

Review Questions  
**Lecture 16**

1. Could multicellular organisms exist without cell adhesion?
2. List the four classes of cell junctions and the function of each.
3. If a cell wanted to adhere to the ECM using intermediate filaments what type of cell junction should it use?
4. If a cell wanted to adhere to the ECM using actin filament what type of cell junction should it use?
5. What transmembrane protein family functions to adhere cells to the ECM?
6. What type of cell junction is a desmosome? Does it adhere cells to other cells or to ECM? What cytoskeletal filaments are involved?
7. What type of cell junction is a hemidesmosome? Does it adhere cells to other cells or to ECM? What cytoskeletal filaments are involved?
8. How are desmosomes different from adherens junctions? How are they similar?
9. What are cadherins? What is the fundamental difference between cadherins and integrins?

10. What cell type are tight junctions commonly found in? What is their function? Why is this important? What are the critical transmembrane proteins involved?
  
11. What are selectins? What cell type expresses these proteins? What cell type do they bind to? Why is this an important interaction?
  
12. NCAM and ICAM are both cell adhesion molecules that belong to the \_\_\_\_\_ protein superfamily. Do these molecules bind cells to other cells or to ECM? What is the difference between NCAM and ICAM?
  
13. Could an embryo survive if it had inactivating mutations (like nonsense or frameshift mutations) in ICAMs, NCAMs, or Selectins? What kind of phenotypes would you expect? How is this different than how loss of cadherins would affect a developing embryo?