

Lab 7 Blood

Name: _____

PID (last 4): _____

Section: _____

Objectives:

- Observe fibrin threads in clotting blood
- Understand how clotting rates are affected
- Determine blood type

I. Blood clotting:

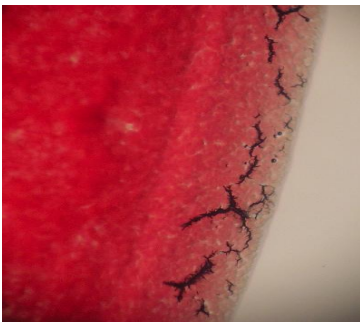
Thromboplastin + Calcium + Prothrombin = Thrombin

Fibrinogen + Thrombin = Fibrin

The fibrin threads produced form the basis of the clot. They are actually minute white strands forming a meshwork, which trap the blood cells until an efficient block has formed across the opening to stop the flow of blood.

Calcium is essential in the process of clotting. Changes in blood calcium levels affect the rate of clotting. If the calcium ions in the blood are precipitated by sodium oxalate, citrates or fluorides, the blood will not clot. Those substances act as anti coagulants.

A. Observing fibrin formation under the microscope:



1. Place a drop of blood on one end of a glass slide.
2. Place the slide on a microscope stage and carefully focus.
3. Observe thin black fibrin threads forming at the edge of the drop.

Questions:

1. Did the fibrin threads look like the picture? **(0.25 POINTS)**
2. How long did it take? (From when you placed the drop of blood on the slide to when fibrin formation occurred.) **(0.25 POINTS)**

B. Determining how addition of calcium and saline-citrate affect clotting time.

1. Place 2 drops of blood on a glass slide (use the same slide from the above experiment).
2. Add a drop of calcium carbonate solution to one drop and a drop of saline–citrate to the other drop.
3. Mix using separate toothpicks.
4. Observe both drops under the microscope and note clotting time below.

Questions:

1. What were the clotting times for: **(0.5 POINTS)**

blood with calcium:_____

blood with saline-citrate:_____

2. Explain why the clotting time for calcium+blood should be less than the clotting time for blood+saline-citrate. **(0.5 POINTS)**

3. Compare your coagulation times with another group (include their times). What explanation can you offer for any difference? **(0.5 POINTS)**

Another group had th following clotting times:

blood with calcium:_____

blood with saline-citrate:_____

II. Blood Typing

1. Place a drop of Anti-A in the well marked “A”.
2. Place a drop of Anti –B in the well marked “B”.
3. Place a drop of Anti-D in the well marked “Rh”.
4. Add a drop of blood to each (The drop of blood should be about the same volume as the drop of antibody reagent).
5. Make sure you **DO NOT cross contaminate** when you mix the well contents with a wood applicator stick
6. Observe agglutination (or the lack of it).

If the results are inconclusive you may repeat the experiment using an Eldon Card. This card contains "wells" with dried antibody that must first be mixed with one small drop of water before blood is added .

Questions

What is your blood type? _____ (0.25 POINTS)

For the following three questions:

A mother is blood type A, and her baby is blood type B.

1. Is the mother's genotype AA or AO? (Genotype can also be expressed as $AA=I^A I^A$ and $AO=I^A i$) (0.25 POINTS)

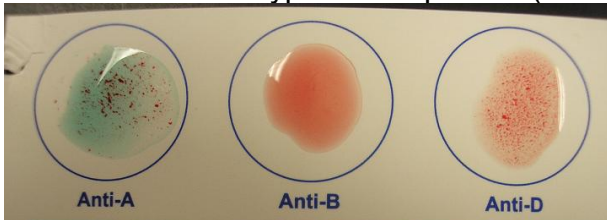
2. What are ALL the possible genotypes of the father? circle all correct answers: (0.5 POINTS)

- A. AA
- B. AO
- C. BB
- D. BO
- E. AB

3. Explain by making Punnett Square(s) for the possible choices: (1 POINT)

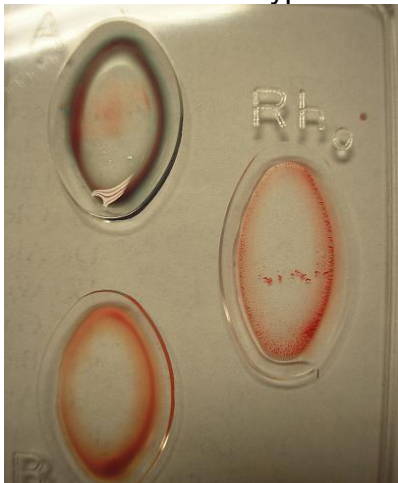
(0.5 POINTS)

What is the blood type of this person (anti-A and anti-D show agglutination)? _____



(0.5 POINTS)

What is the blood type of this person (only anti-D shows agglutination)? _____



All Pictures taken by Joan M.Gonzalez