

Similar to ~~the process~~ translocation in the use of H^+ in translocation, which occurs in plants. Products such as sucrose from photosynthesis must be transported to the sink. But to do this, the H^+ ions are actively transported out of the companion cell. This creates a concentration gradient for the H^+ ions to move from the cell with sucrose by facilitated diffusion. As it does this, it carries sucrose with through a cotransporter protein. Once the sucrose is in the cell, it can then move by facilitated diffusion into the phloem. #2

Processes such as photosynthesis and respiration produce ATP or need ATP. ATP itself has inorganic phosphate ions in its structure, which allow it to carry energy. ATP stands for adenosine tri-phosphate which means it has 3 phosphate groups attached to the ribose sugar in its structure. The bonds between these phosphate ions are what stores the energy which ATP carries. If the bonds are hydrolysed, then energy is released in the form of thermal energy. ATP itself stores 30.6 kJ of energy per ATP molecule. Phosphate ions are a key molecule to the structure of ATP and its function as an energy storage molecule, due to their ability to store energy in the bonds between the phosphate ions.

ATP is an important molecule in the collection

of muscles and the function of the sarcomere. But without Ca^{2+} ions, then contraction of the whole muscle may not be possible. and therefore the whole muscle may not be possible. For contraction to occur, Ca^{2+} ions first flood the muscle cell and bind to troponin on the actin molecule. This causes the troponin to move and exposes the binding site of actin to the myosin head. The myosin head can now attach to the actin molecule and a power stroke can occur to cause the contraction of the ~~muscle~~ sarcomere and so the muscle as a whole. The Ca^{2+} ions are what causes the troponin to move and so with Ca^{2+} , contraction will not occur as the myosin head would not be able to attach to actin and so a power stroke would not occur. 1/2 Enzyme?

Ca^{2+} ions also have an important role in the transmission of an impulse across a synapse. When an action potential arrives at a synapse, Ca^{2+} channels open on the synapse membrane allowing Ca^{2+} ions to diffuse into the pre-synaptic knob. This triggers vesicles containing a neurotransmitter to move to and fuse with the pre-synaptic membrane. The neurotransmitter then diffuses across the synaptic cleft and ~~diffuses~~ causes the depolarisation of the post-synaptic membrane. Then an action potential can be triggered to continue the transmission of the impulse. Without Ca^{2+} , the neurotransmitter could not have been released and so the impulse may not have been carried resulting in no response from organism to a stimulus. 1/2

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Admission to the Hospital

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Содержание

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Organisms in the culture feeding on

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