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A picture of an animal cell labeled

Animal cells are the basic unit of life in organisms of the Animalia Kingdom. They are eukaryotic cells, which means that they have a real nucleus and specialized structures called organelles that perform different functions. Animal cells do not have specific organelles for plants such as cellular walls, which support the vegetable cell or chloroplasts, the busy that performs photosynthesis. 3D model of a typical animal animal animals, plants, mushrooms and protections are all made up of at least one eukaryotic cell. On the contrary, the bacteria and the Archaea consist of a single preychainary cell. All cells are surrounded by a cell membrane (also called a plasma membrane). The cell membrane is the border that separates the inside of the cell from the outside of the cell. The plasma membrane encloses all the components of the cells, which are suspended in a fluid similar to gel called the cytoplasm. The cytoplasm is the position of the organelles. Eukaryotic cells are distinguished from the prokaryotic cells from the presence of a defined core and other organelles related to the membrane, such as mitochondria, the endoplasmic lattice and the Golgi apparatus. The predchnational cells do not have a defined core (instead, a citoplasm region - called the nucleotide $\hat{c} \hat{a} \hat{r}$ - holds the genetic material). There are also organelles related to the membrane. The animals are all multicellular, which means that multiple cells They work together to form the whole organism. In complex organisms, such as humans, these cells can be highly specialized to perform different functions. As such, they often seem and work very differently from each other, even if they are all human cells. Even within an organism, complex animals like humans have a variety of different types of cells. Every aspect and work very differently. Animal cells and vegetable cells are both eukaryotic. So, both have a defined core and Other organelles related to the membrane. However, even animal and vegetable cells have some fundamental differences. Animal cells, unlike de The cells of plants and mushrooms, do not have a cell wall. Instead, multicellular animals have other structures that provide support to their tissues and organs, as a skeleton and cartilage. Furthermore, animal cells are also lacking chloroplasts found in plant cells. The chloroplasts are specialized organs that trapping energy from the sun and use it as a fuel to produce sugars in a process called photosynthesis. Moreover, while vegetable cells tend to have a large central vacuole, animal cells do not have this function. Some animal cells have small vacuoles, but their function is to assist in storage and transport of large molecules. Animal cells have a variety of different organsels that Together to allow the cell to perform its functions. Each cell can be designed as a large factory with many departments, such as production, packaging, shipping and accounting. Different organelns each represent these departments. There are many different animal cells that each perform specialized functions. Specialized. not all animal cells have all kinds of organelles, but in general animal cells contain most (if not all) of the following organelles. In addition, some organelles will be very abundant in some cells and not in others. Diagram labeled of a typical animal cell The nucleus contains all the genetic material of a cell. This genetic information is called deoxribonucleic acid (DNA). DNA contains all the instructions for protein production, which control all body activities. Therefore, the nucleus is like the office of the cell manager. DNA is an extremely precious and strictly regulated molecule. Therefore, there is not only naked in the nucleus! Instead, DNA is closely wrapped around structural proteins called istons to form chromatin. When the cell is ready to divide to transmit genetic information to new cells (daughter cells), chromatin forms highly condensed structures called chromosomes. The nucleus regulates which genes are transformed into the cell, and when. This controls the activity of the cell. The active genes at a given time will be different depending on the type of cell and the function it performs. The nucleus is surrounded by a nuclear casing (also called nuclear membrane), which separates it from the rest of the cell. The nuclear envelope also contains pores that allow the entry and exit of certain molecules. In addition to all genetic material, there is also a subsection of the nucleus called nucleolus, which resembles a nucleus within the nucleus. The nucleus is the site of the synthesis of ribosomes. The nucleus is surrounded by a nuclear casing (also called nuclear membrane), which separates it from the rest of the cell. The nucleus also regulates the growth and division of the cell. When the cell prepares to divide during the mitosis, the chromosomes in the nucleus duplicate and separate, and two daughter cells are formed. The organelles called centrosomes help organize DNA during the cell division. The nucleus contains DNA in the form of chromatin. The chromatin can be further compacted to form chromosomes. The nucleus is surrounded by a double enclosure that contains pores to allow certain materials to pass inside and out. The nucleus also contains a region called nucleolus. Ribosomes are organelles found in both prokaryotic and eucariotic cells. They are like mini machines that synthesize all the proteins in the cell. In every single animal cell, there can be up to 10 million ribosomes! Ribosomes form the cell manufacturing department. In the nucleus, a DNA sequence that encodes for a specific protein is copied to an intermediate molecule called messenger RNA (mRNA). The mRNA molecule carries this information to the ribosome and its sequence determines the order of amino acids in a chainRibosome synthesizes this polypeptide chain, which eventually folds to become a protein. In animal cells, ribosomes can be found freely in the cell cytoplasm or or to the endoplasmic reticle. Endoplasmic reticule (ER) is a network of flattened loots, tied to membranes, involved in the production, processing and transport of protein synthesized by ribosomes. The endoplasmic reticle is like the assembly chain of the cell, where the products produced by ribosomes are processed and assembled. There are two types of endoplasmic reticle: smooth and rough. The raw ER has ribosomes attached to the surface of the bags. Smooth ER has no connected ribosomes and has functions in storage, syntheizing lipids, removing toxic substances. The Golgi apparatus, also called Golgi complex or Golgi body, receives proteins from the ER and folds, orders and packs them in vesicles. The Golgi apparatus is like the cell shipping department, as it packs proteins for delivery to their destinations. Like the ER, the Golgi apparatus is also made up of a series of bags tied to the membrane. These bags come from vesicles that sprouted outside the emergency room. Unlike the membrane system in the ER, which are interconnected, the bags of the Golgi apparatus are discontinuous. Comparison of the functions of the endoplasmic reticle and the apparatus of Golgi Lysosomes are a type of vesicle. Vesicles are spheres surrounded by a membrane that excludes their content from the rest of the cytoplasm. Vesicles are widely used within the cell for the metabolism and transport of large molecules that cannot cross the membrane without help. Lysosomes are specialized vesicles containing digestive enzymes. These enzymes can decompose large molecules such as organelles, carbohydrates, lipids and protein in smaller units so that the cell can reuse them. Therefore, they are like the disposal/recycling department of cell waste. The mitochondria are the organelles that produce energy, commonly known as "the electric power plant of the cell". The cellular breathing process takes place in mitochondria. During this process, sugars and fats are broken through a series of chemical reactions, freeing energy in the form of triphosphate adenosine (ATP). ATP is like the energy currency of the cell. Think of each molecule as a rechargeable battery that can be used to power various cell processes. Citosol is the gelatinous liquid contained within the cells. The cytosol and all organelles within it, except the nucleus, are collectively called cellular cytoplasm. This cytosol consists mainly of water, but also contains ions, proteins and small molecules. The pH is generally neutral, around 7. The cytoskeleton is a network of filaments and tubules present in the cell cytoplasm. It has many functions: it gives the shape of the cell, provides strength, stabilizes the tissues, still the organelles insidethe cell and has a role in cellular signaling. It also provides a mechanical support to allow cells to move and divide. There are three types of cytoskeletal filaments: cytoskeletal filaments: microtubules and intermediate filaments. The cell membrane surrounds the entire cell and separates its components from the external environment. The cell membrane is a double layer composed of phospholipids (called bilayer phospholipid). Phospholipids are molecules with a phosphate group head connected to glycerol and two tails of fatty acids. They form spontaneously to double membranes in water due to hydrophilic properties of the head and hydrophobic properties of the tails. The cell membrane is selectively permeable, which means only a few molecules to enter and exit. Oxygen and carbon dioxide easily pass, while larger or charged molecules must pass through special channels, bond to receptors, or be swallowed. Bibliography Alberts B., Johnson A., Lewis J., et al. Molecular biology of the cell. 4th edition. New York: Garland Science; 2002. Cell compartmentation. Available from: eukaryotic cells | Learn the science at the stop. Retrieved 15 June 2020, from Bellish H., Berk A., Chiursky S.I., et al. Molecular cell biology. 4th edition. New York: W. H. Freeman; 2000. Section 5.4, Organelli of the Eucharistic Cell. Available from: /

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