

Summaries for LEC-11 cytology

Adhesion protein family	Selectins	Integrins	Ig superfamily	Cadherins
Interaction with ligands :	Carbohydrates	ECM+ Members of Ig superfamily	Integrins+ Homophilic interactions	Homophilic interactions
Functions (as mentioned in slides) :	Interaction of leukocytes with the endothelial cells(through carbs) slows the leukocyte	Interaction of leukocytes with the endothelial cells(through ICAMs) stops he leukocyte	-	selective adhesion; between embryonic cells + neurons synapses+ stabilize junctions
Junctions involved :	-	1. Focal Adhesions 2. Hemidesmosomes	-	1. Adherensjunctions 2. desmosomes
Heterophilic /Homophilic and extra info :	Heterophilic	Heterophilic	Homophilic or Heterophilic	Homophilic 3 classic (major) types : E-cadherin N-cadherin: P-cadherin:

<i>Junction type</i>	<i>Focal Adhesions</i>	<i>Hemidesmosomes</i>	<i>Tight junctions</i>	<i>Adherens junctions</i>	<i>Desmosomes</i>	<i>gap junctions</i>
<i>Function</i>	anchor cells to the matrix (ECM) (like Hemidesmosomes)	Anchor cells to the basement membrane + enhancing cell adhesion	seal the space between cells (outside cells) + maintain polarity(inside the cell)	Link between the actin filaments of adjacent cells +strength	Link between the intermediate filaments of adjacent cells +strength	communication between cells , electrical synapse
<i>Proteins involved</i>	ECM→ actin filaments (through integrins)	ECM → intermediate filaments (through integrins)	Claudin	Cadherins→ actin filaments	Cadherins→ intermediate filaments	Connexons(made of 6 connexins)
<i>Location</i>	Basal surface	Basal surface	Apical surface	Below tight junction (usually)	Middle of the cell (more to the surface)	Middle of the cell
<i>Diseases associated</i>	-	-	Lack of Claudin → breast cancer (mesenchymal-like) → death	-	-	<ol style="list-style-type: none"> 1. Marie-Charcot-Tooth disease 2. Deafness 3. Skin disorders 4. Cataracts
<i>Extra info :</i>	-	-	block free passage of molecules between cells of epithelial sheets			ions , small molecules , signaling molecules→ pass <i>proteins and nucleic acids</i> → <u>don't pass</u>