**Purpose:**

To provide instructions for the use of papain-treated ALBAcyte® Antibody Identification Cell for identifying unexpected antibodies in plasma.

**Background:**

Enzyme treatment of RBCs can enhance the detection of some blood group antibodies, and can denature certain blood group antigens on the cells. This action can be used to aid in the detection of weak antibodies, and in the differentiation of blood group antibodies in a sample with multiple specificities.

**Special Considerations:**

* Papain treatment of RBCs denatures or depresses the expression of many antigens of the MNS, Duffy, Chido/Rodgers, Gerbich, Indian, JMH and Xg blood group systems.
* Reactivity with antibodies in the Rhesus, Kidd, Lewis, P and I blood group systems is enhanced.

**Procedure:**

|  |  |  |
| --- | --- | --- |
| **Step** | **Action** | **Related Documents** |
| **1** | * Confirm sample acceptability.
* Anticoagulated samples collected in EDTA are preferred.
* Clotted samples are acceptable.
 | * Evaluating Patient Samples and Request Forms
 |
| **2** | Quality Control* Daily QC performed
* QC Ortho anti-IgG
* Visually inspect panel cells for hemolysis and discoloration.
 |  |
| **3** | * Label tubes per established procedure.
* Ensure reagents are well mixed and at room temperature before use.
* Include an autologous control (patient’s enzyme treated cells).
 | * Labeling Tubes for Manual Bench Testing
* Rack Set-Up Procedure
 |
| **Step** | **Action** | **Related Documents** |
| **4** | Preparation of papain treated autologous control* Wash 3 to 4 drops of packed red blood cells to be treated 3 times manually with isotonic saline.
* Remove as much of the final supernatant as possible to obtain a packed red cell pellet.
* In a clean tube, add **1 volume** of ALBAzyme™ Papain Solution to **1 volume** of the washed packed red cells.
* Incubate at 37°C for **15 minutes**. Do not overtreat the red cells.
* ***Note:*** Prolonged exposure of red cells to the papain may cause spontaneous aggregation of the cells due to overtreatment.
* After incubation, wash the treated cells 3 times manually with isotonic saline and re-suspend to the required 3-5% for testing.
* Treated cells should be used on the day of preparation.
* ***Note:*** Once opened, the papain solution can be used for 30 days. Document the open and expiration dates. Do not use beyond the original expiration date of the reagent.
 | * Manufacturer’s Package Insert
 |
| **5** | * Add **2 drops** of patient plasma/serum to each tube.
 |  |
| **6** | * Add **1 drop** of reagent panel cells and **1 drop** autologous control to respective labelled tubes. Mix gently.
* ***Note:*** Do not add any potentiator.
 |  |
| **7** | * Incubate at 37°C for 15 minutes.
 |  |
| **8** | * Mix well after incubation and centrifuge for the posted time in a calibrated serologic centrifuge.
 |  |
| **9** | * Re-suspend cell button and examine macroscopically for hemolysis and agglutination.
* Grade and record reactions.
 | * Reading and Grading Tube Hemagglutination
 |
| **10** | * Wash the tubes four times with saline.
 | * Washing Red Cell Samples (Manual or Automated)
 |
| **11** | * Add **2 drops** of Ortho anti-IgG to each tube.
 |  |
| **12** | * Mix the tubes **immediately.**
* Centrifuge for the posted time in a calibrated serologic centrifuge.
 |  |
| **Step** | **Action** | **Related Documents** |
| **13** | * Immediately after centrifugation:
* Re-suspend the cell button and examine macroscopically for agglutination.
* Grade and record reactions.
 | * Reading and Grading Tube Hemagglutination
 |
| **14** | Validate all negative antiglobulin results:* Add **1 drop** of IgG-coated RBCs to all tubes with negative antiglobulin results.
* Centrifuge for the posted time in a calibrated serologic centrifuge.
* Resuspend the cell button and examine macroscopically for agglutination.
* Grade and record reactions.

***Valid control results****: Agglutination of at least grade 2+ must be present or the test results are invalid and the test must be repeated*. | * Reading and Grading Tube Hemagglutination
 |
| **15** | Interpret the reactions of the IgG-coated RBCs as follows: |
| **If agglutination is…** | **Then…** |
| * Present
 | * Test is complete.
 |
| * Absent
 | * Test is invalid:
* Repeat Steps 3, 5-14.
* Consider cell washer problem or inactive AHG.
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| 16 | * Check that the record is complete:
* Date and time of completion,
* Technologist identification, and
* Final clerical check
 |  |
| 17 | * Proceed to rule out and antibody identification.
 | * Guidelines for Antibody Identification
 |

References:

Current version of Manufacturer’s Package Insert instructions.

AABB Technical Manual, Current Edition