1. **Principle**

Plant lectins can be useful in identifying some blood types/sub groups, specifically the lectins Anti-A1 *(Dolichos Biflorus*) and/or Anti-H *(Ulex Europaeus)*.9.1

1. **Scope and Related Policies**
   1. When weak or unexpected reactions occur in routine ABO typing, or when there is a discrepancy between forward and reverse grouping, sub-grouping should be done.
   2. Unusual or continued discrepant results must be reported to the Charge Technologist or designate.
2. **Specimen**

3% saline suspension of cells to be tested (patient cells or donor cells)

1. **Material**

**Equipment:** Serological centrifuge

Block for test tubes

**Supplies:** Test tubes – 10 x 75 mm

Serological pipettes

**Reagents:** Normal saline

3% saline suspension known A1 and A2 cells

Lectins: anti-A1 and/or anti-H

1. **Quality Control – N/A**
2. **Procedure**

Using Anti-A1 (*Dolichos Biflorus*) and/or Anti-H (*Ulex Europaeus*) Lectins

|  |  |
| --- | --- |
| 1. Label Tubes | 1. Label 3 10 x 75 mm tubes (1 with patient name or donor unit number, 1 A1 cell, 1 A2 cell). |
| 1. Prepare 3% cell suspension | 1. Harvest cells from segment using the segment device. Place in tube labeled with patient name or donor unit number 2. Wash cells x 2 in 0.9% Saline. 3. Add 0.5 – 1.0 mL of normal saline to resuspend to 3%. 4. Compare the final suspension with a commercial 3% red cell suspension and adjust the suspension strength if necessary 5. Place the test tubes in the block beside the other identically labeled test tubes and in the same order as recorded on the request form or on computer screen. |
| 1. Add Lectin | 1. Add 1 drop of appropriate Lectin to all tubes |
| 1. Add test cells | 1. Add 1 drop of test cell, 1 drop known A1 cell, 1 drop known A2 to appropriate tube 2. Mix tubes well 3. Centrifuge immediately for 3400 rpm for 10-15 seconds 4. Suspend gently then read macroscopically for agglutination and record results |
| 1. Interpret results | * + 1. See 7.0 Reporting |

1. **Reporting** 
   1. Interpretation of Results:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cells** | **Reactions with**  **anti-A1** | **Interpretation** | **Cells** | **Reactions with**  **anti-A1** | **Interpretation** |
| Unknown | 3 | A1 | Unknown | 0 | A2 or other weaker sub-group of A |
| A1 Control | 3 |  | A1 Control | 3 |  |
| A2 Control | 0 | A2 Control | 0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cells** | **Reactions with**  **anti-H** | **Interpretation** | **Cells** | **Reactions with**  **anti-H** | **Interpretation** |
| Unknown | 3 | A2 | Unknown | 0-1 | A1 |
| A1 Control | 0-1 |  | A1 Control | 0-1 |  |
| A2 Control | 3 | A2 Control | 3 |

1. **Procedural Notes** 
   1. A1 lectin should agglutinate A1 and A1B red cells but not A2, A2B, B or O red cells.9.1
   2. H lectin will demonstrate a strength of reaction as follows:

O > A2 > B > A1 > A1B 9.1

8.3 Approximately 20% of group A individuals are A2. 1-8% of people   
 who type as A2 and 25% of those who type A2B will have alloanti-A1   
 in their plasma.9.1

1. **References**
   1. Roback JD, ed. American Association of Blood Banks Technical Manual, 17th ed. Bethesda, MD: AABB, 2011: 367, 888-889.
   2. Refer to manufacturer’s latest product insert.
2. **Revision History**

|  |  |
| --- | --- |
| **Revision Date** | **Summary of Revision** |
| January 31, 2014 | * Revised name of manual * Revised wording in section 6.1 to specify “1 with patient name or donor unit number, 1 A1 cell, 1 A2 cell” * Added Procedural Note 8.1 and 8.2 * Updated references to include the most recent editions |
| September 13, 2016 | * Removed step 6.5 Incubation at room temperature |