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<th><strong>IMMEDIATE SPIN CROSSMATCH</strong></th>
<th><strong>NLBCP-018</strong></th>
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Overview

An immediate spin crossmatch is performed using patient’s plasma or serum and donor red cells (obtained from a segment of tubing that was originally attached to the unit to be transfused). The purpose is to demonstrate or confirm ABO compatibility.

Policy

1. Compatibility testing shall be performed before red cells are transfused.
2. When the antibody screen is negative and there is no previous history of clinically significant antibodies an immediate spin crossmatch shall be used.
3. Following transfusion of the first unit of blood, the original recipient blood sample may be used to crossmatch additional units up to 96 hours.
4. It is not necessary to repeat the ABO and Rh grouping on donor red cells if a serological crossmatch is performed; however, if no serological crossmatch is performed, ABO and Rh grouping of donor red cells shall be confirmed.
5. No delay shall occur in initiating the centrifugation step or reading the reaction after centrifugation is complete. Delay can lead to false-negative results and failure to detect incompatibility.

Guidelines

1. Patient transfusion history shall be reviewed and this review documented. The following information shall be reviewed:
   1.1. Previous ABO and Rh typing
   1.2. Previous transfusions
   1.3. Difficulties in blood typing
   1.4. Previously identified clinically significant red cell antibodies
   1.5. Adverse reactions to previous transfusions
   1.6. Special transfusion requirements
2. Documentation to link donor unit to recipient shall include:
   2.1. Recipients name
   2.2. Recipient’s identification number
   2.3. ABO and Rh groups of the recipient
   2.4. ABO and Rh groups of blood component
2.5. Name of the component
2.6. Donor unit number
2.7. Expiry date of donor unit
2.8. Compatibility status of the donor unit
2.9. Date and time of crossmatch

**Materials**

1. Isotonic saline
2. Test tubes (10x75mm or 12x75mm)
3. Transfer pipettes
4. Test tube rack
5. Serological centrifuge
6. Donor unit(s)
7. Patient EDTA whole blood sample or patient serum (Do not use sample drawn into tubes with neutral gel separators)

**Procedure**

1. [Determine specimen suitability.](#)
2. Centrifuge specimen (speed and time as recommended by manufacturer’s instructions.)
3. Check specimen for abnormal appearance after centrifuging (e.g. hemolysis.)
4. Create crossmatch worksheet.
5. [Perform patient history check](#) and check for special requirements (e.g. CMV negative, irradiated products).
6. Choose acceptable donor unit(s) from blood bank fridge.
7. Record donor unit number(s) on crossmatch worksheet.
8. Label two (2) test tubes for each donor red cell suspension being tested with patient’s serum or plasma.
9. Remove a segment from each donor red cell unit.
10. Return donor unit(s) to fridge.
11. **Prepare a 3-5% red cell suspension(s)** from donor unit(s) segment in the corresponding labelled tube.

12. Add 2 drops of patient’s serum or plasma to the second labelled tube.

13. Add 1 drop of the suspension of donor red cells to the appropriate test tube.

14. Mix the contents of the tube(s) and centrifuge (speed and time according to the manufacturer’s instructions).

15. Examine the tube(s) for hemolysis. Record if present.

16. Gently resuspend the red cell button(s) while examining macroscopically for agglutination.

17. Grade and record results on crossmatch worksheet.
   
   17.1. No agglutination or hemolysis indicates the donor unit(s) is/are compatible.
   
   17.2. Agglutination or hemolysis indicates the donor unit(s) is/are incompatible.

18. Print documentation, according to facility procedure, to link recipient to RBC unit in fridge.

**Quality Control**

1. An ABO and Rh type and antibody screen is performed on the patient sample to be crossmatched. Any discrepancies shall be resolved or antibodies identified before crossmatch is performed.

2. Incompatible results shall be investigated as per facility procedure.

**Key Words**

Crossmatch, blood, immediate spin
Supplemental Materials

Is the specimen suitable? 

- Yes: Centrifuge specimen 
- No: Request new specimen

Is specimen hemolyzed? 

- Yes: Add 1 drop of donor red cell suspension to the appropriate tube 
- No: Create crossmatch worksheet 

Perform patient history check 

Choose donor unit(s) 

Record donor unit number(s) on worksheet 

Return donor unit(s) to fridge 

Label 2 tubes for each donor unit 

Prepare 3-5% suspension from donor unit segment in first labelled tube 

Add 2 drops of patient plasma/serum to second labelled tube 

Is hemolysis present? 

- Yes: Further investigation required 
- No: Resuspend and examine macroscopically 

Agglutination present? 

- Yes: Donor unit(s) are compatible 
- No: Print crossmatch card and place with donor unit in fridge
References

