Structure of Cell

CELL SURFACE MEMBRANE

CELL WALL

CYTOPLASM

NUCLEUS

MITOCHONDRION

site of aerobic respiration to release energy

VACUOLE

animal: numerous, small, temporary

plant: large central vacuole

storage of substances within cell

maintains turgor in plant

CHLOROPLAST

RIBOSOME

free: make proteins that function within the cell

bound: make proteins for export out of the cell

RER

proteins made by the ribosomes are secreted into the lumen of the RER

proteins are exported from the RER within sacs known as vesicles

involved in the folding, packaging & transport of proteins

SER

detoxification of harmful substances eg drugs and poisons

synthesises substances like steroids & phospholipids

GOLGI APPARATUS

chemical modification of substances made by the endoplasmic reticulum

packaging of substances from the endoplasmic reticulum (proteins/lipids) within vesicles for storage and export out of cell

PROTEIN SYNTHESIS, TRANSPORT & EXPORT

ribosomes on RER synthesises proteins/-peptide chains

RER folds/packages polypeptide chains within lumen of RER

Structure of Cell (cont)

vesicles carrying the proteins pinch off from the RER & transported to the Golgi body

vesicles fuse with Golgi body

Golgi body chemically modifies & packages the proteins

vesicles carrying modified proteins pinches off from Golgi body and transported towards cell membrane

vesicles are transported towards & fuse with the cell membrane to release proteins out of cell

SPECIALISED CELLS

RED BLOOD CELL

HAEMOGLOBIN

enables transport of oxygen from lungs to all parts of the body

NO NUCLEUS

more space, store more haemoglobin to bind to & transport more oxygen

CIRCULAR BICONCAVE SHAPE

increase surface area to volume ratio of cell for more efficient/higher rate of diffusion of oxygen into & out of cell

FLEXIBLE SHAPE

fold and bend to squeeze into small capillaries to transport oxygen through the blood capillaries

ROOT HAIR CELL

LONG NARROW PROTRUSION

increases surface area to volume ratio of cell to allow more efficient absorption of water & dissolved mineral salts

CONCENTRATED CELL SAP

lower water potential of cell sap allows water to enter via osmosis at a higher rate

NUMEROUS MITOCHONDRIA

supply energy required for active transport of substances in to cell

MUSCLE CELLS

MANY MITOCHONDRIA

SPECIALISED CELLS (cont)

supply more energy for muscular contraction

MUSCLE FIBRES

for muscular contraction & movement to take place

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