

Chapter 4 Organelles

Mitochondrion - powerhouse of the cell

- ATP / respiration
- double membrane (more rxn)
- copies itself (DNA)
- can fuse with other Mitoch

Ribosome - synthesizes proteins

- made of RNA & protein
- most abundant organelle

Free - float in cytosol

- make proteins for use in cytosol

Ribosomes

Attached - make proteins to attach to the membrane

Endoplasmic Reticulum -

cell's highway

Rough - ribosomes attached

- make proteins for membrane

Smooth - no ribosomes present

- synthesize steroids & non-protein

- Ca^{++} >>>>>> muscle contraction

- remove toxic substances

Lysosomes - cell's garbage can

- contains digestive enzymes for
OLD protein, carb, DNA, RNA
worn out organelles
- play a role in embryonic
development

Cytoskeleton - network of protein strands

microfilaments - small strands (actin)

cell movement/muscle contraction

microtubules - large hollow tubes

extend from near nucleus(centrioles)

move chromosomes during mitosis

Cilia - small numerous hairlike projections

- all around cell ... movement

Flagella - one or two large projections

- ends of cell ... whiplike movement

Microtubule - 9:2 array becomes flagella

NUCLEUS - central processing unit of cell
- contains and controls information

Nuclear matrix - nuc. cytoskeleton

Nuclear envelope - membrane around nucleus

Nuclear pores - control passage of materials

Nucleolus - large dark area of nucleus
- site where ribosomes are
synthesized & partially assembled

Chromatin - strands of DNA & protein

Chromosomes - tightly coiled, organized DNA

