Cell Division and Cytogenetics

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Reagents:

* Microscope
* Prepared slide of an onion root tip
* Case study board with chromosome images
* Laboratory Manual

Experiment Summary

The objective of this experiment is to observe the stages of mitosis in onion root tip cells and to analyze human chromosomes through karyotyping. Using a microscope, we will examine actively dividing cells and identify different phases of mitosis, such as prophase, metaphase, anaphase, and telophase. By sketching and labeling these stages, we will gain a deeper understanding of the process of cell division.

In the second part of the experiment, we will construct a karyotype using a case study board. We will analyze and arrange chromosomes into homologous pairs to identify potential chromosomal abnormalities. This exercise will demonstrate the importance of cytogenetics in diagnosing genetic disorders and understanding chromosomal structures.