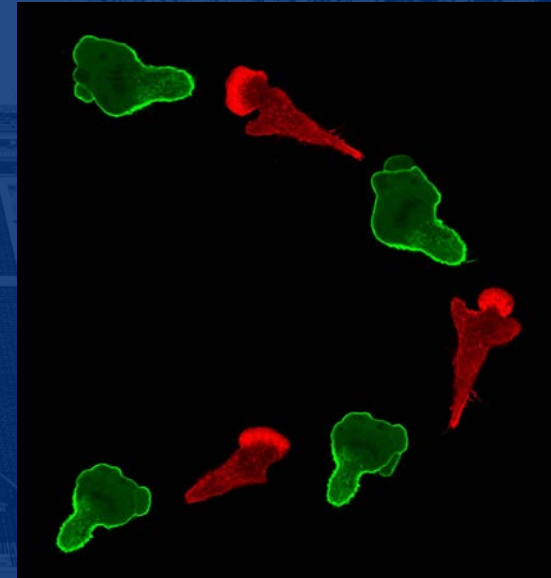




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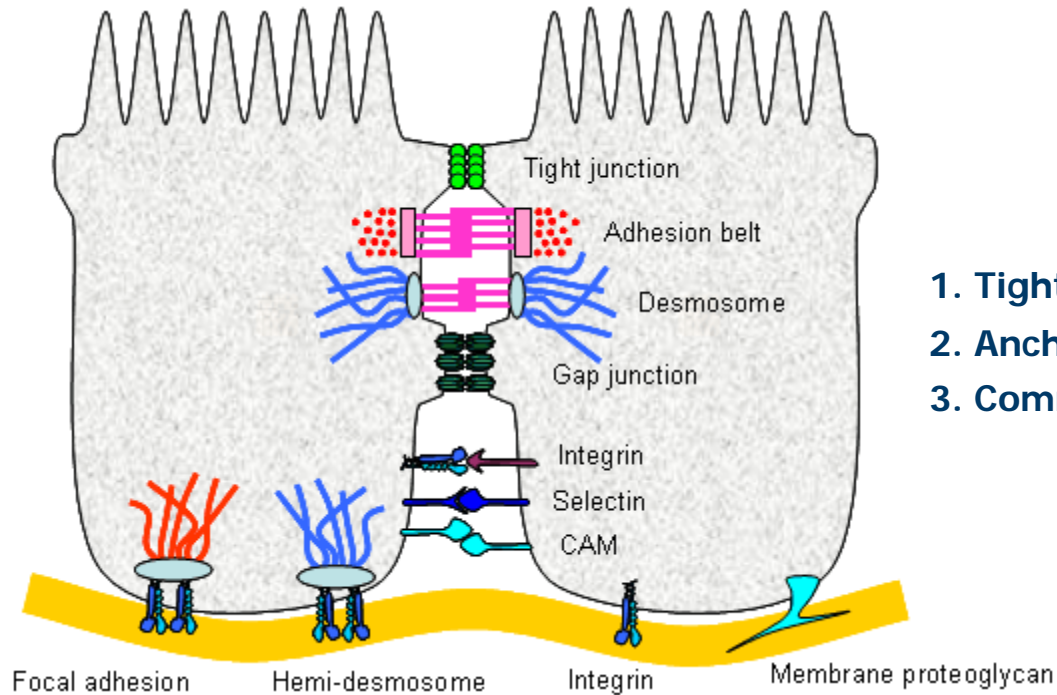
Cell and Tissue Engineering

Cell Adhesion, Part 2



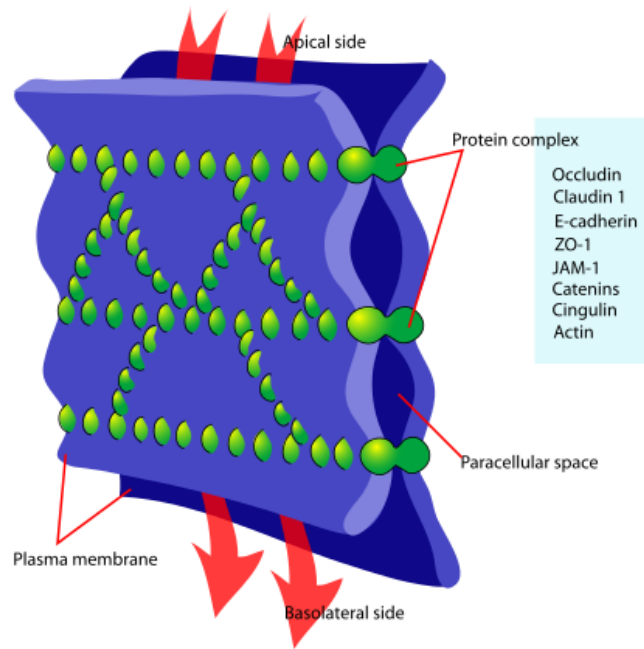
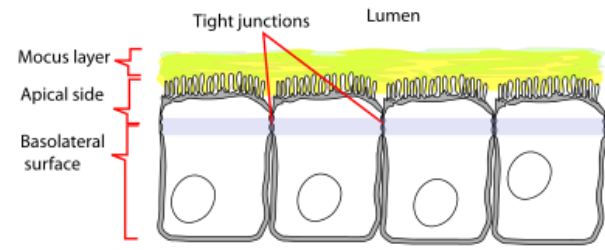
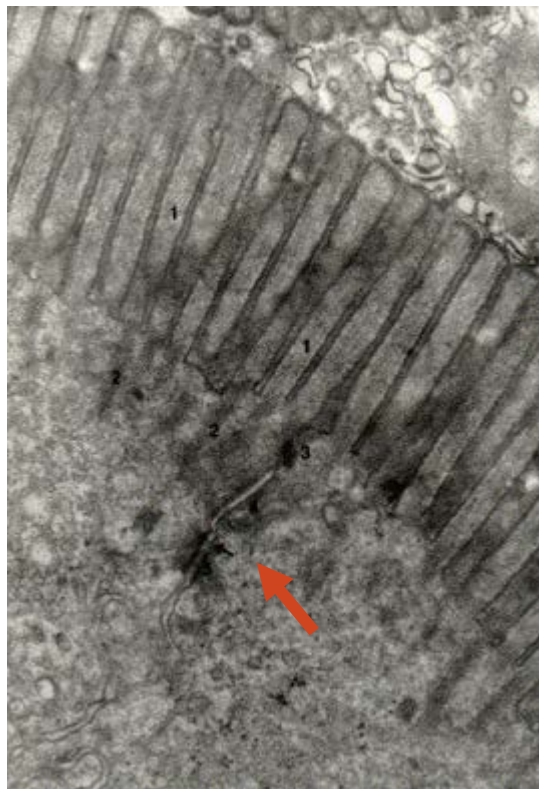
Martin Bergert,
Max Planck Institute for Molecular Cell Biology and Genetics

Three types of functionally different cell adhesions



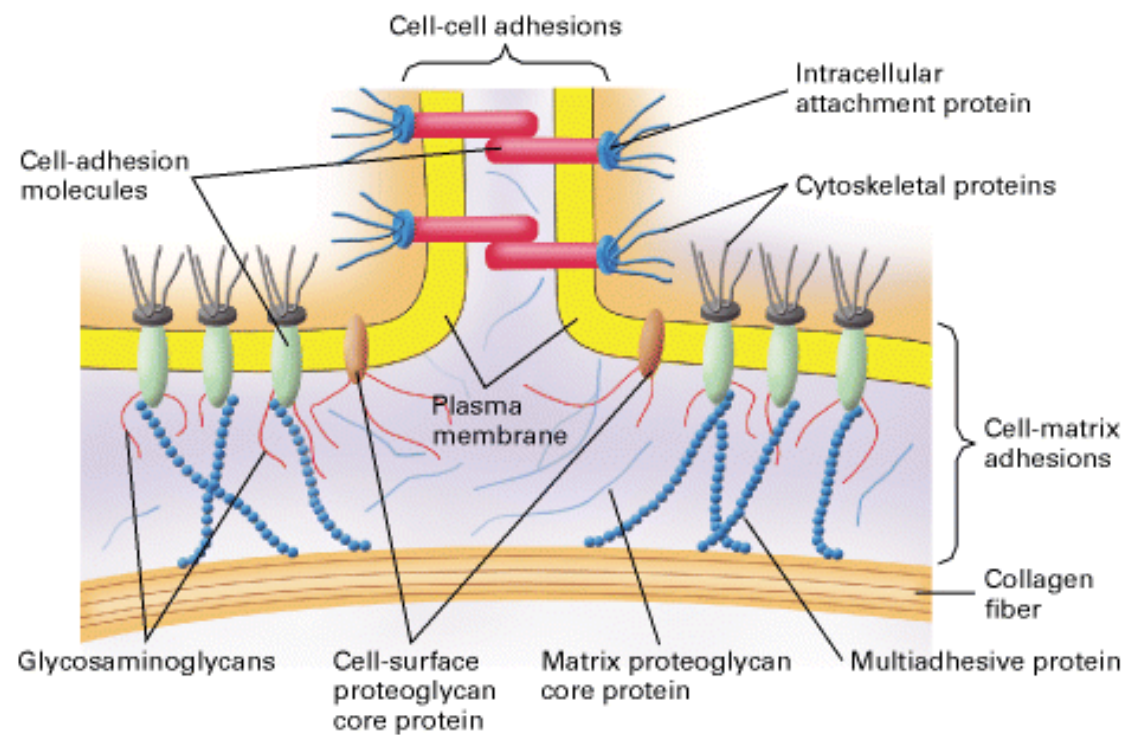
1. Tight Junctions
2. Anchoring Junctions
3. Communicating Junctions

1. Tight junctions form barriers



2. Anchoring junctions are mechanical links

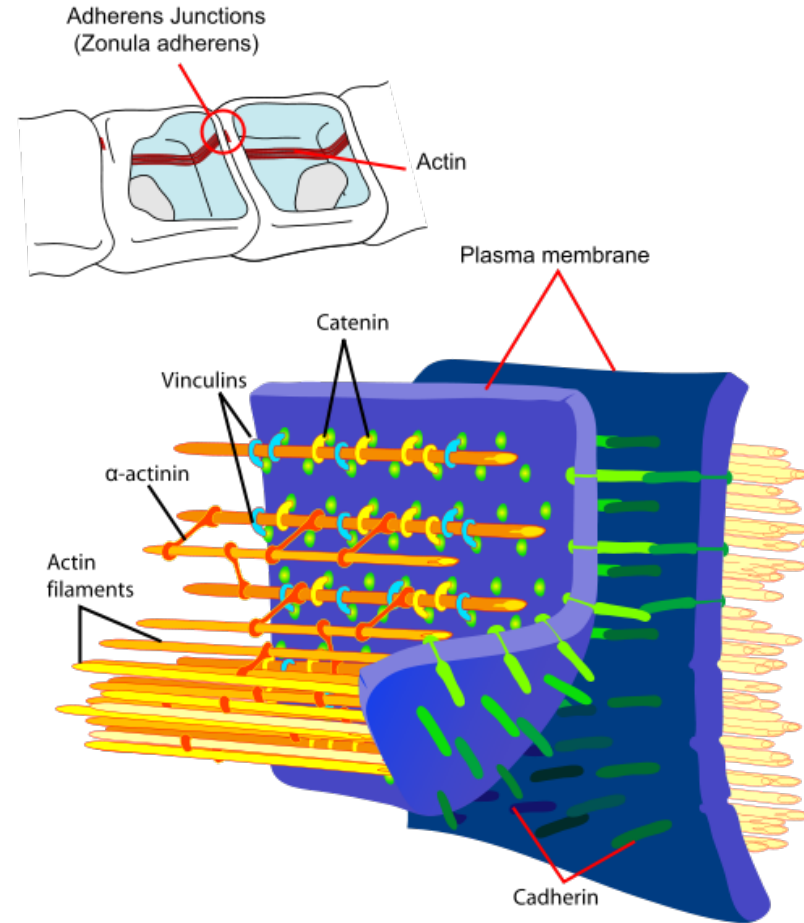
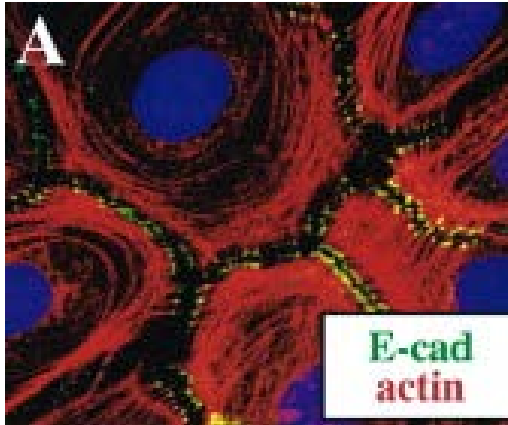
Cell-cell AND cell-matrix adhesions



2. Anchoring junctions are mechanical links

Types of anchoring junctions

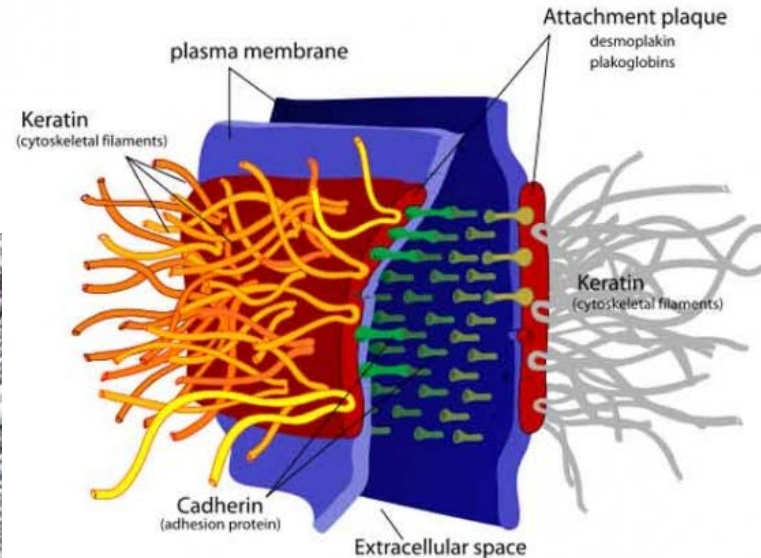
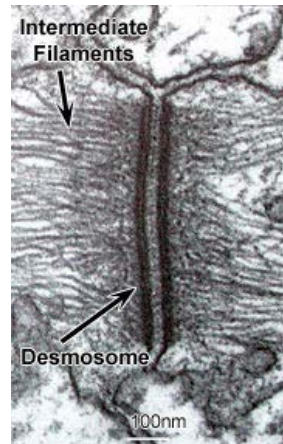
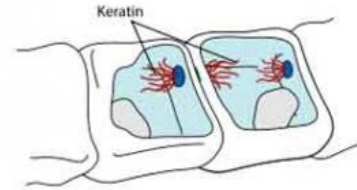
- **Adherens Junction**
- Desmosome
- Hemidesmosome
- Focal contact



2. Anchoring junctions are mechanical links

Types of anchoring junctions

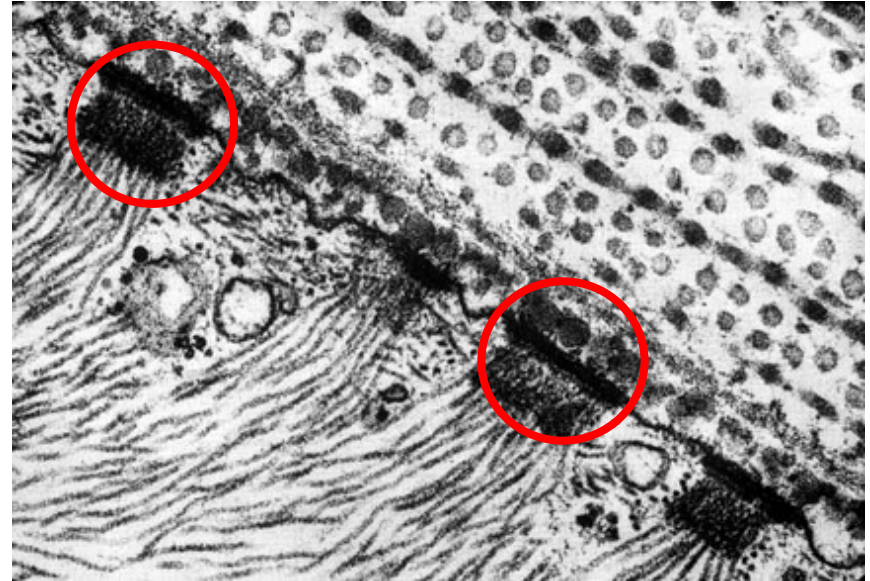
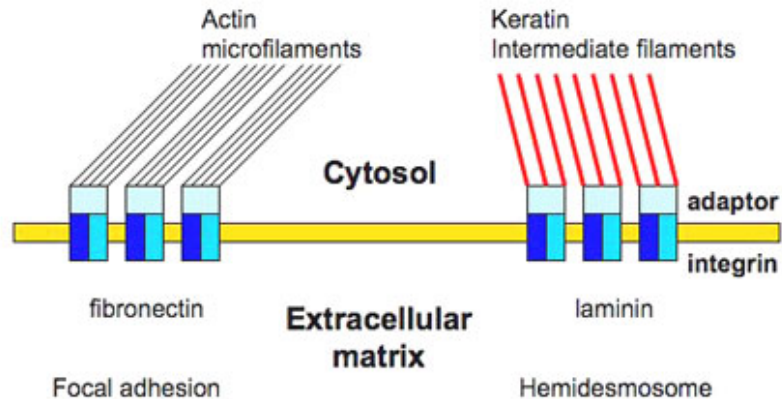
- Adherens Junction
- **Desmosome**
- Hemidesmosome
- Focal contact



2. Anchoring junctions are mechanical links

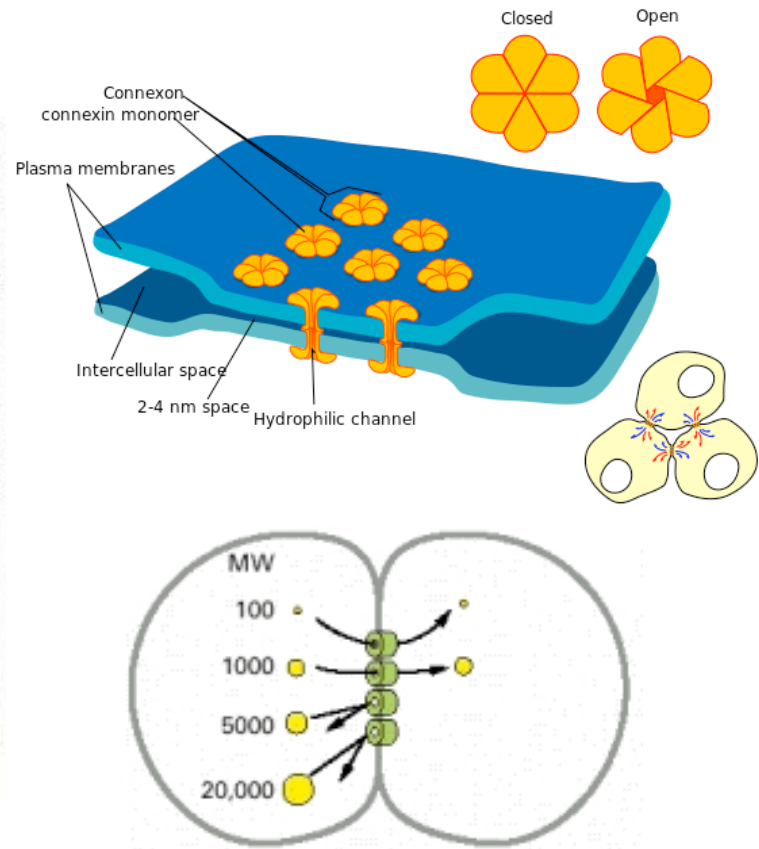
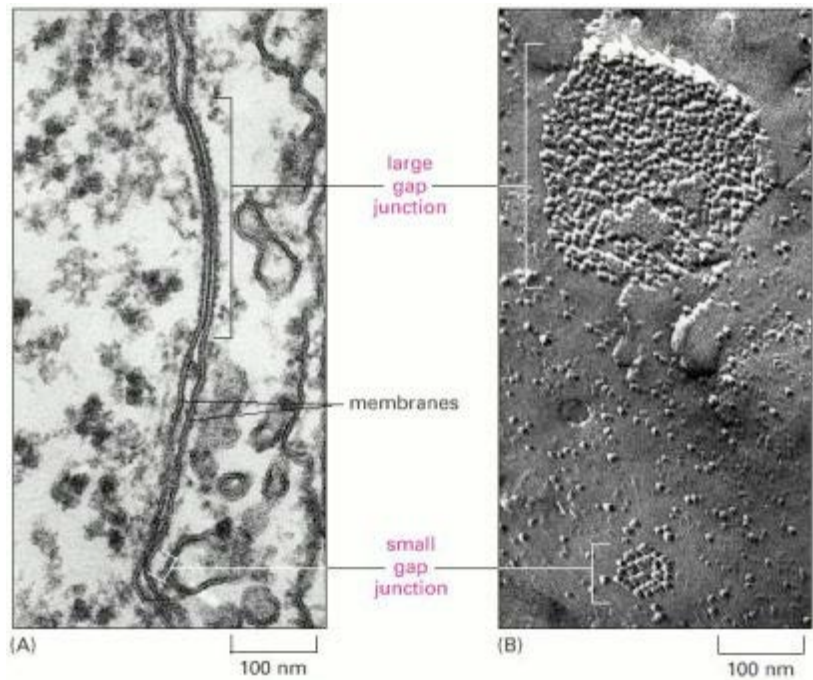
Types of anchoring junctions

- Adherens Junction
- Desmosome
- Hemidesmosome
- Focal contact



3. Communicating junctions regulate passage of chemical/electrical signals between cells

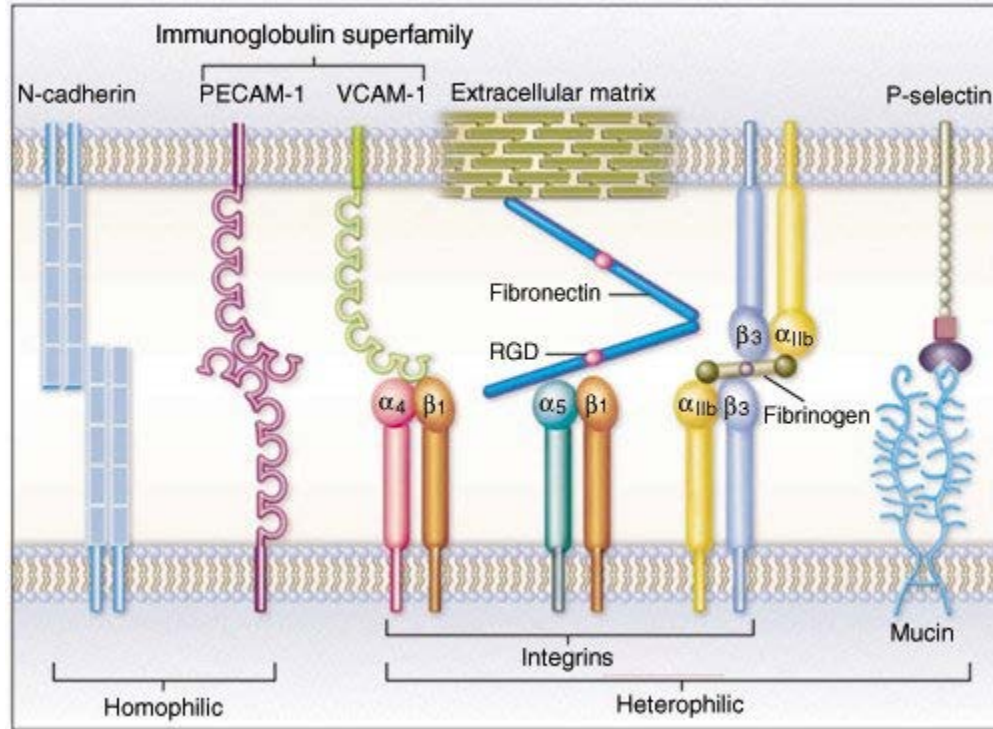
Gap Junctions



Cell-Adhesion Receptors

Four Major Families

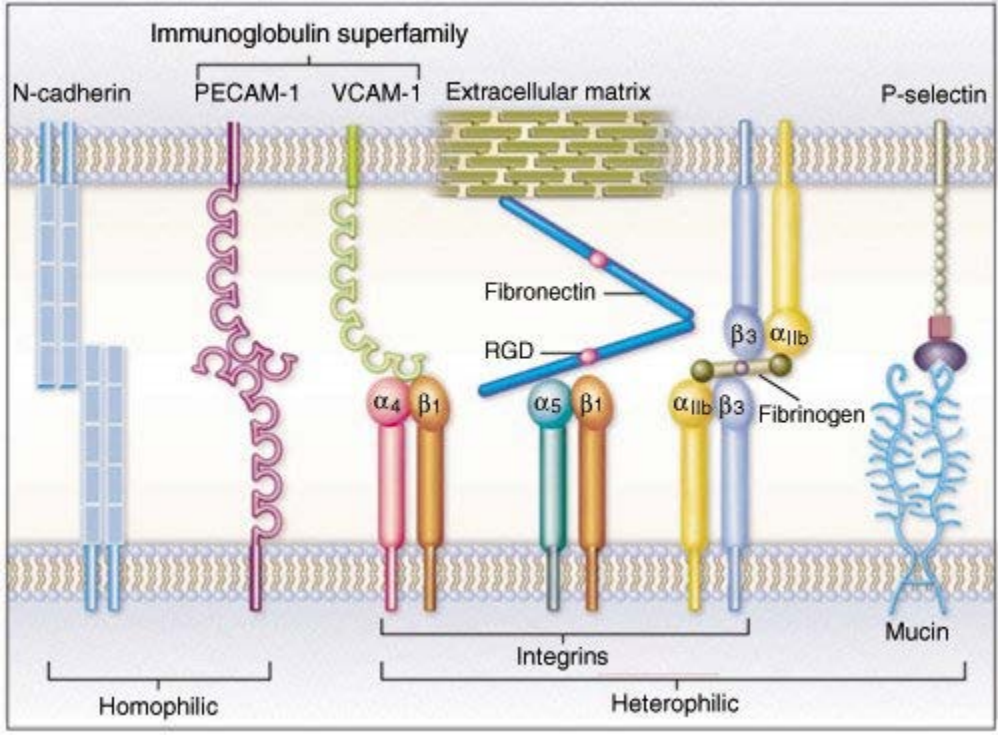
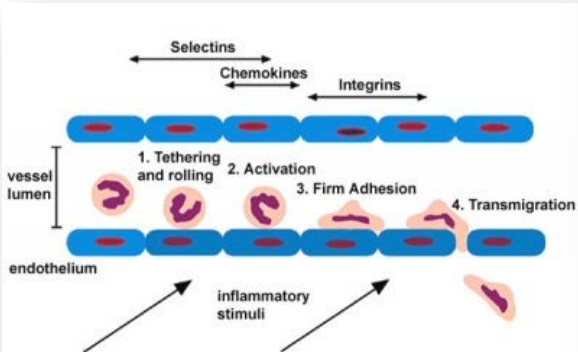
1. Integrin
2. Cadherin
3. Ig-like CAM
4. Selectin



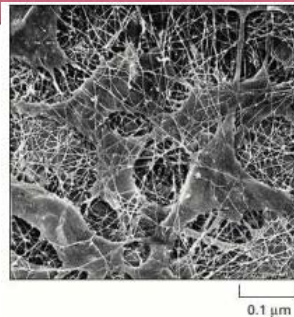
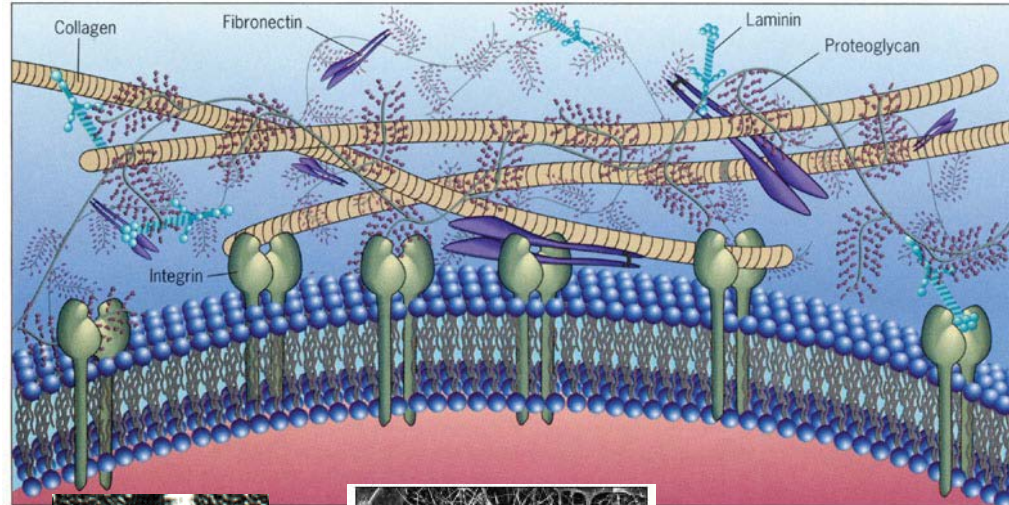
Cell-Adhesion Receptors

Four Major Families

- 1. Integrin
- 2. Cadherin
- 3. Ig-like CAM
- 4. Selectin



Extracellular matrix components

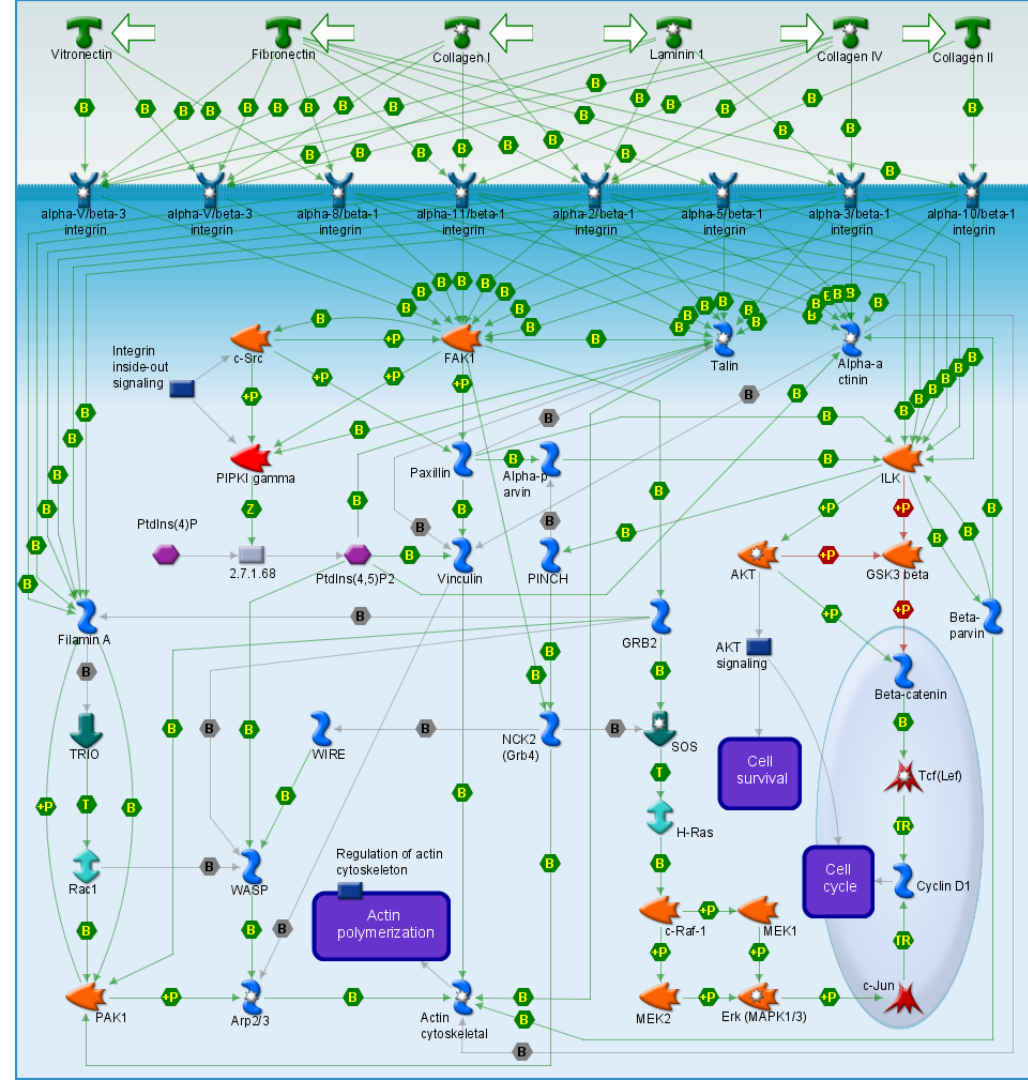


Collagen
Fibronectin
Laminin
Elastin
Tenascin
Thrombospondin

Glycoaminoglycans
Proteoglycans

Cell Adhesions Signaling Role

Don't forget
that cell
adhesions
signal too!



Rewind and review

Types of adhesions

Tight Junctions

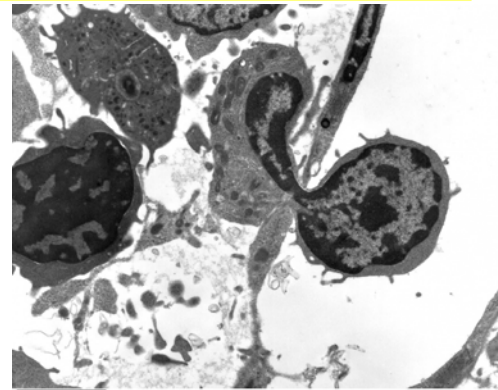
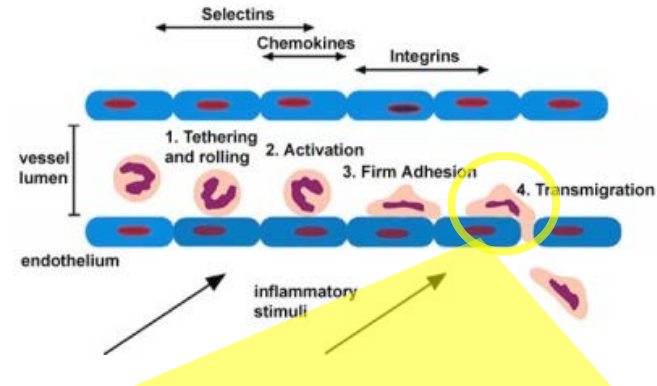
Anchoring Junctions

Communicating Junctions

Four Major Families of adhesion receptors

1. Integrin
2. Cadherin
3. Ig-like CAM
4. Selectin

Types of adhesion receptors





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