Biolingo: Flashcards for Membranes and ECM

What am I? A carboxylic acid with an aliphatic chain that is unsaturated when it contains double bonds and saturated in the absence of double bonds.
Answer: Fatty acid

What am I? A cell adhesion protein that is calcium-dependent.
Answer: Cadherin

What am I? A cell type found in muscle tissue.
Answer: Myocyte

What am I? A cellular structure whose main role is the adhesion of neighboring cells.
Answer: Desmosome

What am I? A component of the cytoskeleton that is formed of a hollow cylinder made of α and β tubulin heterodimers.
Answer: Microtubule

What am I? A constituent of the cytoskeleton formed from fibrous proteins assembled in tetramers.
Answer: Intermediate filament

What am I? A constituent of the cytoskeleton that maintains the form of the cell and that has a diameter of 8-12 nm. It is the most stable structure of the cytoskeleton.
Answer: Intermediate filament

What am I? A family of heterophilic cell adhesion proteins that depends on calcium. It is composed of a simple chain of transmembrane glycoproteins.
Answer: Selectin

What am I? A glycoprotein of the extracellular matrix that attaches cells to the matrix.
Answer: Fibronectin

What am I? A glycoprotein in the extracellular matrix that forms resistant fibers. I am abundant in connective tissues and bones.
Answer: Collagen

What am I? A junction that allows sealing between cells.
Answer: Tight junction

What am I? A molecule made up of three fatty acids and a glycerol.
Answer: Triglyceride

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What am I? A molecule that contains a hydrophobic and a hydrophilic region.
Answer: Amphipathic

What am I? A molecule that consists of a lipid on which is fixed a carbohydrate.
Answer: Glycolipid

What am I? A motor protein that is associated with microtubules. It is an ATPase that moves to the negative extremity of microtubules.
Answer: Dynein

What am I? A motor protein that is associated with microtubules. It is an ATPase that moves to the positive extremity of microtubules.
Answer: Kinesin

What am I? A molecule that serves as energy storage and thermal insulation.
Answer: Triglyceride

What am I? A protein associated with intermediate filaments. Linked to desmosomes, this protein is present in epithelial cells.
Answer: Keratin

What am I? A protein associated with microfilaments that allows the crosslinking of actin filaments.
Answer: Fimbrin

What am I? A protein associated with microfilaments that allows the formation of crosslinked networks.
Answer: Filamin

What am I? A protein associated with microfilaments that allows the formation of lateral branches.
Answer: Arp2/3 Complex

What am I? A protein associated with microfilaments that allows anchoring to the cell membrane.
Answer: Spectrin

What am I? A protein associated with microfilaments that binds to G-actin and that allows the polymerization of G-actin into F-actin.
Answer: Thymosin Beta-4

What am I? A protein that associates microfilaments with the extracellular matrix.
Answer: Integrin

What am I? A protein that binds around thin filaments to block the binding between myosin and actin.
Answer: Tropomyosin

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What am I? A protein that stabilizes microtubules by binding to the tubulin subunits of dendrites and the axon.
Answer: MAP2

What am I? A protein that stabilizes the extremity of microtubules.
Answer: TIP

What am I? A stem cell that will form a muscle cell through the process of myogenesis.
Answer: Myoblast

What am I? A steroid present in the cell membrane of animals.
Answer: Cholesterol

What am I? A steroid present in the cell membrane of fungi and protozoa.
Answer: Ergosterol

What am I? A steroid present in the cell membrane of plants.
Answer: Phytosterol

What am I? An amphipathic lipid that is composed of a hydrophilic head and hydrophobic tails.
Answer: Phospholipid

What am I? Being an elastic glycoprotein, I have an elastic structure that is essential for the lungs as well as the circulatory system.
Answer: Elastin

What am I? Composed of two subunits, this transmembrane receptor protein binds the extracellular matrix and the cytoskeleton.
Answer: Integrin

What am I? I am composed of two perpendicular centrioles, each formed from 9 triplets of microtubules. During mitosis, I allow the formation of the mitotic spindle.
Answer: Centrosome

What am I? In the form of a microfilament, this regulatory protein blocks the myosin-binding sites when the muscle fiber is at rest.
Answer: Tropomyosin

What am I? Formed by the cytoskeleton during cell division, this structure allows the division of homologous chromosomes.
Answer: Mitotic spindle

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What am I? Forming a fibrous structure, this glycoprotein is responsible for the rigidity of the extracellular matrix.
Answer: Collagen

What am I? Present at the base of cilia and flagella, this eukaryotic cell structure is made up of a centriole formed from 9 triplets of microtubules. It allows microtubule nucleation.
Answer: Basal body

What am I? The protein that stabilizes microfilaments to prevent shortening.
Answer: CAP

What am I? The component of the cytoskeleton that is made from linear polymers of actin forming a flexible structure resembling a helix.
Answer: Microfilament

What is composed of a polycyclic sterol nucleus, a carbon side chain and a polar head?
Answer: Steroid

What is the term used for the cell membrane of a striated muscle cell?
Answer: Sarcolemma

What is the term used for the cytoplasm of muscle cells?
Answer: Sarcoplasm

What is the term used for the mitochondria of a muscle cell?
Answer: Sarcosome

What is the term used for the endoplasmic reticulum found in muscle cells?
Answer: Sarcoplasmic reticulum

Who am I? I am made of many myofibrils.
Answer: Muscle fibre

Complete the following sentence: The proportion of _____ in a cell membrane makes it possible to modulate its fluidity.
Answer: Steroids

Complete the following sentence: A growth cone is the prolongation of a neuron towards a target cell or organ. The growth cone forms two structures which are formed from _____: lamellipodia and filopodia.
Answer: Microfilaments

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Complete the following sentence: Microvilli are cytoplasmic extensions found on the surface of intestinal cells. Their role is to increase the exchange surface. Microvilli are reinforced by _____ which are anchored to a network of intermediate filaments.
Answer: Microfilaments

Complete the following sentence: Nuclear lamina is a structure that covers the interior of the nuclear envelope. It is made up of _____ and participates in the breakdown of the envelope during cell division.
Answer: Intermediate filament

Complete the following sentence: Some chemicals may have an effect on the stability of microtubules. Among other chemicals, _____ stabilizes the microtubules.
Answer: Taxol

Complete the following sentence: Some chemicals may have an effect on the stability of microtubules. Among other chemicals, _____ inhibits the assembly of microtubules.
Answer: Colchicine

Complete the following sentence: Transmembrane proteins are involved in cell adhesion. Inside the cell, these proteins are linked to the cytoskeleton. A _____ occurs when these proteins are bound with a different molecule on the extracellular side.
Answer: Heterophilic bond

Complete the following sentence: Collagen is the main protein of the extracellular matrix. It is synthesized in the lumen of the endoplasmic reticulum, where it associates to form a/an _____.
Answer: Triple helix

Complete the following sentence: When the inside of a cell is less concentrated in solutes than that of its environment, the cell will quickly become _____.
Answer: Hypotonic

Complete the following sentence: When the inside of a cell is more concentrated in solutes than that of its environment, the cell will quickly become _____.
Answer: Hypertonic

Complete the following sentence: When the inside of a cell has the same solute concentration as its environment, the cell is _____.
Answer: Isotonic

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Complete the following sentence: Transmembrane proteins are involved in cell adhesion. Inside the cell, these proteins are linked to the cytoskeleton. A _____ occurs when these proteins are bound with an identical protein on the extracellular side.
Answer: Homophilic bond

True or false: Microtubule motor proteins, which transport the vesicles to the (+) extremity of the MTs, are bringing vesicles to the periphery of the cells (i.e. anterograde transport).
Answer: True

True or false: Microtubule motor proteins, which transport the vesicles to the (-) extremity of the MTs, are bringing vesicles to the periphery of the cells (i.e. anterograde transport).
Answer: False

Active transportation may use an energy source other than ATP. Where does the energy come from in secondary active transport via symport?
Answer: Concentration gradient of another ion from the same direction

A new protein is discovered. Scientists have determined that the primary structure has very few hydrophobic regions. What does this tell scientists about the protein?
Answer: It is likely to be a globular, soluble protein.

Describes a myocyte.
Answer: A cell type found in muscle tissues

Describes a myoblast.
Answer: A stem cell that will grow into a muscle cell

Describes a myofilament.
Answer: The structural unit of a myofibril

Describes a myofibril.
Answer: A muscle fibril