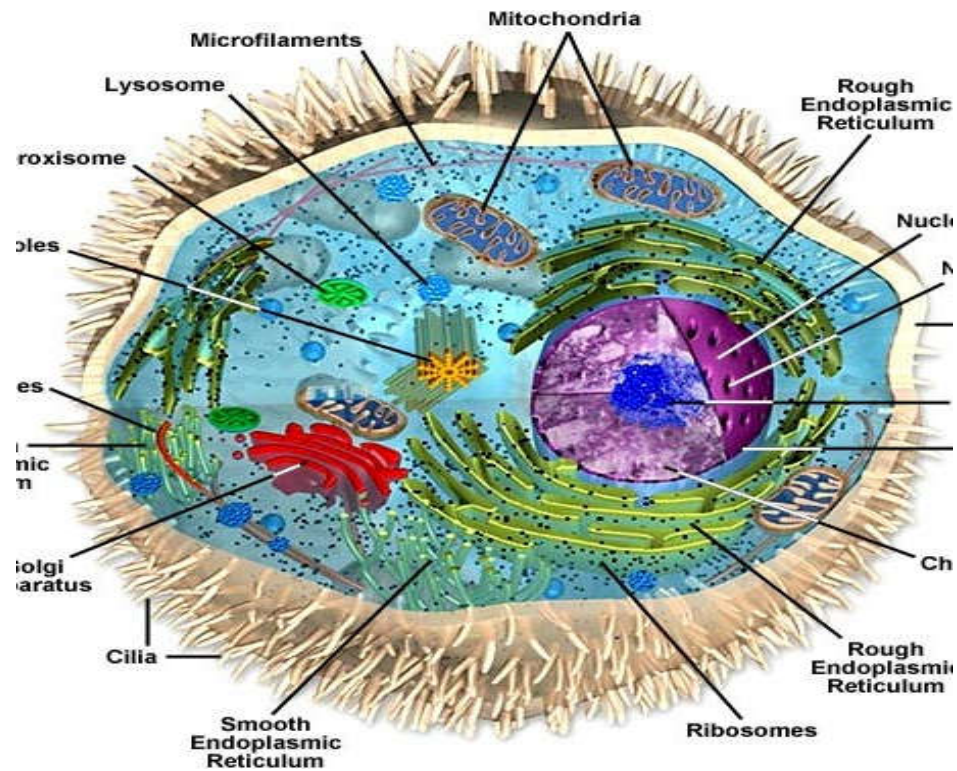


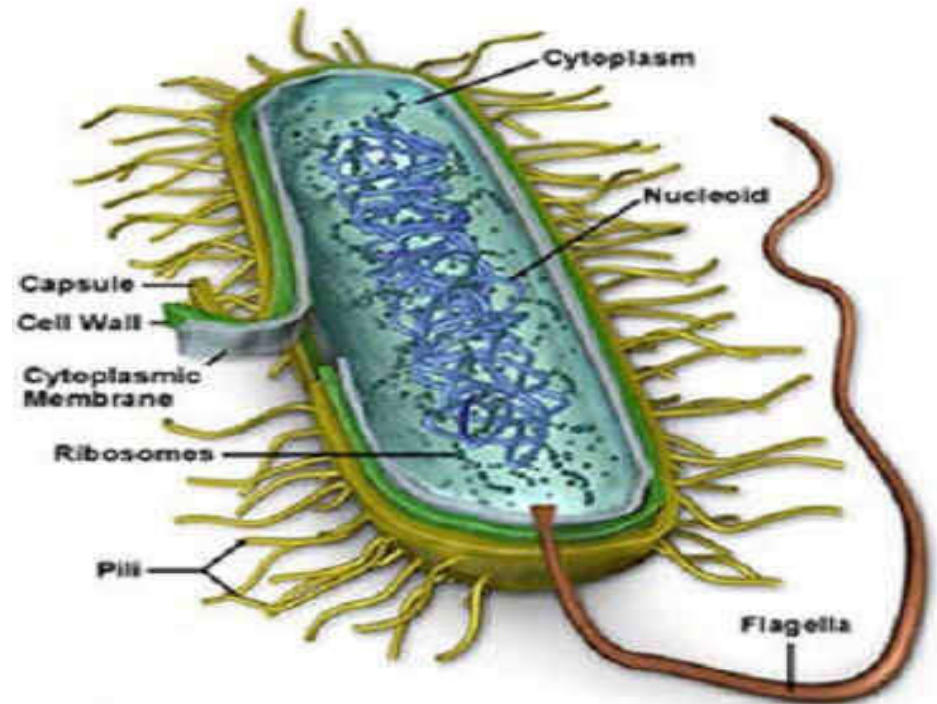
KİM 425
KİMYACILAR İÇİN HÜCREBİLİM

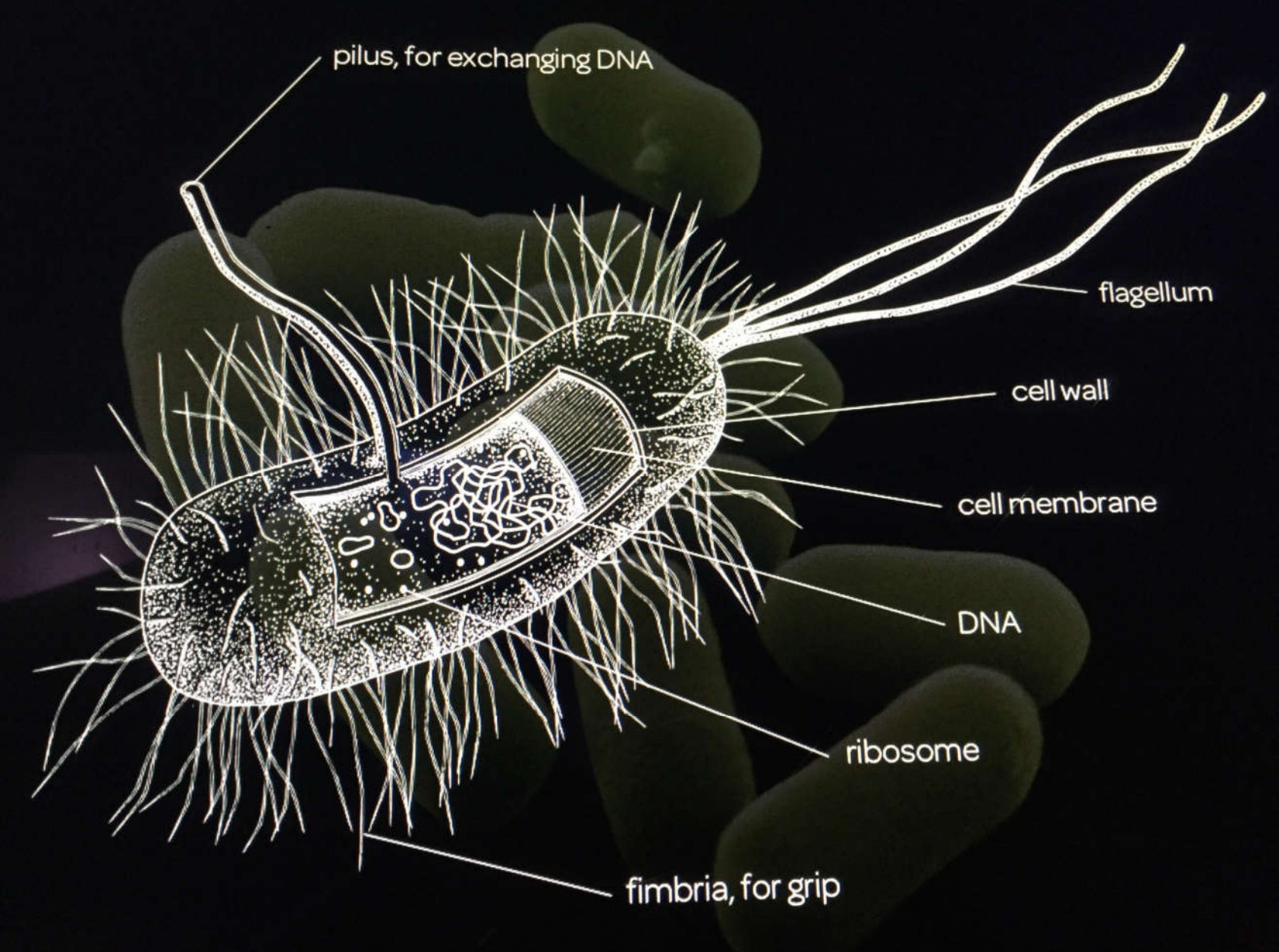
DERS I-II-III

Eukaryote



Prokaryote





pilus, for exchanging DNA

flagellum

cell wall

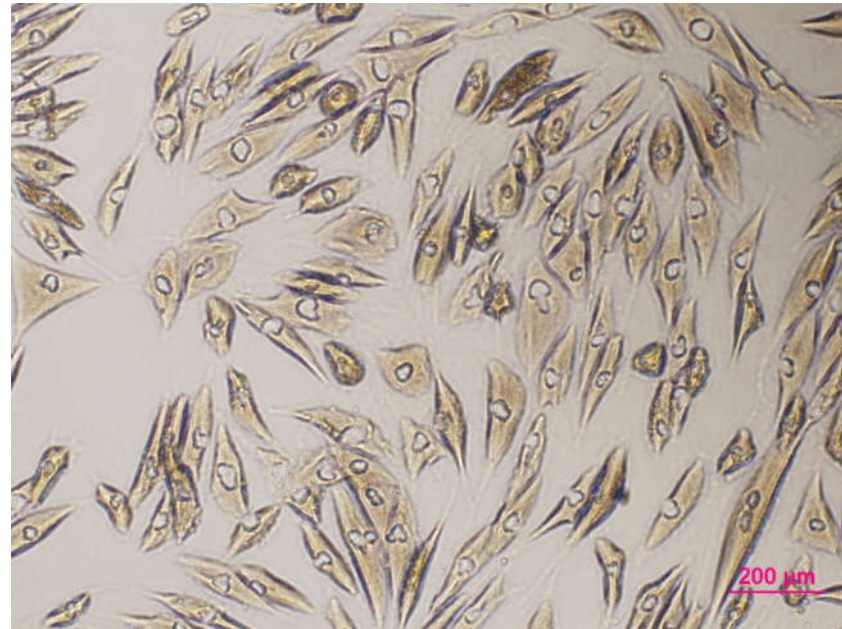
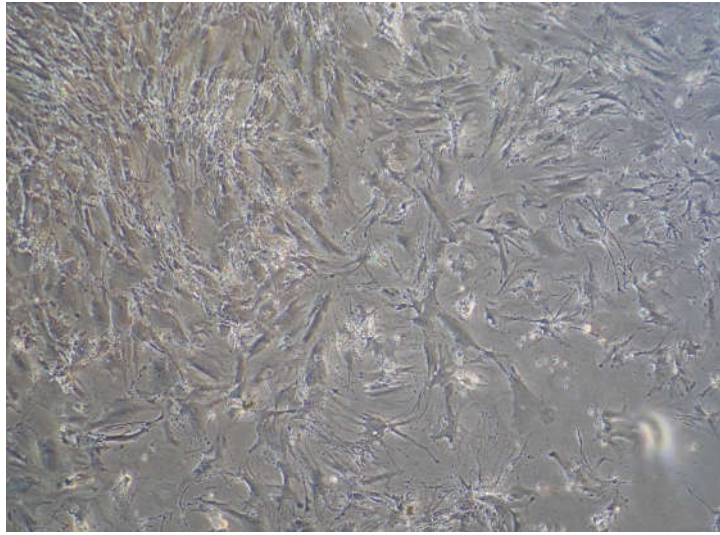
cell membrane

DNA

ribosome

fimbria, for grip





All living things are composed of cells

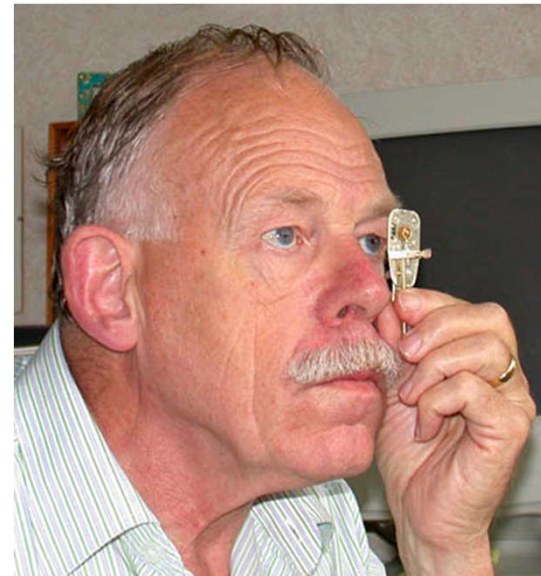
- Prokaryote – a cell without organelles
- Eukaryote – cell with defined organelles
- Unicellular - composed of one cell
- Multicellular - composed of more than one cell.

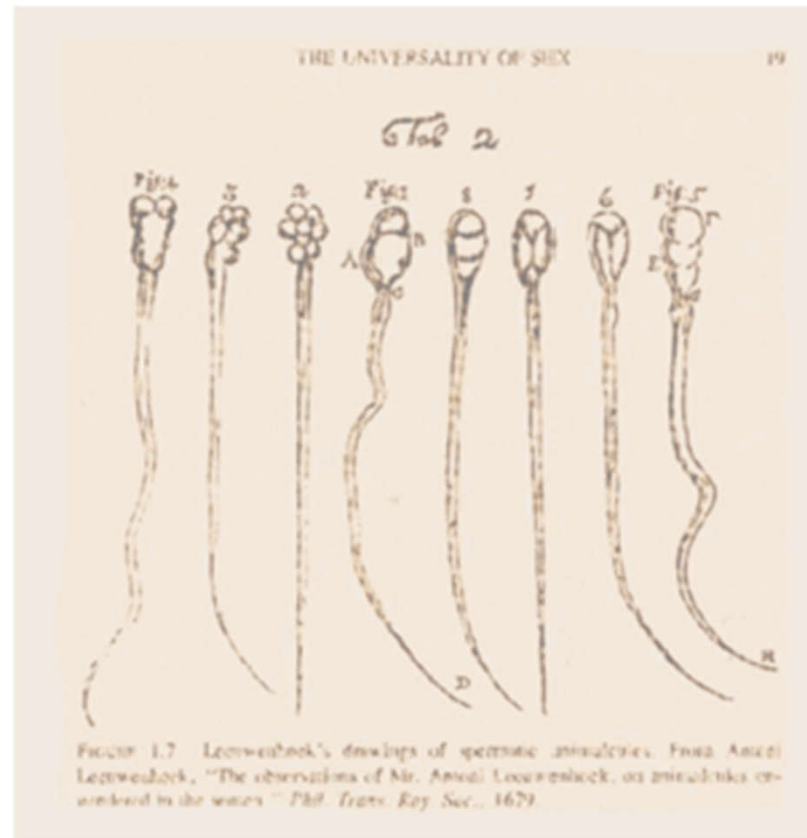


**Antonie van Leeuwenhoek
(1632-1723)**

Founding Fathers of Cytology

- Leeuwenhoek- (1600's) made the first simple microscope. Magnifying glass. First to see bacteria, protozoa.



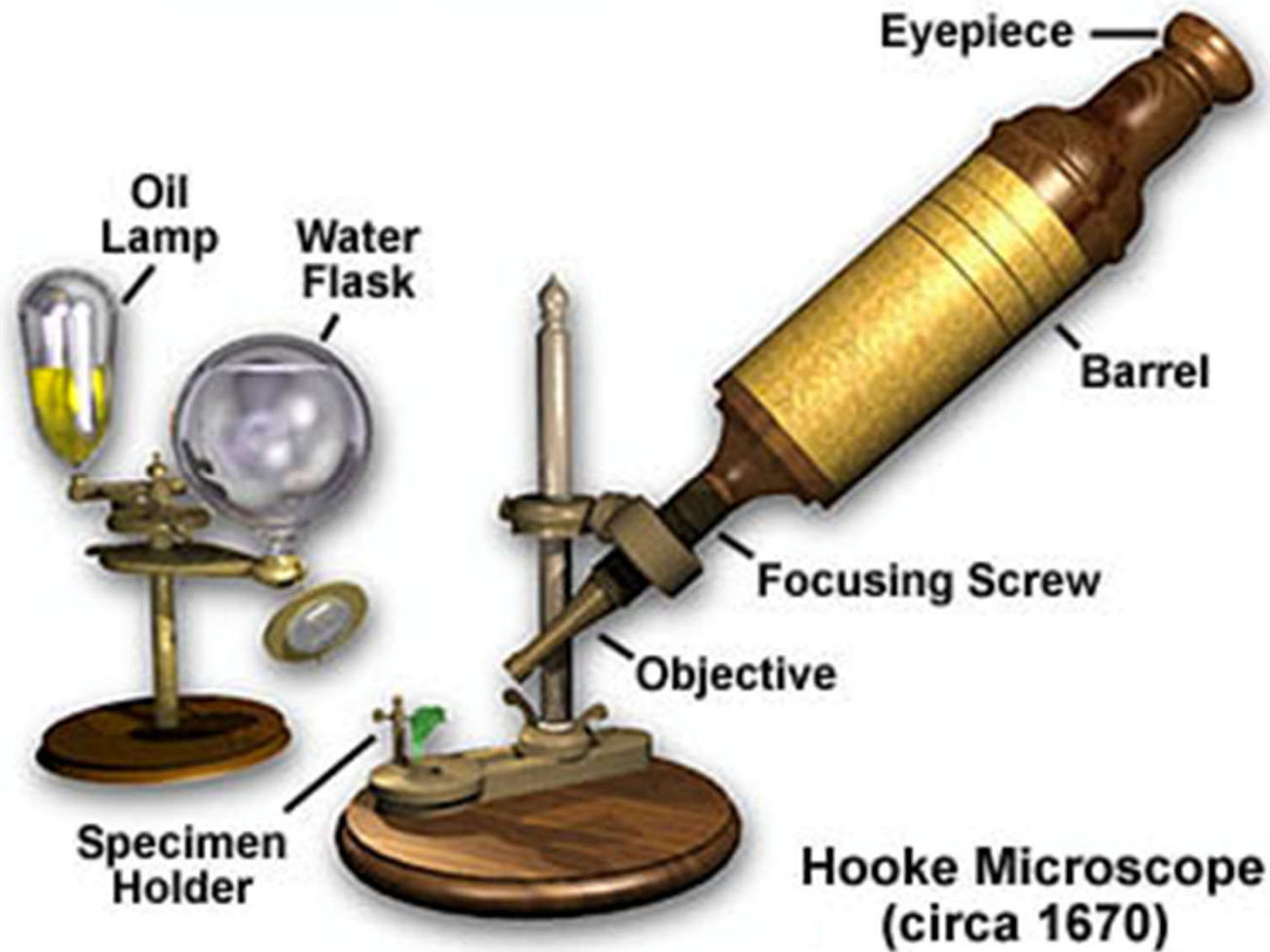


Spermatozoa by Anton Van Leeuwenhoek published in Philosophical Transactions, 1678.



Robert Hooke
(1635-1703)

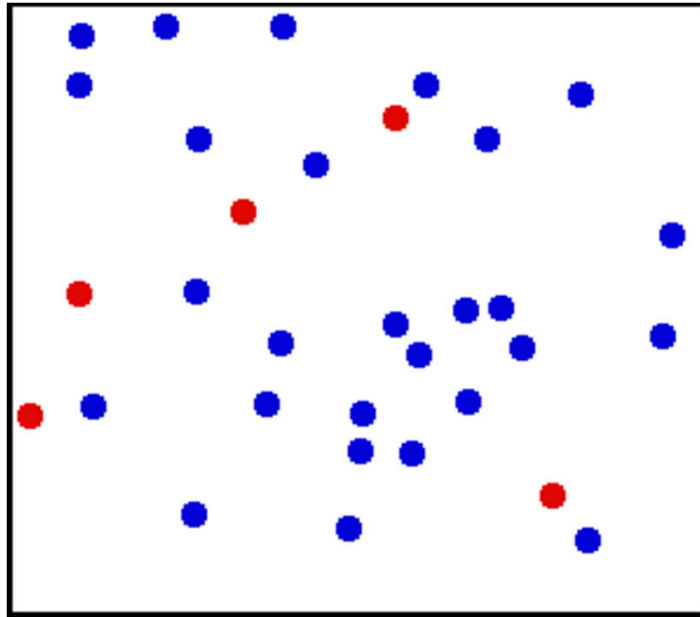
- Hooke- 1655 made compound microscope with two lenses. First to see “cell” in slices of cork.





-- Robert Brown --

Brown- 1831 concluded that all plant cells contain a nucleus.





- Schleiden 1838- German botanist who concluded that “all plants are made of cells”.
- Schwann 1839- German zoologist who concluded that “all animals are made of cells”.
- Virchow 1855 concluded that “all cells arise from preexisting cells”.

THE CELL THEORY

- 1. All living things are made of cells. (basic structure).
(Bütün canlılar hücrelerden meydana gelir)
- 2. All cells carry out life functions. (basic function)
(Hücrelerin canlılarda belirli bir işlevi vardır)
- 3. All cells come from pre-existing cells.
(Tüm hücreler kendinden önceki hücrelerden köken alır)

EXCEPTIONS to the CELL THEORY

1. Where did the first cell come from?
2. VIRUSES? Can reproduce inside a host but outside it shows no sign of life.
3. Mitochondria and chloroplasts contain genetic material and can reproduce.

How many cells are in the Human Body

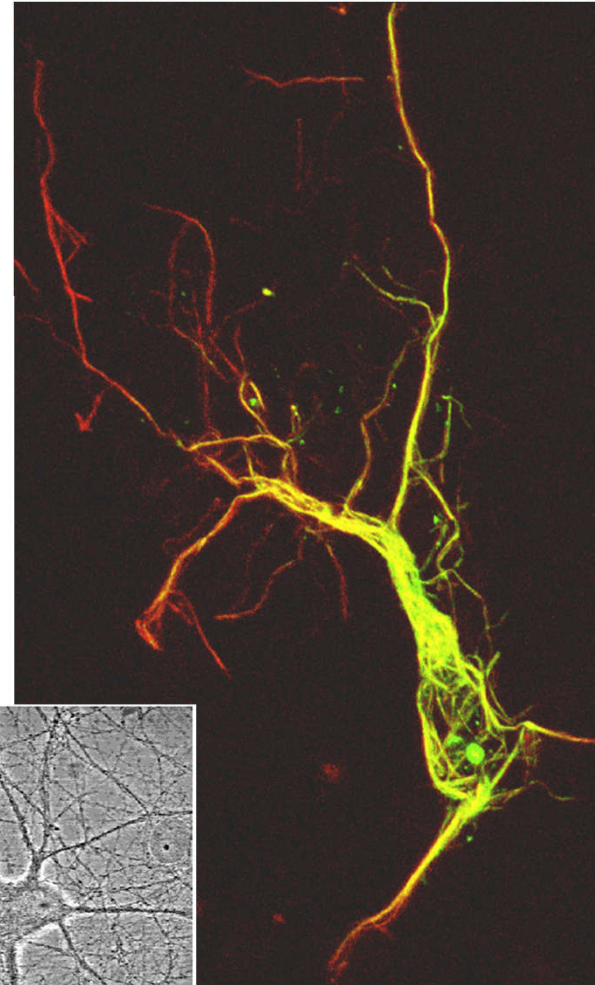
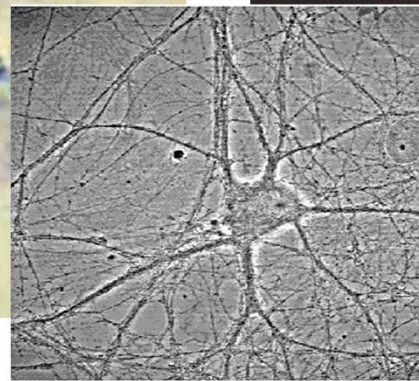
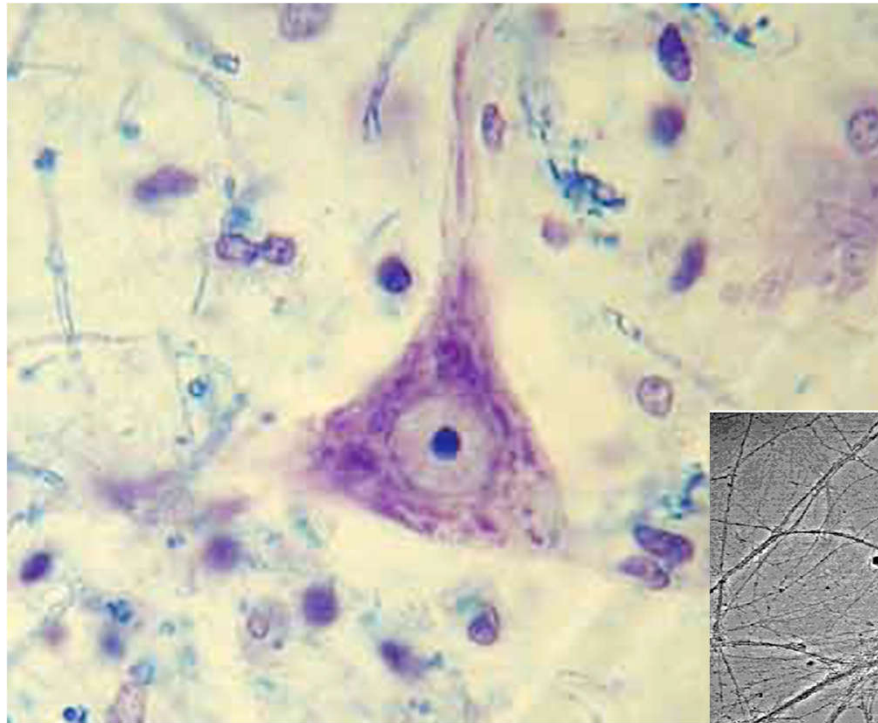
- Approximately 65 trillion cells make up the adult human body



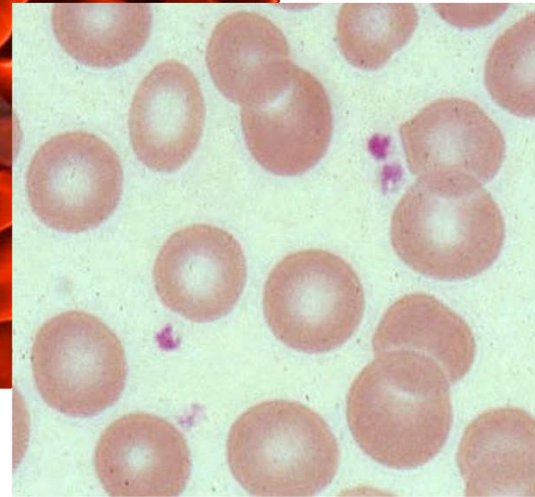
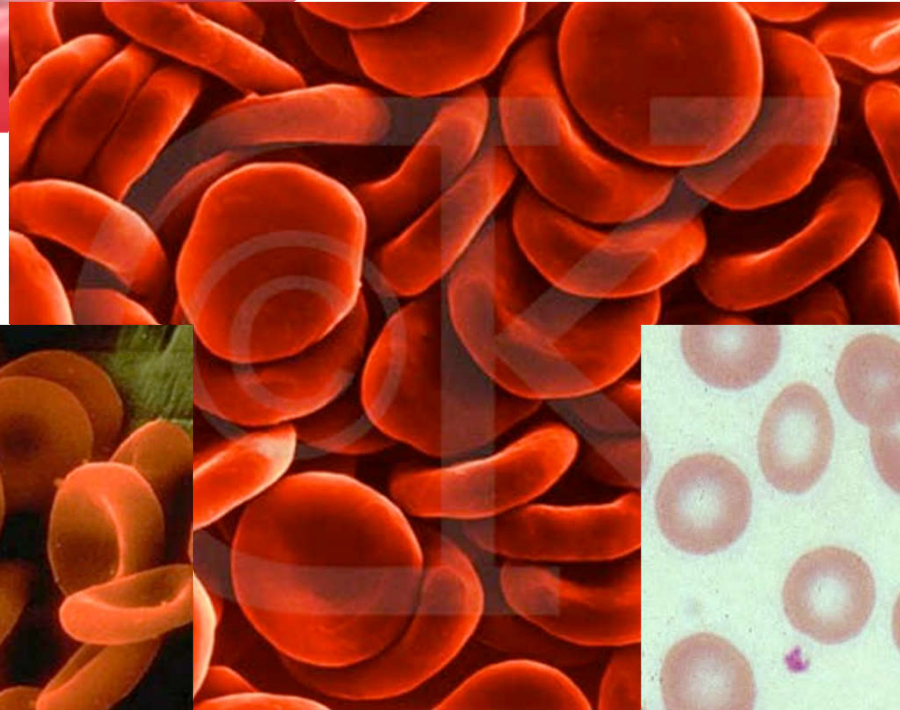
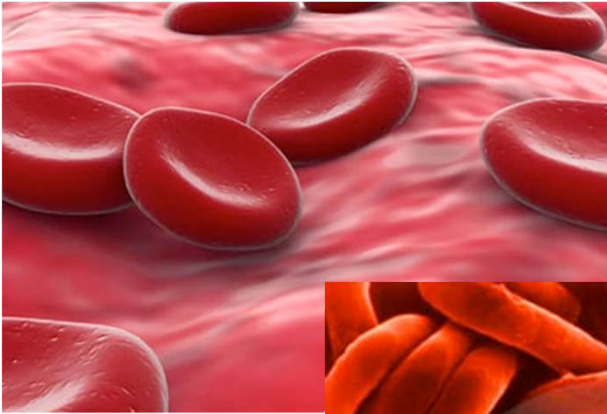
Levels of organization

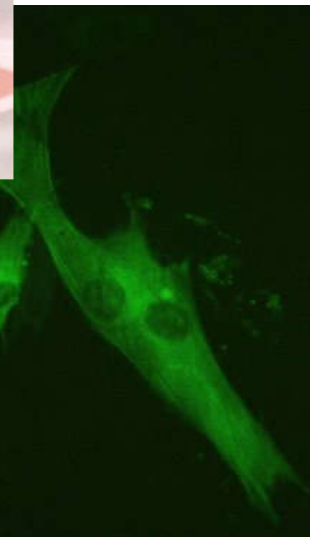
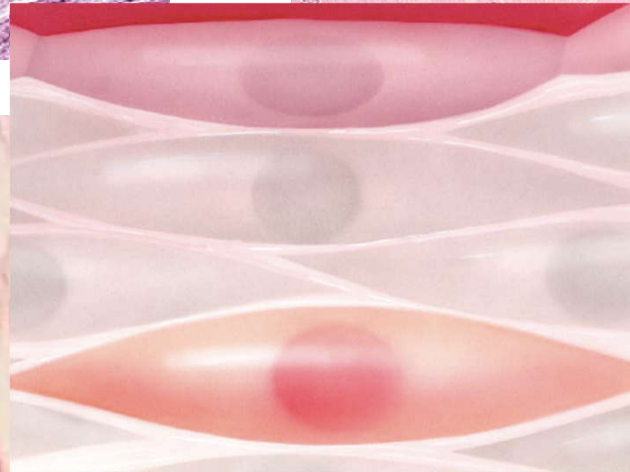
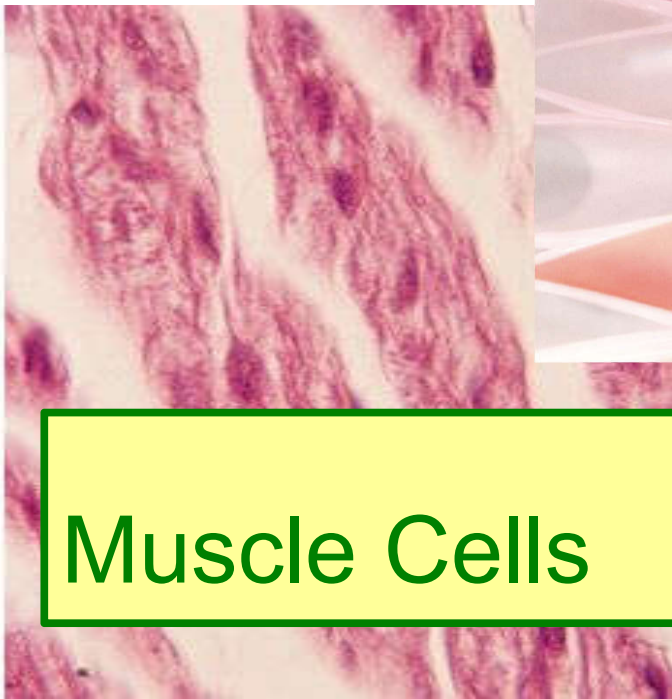
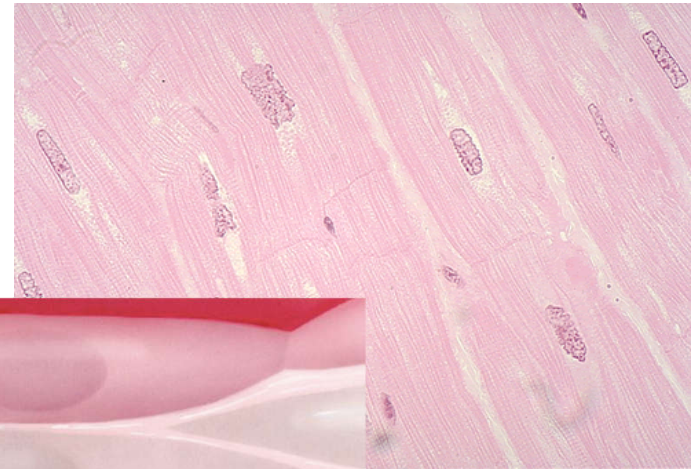
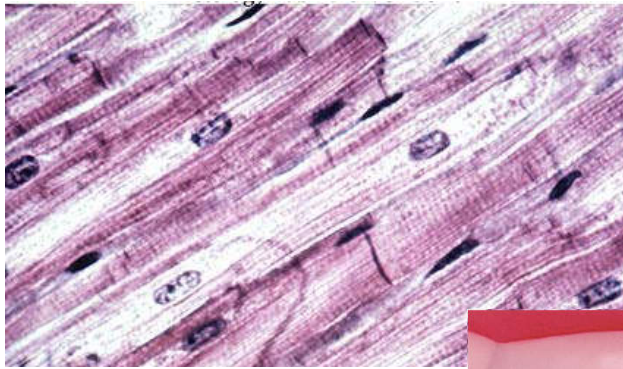
- Cell- basic unit of life.
- Tissue- group of cells performing the same function. Lung tissue
- Organs- group of tissues performing the same function. Lung, heart
- Organ system- group of organs that perform the same function.ex. Respiratory system
- Organism- group of organ systems working together.

The Nerve Cell



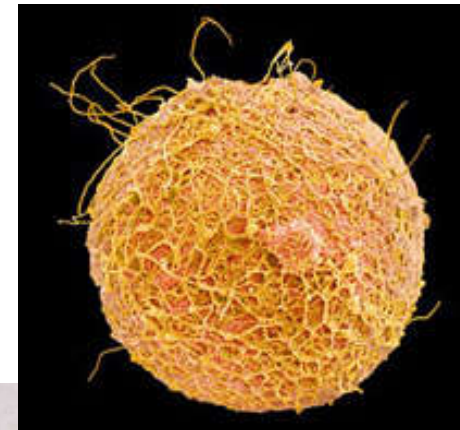
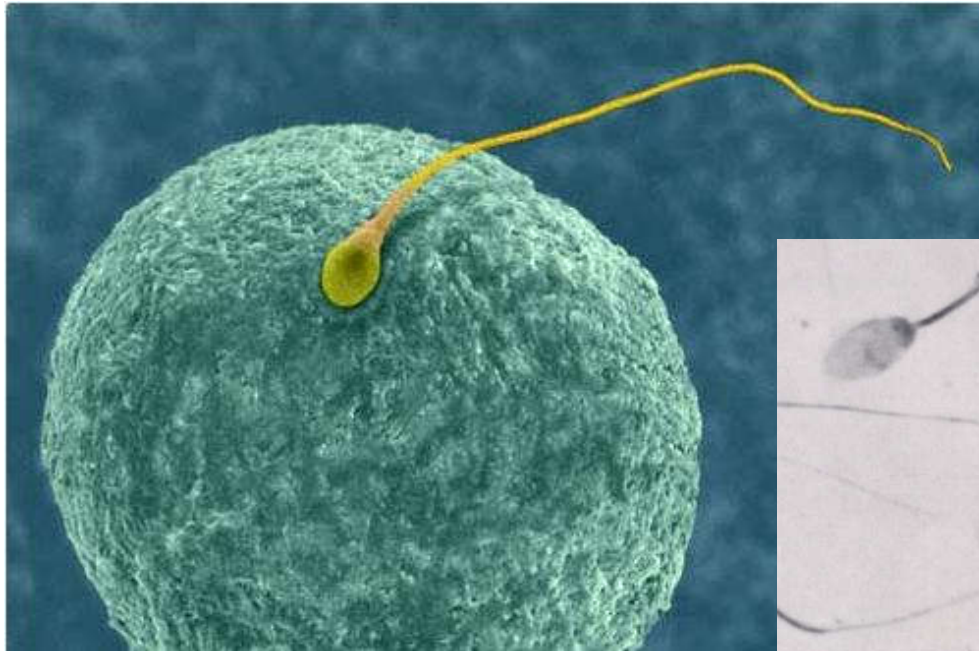
Red Blood Cells





Muscle Cells

Egg and Sperm Cells



Konunun Özeti

Hücreler gelişmişlik özelliklerine göre prokaryot hücreler ve ökaryot hücreler olmak üzere 2'ye ayrılır.

Hücre biliminin tarihsel süreci 15. Yüzyılda Leeuwenhoek'un ilk basit mikroskobu bulması ile başlar ve sonraki yüzyıllarda diğer birçok araştırmacının çalışmaları ile devam eder.

Hücre teorisi temelde 3 kavram üzerinde odaklanır.

- o Bütün canlılar hücrelerden meydana gelir.
- o Tüm hücreler kendinden önceki hücrelerden köken alır.
- o Tüm hücreler kendinden önceki hücrelerden köken alır.