Blood Typing Lab

OBJECTIVES

• Define agglutinogen and agglutinin
• Perform an actual blood typing procedure
• Observe the antigen/antibody reaction in simulated blood
• Determine the ABO and Rh blood type of four unknown samples
• Understand requirements for blood transfusions

MATERIALS

MATERIALS NEEDED PER GROUP
• Blood typing slides
• Toothpicks

SHARED MATERIALS
• Unknown blood samples:
  Sample 1
  Sample 2
  Sample 3
  Sample 4
• Simulated Anti-A Serum
• Simulated Anti-B Serum
• Simulated Anti-Rh Serum

PROCEDURE

1. Label each blood typing slide:  Sample 1: Slide #1
                                   Sample 2: Slide #2
                                   Sample 3: Slide #3
                                   Sample 4: Slide #4

2. Place one to two drops of blood in each of the A, B, and Rh wells of Slide #1.
3. Place one to two drops of blood in each of the A, B, and Rh wells of Slide #2.
4. Place one to two drops of blood in each of the A, B, and Rh wells of Slide #3.
5. Place one to two drops of blood in each of the A, B, and Rh wells of Slide #4.
6. Place one drop of the simulated anti-A serum in each A well on the four slides.
7. Place one drop of the simulated anti-B serum in each B well on the four slides.
8. Place one drop of the simulated anti-Rh serum in each Rh well on the four slides.
9. Obtain three toothpicks per blood typing slide. Stir each well with a separate clean
toothpick for 30 seconds. To avoid splattering the simulated blood, do not press too hard
on the typing tray.
10. Observe each slide and record your observations in Table 1 of the Analysis section. To confirm agglutination try reading text through the mixed sample. If you cannot read the text, assume you have a positive agglutination reaction.

### Agglutination  No Agglutination

11. Dispose of all materials according to your teacher's instructions

<table>
<thead>
<tr>
<th>Sample 1</th>
<th>Anti-A Serum</th>
<th>Anti-B Serum</th>
<th>Anti-Rh Serum</th>
<th>Blood Type</th>
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</tbody>
</table>
1. Using your knowledge of blood types and the data recorded in Table 1, what agglutinogens are present on the patient's RBCs?

   Sample 1: ___________  Sample 2: ___________
   Sample 3: ___________  Sample 4: ___________

What ABO agglutinin(s) is/are found in each sample's plasma?

   Sample 1: ___________  Sample 2: ___________
   Sample 3: ___________  Sample 4: ___________

What is the blood type for each sample?

   Sample 1: ___________  Sample 2: ___________
   Sample 3: ___________  Sample 4: ___________

If the patient, represented by each sample, needed a transfusion, what blood type(s) could this patient safely receive?

   Sample 1: ___________  Sample 2: ___________
   Sample 3: ___________  Sample 4: ___________

What blood type(s) could safely receive each patient's blood?

   Sample 1: ___________  Sample 2: ___________
   Sample 3: ___________  Sample 4: ___________

2. Using a Venn diagram, compare and contrast agglutinogens and agglutinins. In your diagram, show at least two similarities and two differences.
3. List three situations where blood typing could be used.

4. Define erythroblastosis fetalis.

Describe the sequence of events that result in this condition.

5. You are a type A erythrocyte placing an ad in the personals and you are seeking a compatible mate for a long lasting transfusion. Create an ad to be submitted to the newspaper. The newspaper charges $0.25 per word and the ad can cost no more than $10.