epithelials, the connecting tissue is sparsely populated with cells and contains a large extracellular matrix consisting of protein fibres, glycoproteins and proteoglycles. The function of this type of tissue is the provision of structural and mechanical support for other tissues and the transmission of nutrients and waste between circulations and other tissues. These tissues have two main components, matrix and different support cells. These two components will be at the center of the lab. Most often, different types of connecting tissues are determined by their content of three different types of extracellular fibres: collagen fibres, elastic fibers and reticular fibers. Collagen fibers Collagen fibers are composed of types I, II or III collagen and are present in all types of connecting tissue. Collagen connecting tissue is divided into two types, based on the ratio of collagen fibers and ground matter. Earth matter is a watery gel of glycoproteins and proteoglyns, which occupies the space between the cellular and fibrilar elements of the connecting tissue. Loose (areolar connecting tissue) is the most abundant form of collagen connecting tissue. It occurs in small, extended bundles separated by regions containing earthly matter. Dense connecting tissue is enriched in collagen fibers with little ground matter. If the fibre bundle is tightly packed in one direction, it is called regular; if it is directed in several directions, it is called as incorrect. An example of regular dense connective tissue is the kite; example of irregular dense connective tissue is dermis. Reticular fibres Reticular fibres consist of type III collagen. Unlike thick and sharp collagen fibers, reticular fibers form a thin reticular network. Such networks are widespread between different tissues and form support frames in the liver, lymphoid organs, capillary endothelials and muscle fibers. Elastic fibres Elastic fibres contain protein elastine, which is co-polymerized with protein fibrillation. These fibers are often organized in lamellar leaves, as in the walls of the arteries. Dense, regular, elastic tissue is characterized by ligaments. Elastic fibers are stretchable because they are usually disorganized – stretching these fibers makes them take on an organized structure. Connective Tissue Fibroblast Fibroblasts cells are by far the most common type of stem cell in relation to tissue. Fibroblast synthesizes the colic and earthly matter of the extracellular matrix. These cells make a large amount of proteins that they secrete to build a binding tissue layer. Some fibroblasts have a contractual function; these are called myofibroblasts. Macrophagus The connecting tissue is representative of the reticuloendotelija, or mononuclear phagocyte, system. This system consists of a number of tissue-specific, mobile, phagocytic cells that descend from monocytes - these include kupffer cells of the liver, alveolar lung macrophages, the microglycaemia of the central nervous system, and reticular spleen cells. Each of these will be met later in the course; for now, make sure that you recognize that everyone is descending from the monocyte, and that the macrophal is a variant of the connecting tissues. Macrophages are inseparable from however, it can be identified when they internalize large amounts of visible tracers, such as dyes or carbon particles. Macrophaging phagocytose of foreign material in layers of connecting tissues and also play an important role as the antigen represents cells, a function that will learn more about immunobiology. Mast Cell Mast cells are granulate cells commonly found in the connecting tissue. These cells mediate immune responses to foreign particles. In particular, they release large amounts of histamine and enzymes in response to antigen recognition. This process of degranulation is protective when foreign organisms break into the body, but it is also the cause of many allergic reactions. White Fat Cell White fat cells or adipocyte are specialized in storing triglycerides, and occur individually or in small groups scattered throughout the disused connective tissue. They are particularly common with smaller blood vessels. When fat cells accumulate in such an abundance that they ext and replace cellular and fibrous elements, the accumulation is referred to as adipose tissue. These cells can grow up to 100 microns and usually contain once centrally located vacuolo lipid - the cytoplasm forms a circular ring around this vakuole, and the dish is compressed and displaced to the side. The function of white fat is to serve as an energy source and thermal insulator. Brown fat cells Brown fat cells are highly specialized in temperature control. These cells are ailes in newborns and mammals at rest, but are rare in adults. They have numerous, smaller lipid drops and a large number of mitochondria, whose cytochromes bypass the brown color of tissues. The electronic transport chain of these mitochondria is disturbed by a non-assembled protein that causes the mitochondrial gradient of hydrogen ion to dissolve without ATP production. It creates heat. Cartilage Cartilage is a specialized form of connecting tissue produced by differentiated fibroblast-like cells called chondrocytes. This is characterised by an extraordinary extracellular matrix consisting of different proportions of fibres from the connecting tissues embedded in a gel-like matrix. Chondrocytes are located inside the lackune in the matrix they built around them. Individual lactates may contain several cells derived from the common progenitor. Lacunae are separated from each other as a result of sequent link activity chondrocytes. Three types of cartilage are classified according to the abundance of certain fibres and the characteristics of their matrix. Hialin Cartilage Hialin Cartilage has a matrix consisting of type II collagen and chondromucoprotein, a copolymer of chondroitin sulphates A and C with proteins. Due to the high concentration of negatively filled sulphate groups, it is intensely basophilic under H&E. This cartilage is located in the nose, the breath rings, and where the ribs join the chest. Fibrocartilage Fibrocartilage is differentied by its high content and The distribution of type I collagen fibers. Elastic cartilage Elastic cartilage is characterized by the presence of autistic elastic fibers and is quite cellular. It is made of type II collagen and is found in ear aurikli and epiglottis. Epiglottis.