

Unit Three Homework Assignment

C18 - Blood

Erythropoiesis (29 min)

1. What is erythropoiesis?
2. Where does it occur? (as explained in class)
3. What stimulates the formation of new RBC?
4. What single word summarizes the reason for new RBC formation?
5. What six substances mentioned in video are required for RBC formation?
6. What is significant about parietal cells? Location? Function?
7. What is significant about the EPO gene? Location? How is EPO gene activated? What is produced?
8. What two names are referenced for the stem cell in the red bone marrow?
9. The primary stem cell produces what type of secondary stem cell responsible for RBC formation?
10. What hormone stimulates the stem cell to make new RBC?
11. What is lost from the developing RBC? (two significant items)
12. What do we call the "immature" RBC when it leaves the red bone marrow?
13. How long do RBC circulate? (Maximum mentioned in video)

Leukopoiesis (35 min)

1. What is leukopoiesis?
2. Where does this occur?
3. What is the name of the stem cell responsible for all the formed elements? (Term used in lecture)
4. What two secondary stem cells are formed from the primary stem cell?
5. What new cell lines are formed from the secondary stem cells?
6. What four cell lines form from the myeloblast stem cell? (Forth line comes later!)
7. What drives the formation of platelets? Are platelets actually cells? Platelets formed from what cell type?
8. What cell lines are formed by the lymphoid stem line?
9. What are the names of the two cell types formed from the lymphoid cell lines? Functions for each cell line?
10. Are each of the two newly cells line functional after leaving the bone marrow? Explain.
11. What are the seven formed elements to enter the blood?
12. What do monocytes change into when they enter tissue spaces? What are the two primary functions of these converted cells? This cell may be permanent residents or mobile, where may they take up residence?
13. What two molecules are released by basophils? Function of each?
14. What is the primary function of eosinophils?
15. What are the functions of neutrophils?
16. What cell line forms respiratory burst? Significance?
17. What is the function of platelets?
18. What cell type do B lymphocytes change into? Function?
19. What cell lines do T-lymphocytes change into? Functions?
20. How may you remember the ranking of all these WBC?

Platelet Functions (4 min)

1. What is another name for platelet?
2. What is the stopping of bleeding called?
3. What does thromb mean?
4. Are platelets cells? Explain
5. What is the size of a platelet? How many per microliter?
6. Many platelets circulate in blood, but where are many platelets stored?
7. What are platelet functions?
8. What is thrombocytopenia? Problem?

9. What is thrombocytosis? Problem?

Hemostasis (5 min)

1. What is the meaning of hemostasis?
2. What condition will occur if you don't stop bleeding after a cut?
3. What are the three steps which make hemostasis possible?
4. What is the mechanism for the first step? Explain
5. What is the mechanisms for the second step? Explain
6. What is the mechanism for the third step? Explain
7. What connective tissue fiber is exposed when the blood vessel is damaged to stimulate platelets to become sticky and form platelet plug?
8. What factor found circulating in blood will help to hold blood clot together, like a temporary bandaid?
9. What substances are released from platelets after the platelet plug is formed? Purpose?
10. What is the goal associated with the "cascading event"?
11. What are the two pathways used to form the blood clot? How is each pathway initiated? Rate of each?
12. What is the pathway to form fibrin? Please Note: This discovery was made by Dr. Seager, a physiologist at Wayne State University!