Cheatography

Mitosis and the Cell Cycle Cheat Sheet

by wittek53 via cheatography.com/203009/cs/43175/

Definitions

Mitosis	A type of cell division by which one cell divides to produce two new genetically identical cells
Chromatin	loose, uncondensed complex of DNA and histones
Chromosome	Highly, condensed structure of DNA and Histones
Karyotype	A visual display of chromosomes in a cell
Homologous Pairs	Similar, but not identical; Have the same genes at the same locations, but have different alleles
Allele	Different versions of the gene
Diploid	two versions of each gene
Haploid	one version of each gene
Somatic Cell	Body cells
Germ-line Cell	Diploid stem cells that reside in the testes in males and the ovaries in females
Gamete Cells	Sperm and egg cells

Steps of Mitosis

Interphase	Takes place before mitois
Prophase	Chromatin condenses into chromosomes; nuclear membrane breaks down
Metaphase	chromosomes align in the middle of the cell
Anaphase	spindle fibers pull chromosomes apart
Telophase	Nuclei form at opposite sides of the cell
Cytoki-nesis	splitting of the cytoplasm

Cancer

Cancer Cells	divide uncontrollably
Causes	UV Radiation, Carcinogens, Inherited cancer gene, DNA damage or mutations

Mitosis Diagram

Why Mitosis?

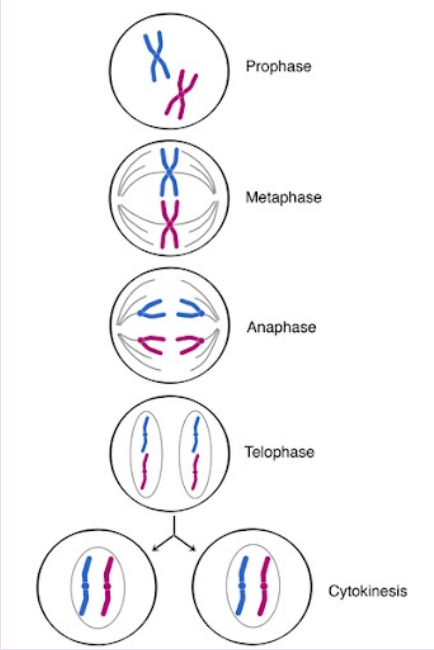
Growth and Development
Repair and Regeneration
Asexual Reproduction

Steps of Cell Cycle

G1 Phase	Growth Phase 1, Cells grow and perform normal cell function
S Phase	DNA synthesis occurs, DNA is still uncondensed
G2 Phase	Growth Phase 2, Cell gets larger, cell gets ready for division by duplicating organelles
Cytokinesis	Division of the cytoplasm
G1 Checkpoint	Cell checks for nutrient availability
G2 Checkpoint	Checks for accurate DNA replication; if wrong may repair of cell death
Metaphase Checkpoint	cell checks that spindle fibers are correctly attached to sister chromatids

Basics of Mitosis

Who?	Almost all cells (Plants, Animals, Plants, Fungi, Bacteria, Protists)
What?	One diploid cell splits to form 2 genetically identical diploid cells
Where?	Somatic cells
When?	Continuously, although some cells only divide during development
Why?	Growth and development, repair and regeneration, asexual reproduction
How?	Prophase, Metaphase, Anaphase, Telophase



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Not published yet.
Last updated 23rd April, 2024.
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