

Organelles, Structure and Function Relationships

LO:

- Describe the role for named subcellular organelles in creating specialised microenvironments;
- Explain the differences between prokaryotic vs. eukaryotic cells

These notes will cover the following:

1. The Cell Surface
2. Nucleus & Nucleolus
3. Mitochondria
4. Synthetic Organelles
5. Digestive Organelles
6. Prokaryotes vs Eukaryotes
7. Variations on a Theme

1. The cell surface

Membranes

- All cells are surrounded by a plasma membrane
- The plasma membrane is a SINGLE membrane e.g. phospholipid bilayer and remember that this is ONE single membrane
- Plasma membrane is partially permeable
- The intracellular fluid is separated by the extracellular fluid by the plasma membrane

If the plasma membrane was not partially permeable it would rupture and die as it won't be able to exchange materials for its survival.

The plasma membrane is a complex structure that consists of:

- Lipids (amphipathic)
- Proteins
- Carbohydrates ($C_nH_{2n}O_n$)
- Glycolipids- lipid with sugar attached
- Glycoproteins- protein with sugar attached
- Peptidoglycans
- Glycosaminoglycan- repeated chain of disaccharide (don't need to know much about)

Why is the plasma membrane partially permeable?

- Because the lipids are amphipathic!