

## Cell Biology Laboratory

### Observing Stained Cells

#### Introduction:

Cell cells are the structural and functional cells of all living organisms. Due to the transparency of most cells and their components, viewing under a microscope is limited without the use of special techniques.

Cell stains have become important in our understanding of many optical elements, allowing us to study the internal structure of the cell and understand its vital functions.

#### The Importance of Cell Staining in the Life Sciences:

Cell staining contributes to:

- Chemical removal during disinfection
- Cell organelle identification
- Isolation studies
- Cell classification based on structure and function
- Supporting biochemical studies

## **The Clear Fact of Cell Staining:**

The staining process relies on the interaction between the stain and the plant components, where:

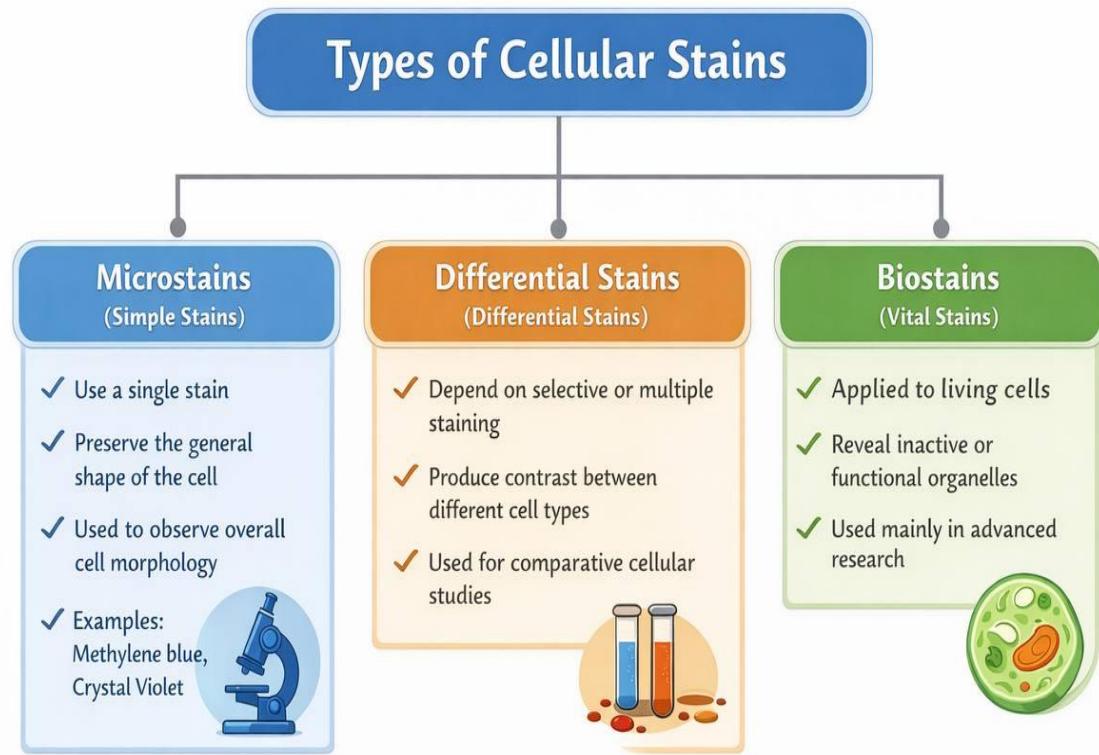
- Stains carry electrical charges
- Basic stains bind to components such as DNA and RNA
- Acidic stains bind to components such as the cytoplasm

**NOTE:** This element is fundamental to understanding the clear structure of the cell.

## **Effect of Staining on Biological Components:**

- Advanced technology is developed due to its technological component
- The cytoplasm appears lighter
- The cell wall can be distinguished in plant cells
- The degree of staining varies depending on the apparent structure of the cell.

## Types of Cellular Stains:



## The Microscope and the Staining Device:

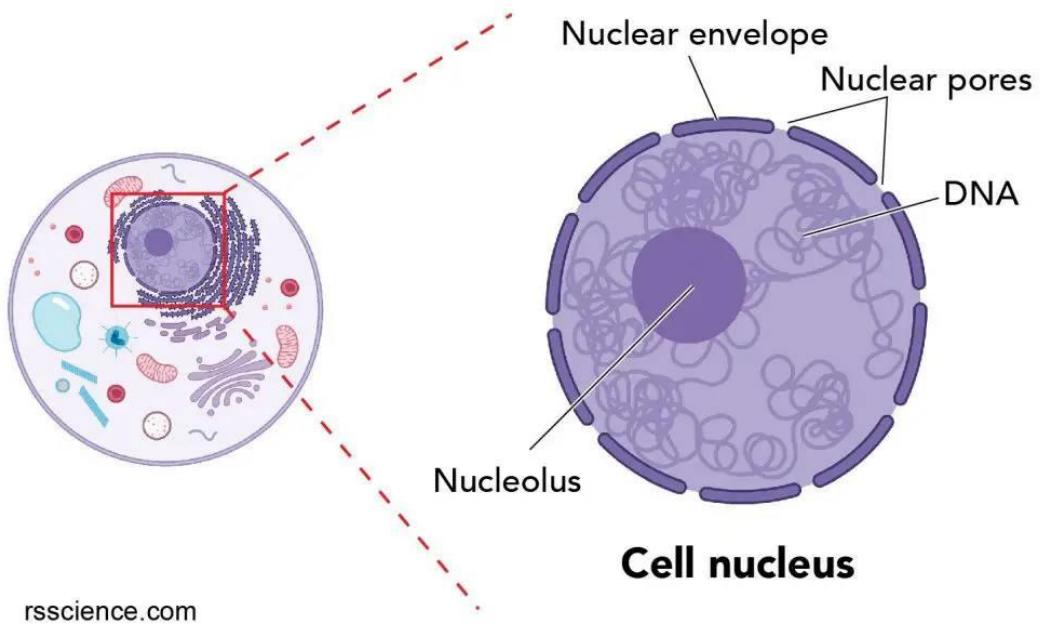
The basic light microscope is used to observe stained cells, where:

- It relies on light refraction
- It provides a wide range of staining capabilities
- It improves the differentiation between organisms Cellular.

## Scientific Applications of Cell Staining:

To enable spore-forming cells to:

- Academic studies in agricultural sciences
- Diagnosis of certain diseases
- Biochemical research
- Mandatory study under various conditions.



**Figure1: The cell nucleus diagram and its structure.**