

Cells

Organelles

Nucleus

DNA - Deoxyribonucleic Acid

DNA -> (via messenger RNA) -> Ribosome (using Ribosomal RNA to hold mRNA in place) -> (via transfer RNA) -> Product

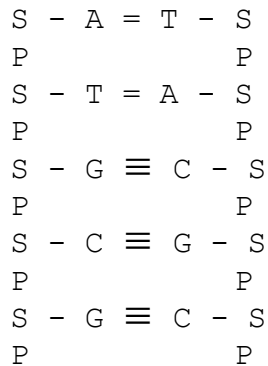
TRANSCRIPTION PROCESS

TRANSLATION PROCESS

1 less oxygen on ribose than RNA

Lengths of DNA = Chromosomes (About a yard long wrapped around histones - little proteins)

Double Stranded Complimentary Base Pairing



Double Strands = 2 halves of the latter

Uses: A, T, G, C

Adenine

Thyamine

Cyosine

Gaunine

Large Molecule

RNA - Ribonucleic Acid

Single Stranded

Small Molecule

Transports copied code off of DNA to Ribosomes

Uses: A U C G

Adenine

Uracil

Cyosine

Ganuine

Types

Messenger RNA

Transfers DNA code to Ribosomes

Ribosomal RNA

Holds mRNA in place

Transfer RNA

Each piece matches an Amino Acid

Nucleur Membrane

Regulate entry/exit

Made of: Phospholipid Bilayers

Ribosomes

Translates the mRNA sequences that were Transcribed from the DNA in to a Protein or

Enzyme

Mitochondria

Energy Processor

ATP + Oxygen = Energy + Carbondioxide

Endoplasmic Reticulum

Rough

with Ribosomes

Smooth

w/o Ribosomes

Network of membranes

Lysosome

Consumes external products for cell

Centrioles

Assist in Cell Division (Mytosis)

Cilia

hair like appendages to the cell

Flagella

cell tail

Life Cycle

Interphase

G1 - Growth Phase - Doing It's Job

S - Synthesis Phase - Doubles Chromosomes 46 -> 92

G2 - Growth Phase 2 - Job + Growth

Mitosis

Prophase

Nuclear Membrane dissolves

Nuclear Material Organizes

Centrioles move to outside of nucleus

Nuclear Material moves to center of cell

Metaphase

Material meets in middle

Anaphase

Material sperates to two sides of cell

Telophase

Begins to split

Cytokinesis - cell completes split

Transfer of Material Through Cell Membrane

Active

endocytosis

bring in to cell material through invagination

if liquid pinocytosis

if solid phagocytosis

exocytosis

expell through evagination material from cell

active transport

Go against the concentration gradient (low -> high)

Passive

diffusion

simple - high->low concentration of particles

facilitated = w/ help of helper molcules

filtration

Forcing Fluid through Fenestrations in a Filter

osmosis

high->low concentration of fluids

Crenate - loss of fluids to outside that is hypertonic (extra particles)

lysis - absorption of fluids from outside that is hypotonic (few particles)

homeostasis - no movement since equal particles in and out - isotonic

Cell Membrane

Regulate entry / exit to cell

Made of: Phospholipid Bilayers

Cytoplasm

Colloid (type of suspension) fluid for organelles

Cytology - The Study of Cells