CHAPTER 7
TOUR OF THE CELL

Figure 7.0  Fluorescent stain of cell

Figure 7.1  The size range of cells
Table 7.1 Different Types of Light Microscopy: A Comparison

<table>
<thead>
<tr>
<th>Type of Microscopy</th>
<th>Type of Light Microscope</th>
<th>Monochromatic Light</th>
<th>Polychromatic Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brightfield</td>
<td>Brightfield Microscope</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Darkfield</td>
<td>Darkfield Microscope</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Phase contrast</td>
<td>Phase Contrast Microscope</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Total internal reflection</td>
<td>Total Internal Reflection Microscope</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Figure 7.2 Electron micrographs

Figure 7.3 Cell fractionation

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PROKARYOTIC CELLS

- KINGDOM MONERA/BACTERIA
- NO ORGANIZED NUCLEUS
- DNA/SINGLE STRANDED
- NO MAJOR ORGANELLES
- NO DOUBLE MEMBRANE
- SPECIALIZED DNA/PLASMIDS
- CAPSULE, CARBOHYDRATE

BACTERIA

- CYANOBACTERIA/BLUE GREEN
- MYCOPLASMA/small bacteria
- HELPFUL, HARMLESS, PATHOGENIC
- METHANOBACTERIA/ANCIENT
- ANEROBIC - OXYGEN, AEROBIC +O2
- PLASMIDS/SPECIAL STRANDS OF DNA, USED IN BIOGENETIC EXPTS.

Figure 7.4  A prokaryotic cell
Figure 7.4a: Bacillus polymyxa

Figure 7.4b: E. coli

Figure 7.6: The plasma membrane
EUKARYOTIC CELL

- ORGANIZED NUCLEUS
- DNA/DUOUBLE STRANDED
- ORGANELLES DEFINED
- DOUBLE CELL MEMBRANE/DUOUBLE MEMBRANE AROUND ORGANELLES
- DOMAIN EUKARYA: KINGDOMS/ PROTISTA, FUNGI, PLANTAE AND ANIMALIA

Figure 7.7  Overview of an animal cell

Figure 7.8  Overview of a plant cell
Figure 7.9  The nucleus and its envelope