**BB.ABO/RH.1.0 ABO BLOOD GROUP TESTING**

**STATEMENT OF PURPOSE**

The purpose of this procedure is to outline the steps to be taken when performing an ABO type and the process to confirm patient’s ABO typing by either history or additional testing.

**SCOPE**

This document applies to all Mid America Clinical Laboratories Blood Banks.

**RELATED DOCUMENTS**

BB.SPEC.1.0 Specimen Requirements

BB.SPEC.3.0 Specimen Receipt and Rejection

BB.INTERP.1.0 Grading and Interpretation BB Serological Reactions

BB.ABORH.3.0 Resolution of ABO Discrepancies

BB.ABORH.4.0 Resolution of Discrepancies between Current and Historical Types

BB.ABORH.5.0 Policy for Second ABO and Rh Type

BB.LIS.2.0 History Files

**SPECIMEN**

Specimen - EDTA or Clot tube as described in BB.SPEC.1.0

**MATERIALS**

Disposable glass test tubes

Disposable Blood Bank droppers

Permanent marking pen

**REAGENTS**

Anti-A Anti-A,B

Anti-B A1 Red Cells

B Red Cells Blood Bank Saline

**EQUIPMENT**

Calibrated serofuge

Agglutination viewer

**QUALITY CONTROL**

See BB.QC.1.0

**PROCEDURE**

1. Testing Red Cells

|  |  |  |
| --- | --- | --- |
| Step | **Action** | **Notes** |
| 1 | Label tubes with patient/unit and test identification. | One tube each for anti-A, Anti-B, (A,B for retyping of O donor cells). |
| 2 | Add 1 drop each of reagent Anti-A and Anti-B to their respective tubes.  (Anti A,B if testing donor units.) |  |
| 3 | Add 1-drop patient/donor red cell suspension(s) (50ul) to each cell grouping. | See BB.GEN.3.0 |
| 4 | Mix gently and centrifuge the test tubes. | Use saline calibration time. |
| **CRITICAL STEP** | | |
| 5 | Resuspend and read for agglutination/hemolysis. Using an agglutination viewer, grade and record test results immediately. | See BB.INTERP.1.0  See [Computer Steps](#_10.__COMPUTER_STEPS). |

1. Testing Plasma

|  |  |  |
| --- | --- | --- |
| Step | **Action** | **Notes** |
| 1 | Label tubes with patient and test identification. | One tube each for A1Cells and B Cells. |
| 2 | Add 2 drops of patient serum or plasma and one drop of A1 Cells and B cells to appropriate tube. | Plasma or reagent may be added to the tubes in any order. |
| 3 | Mix gently and centrifuge the test tubes. | Use saline calibration time.  Spin at same time as red cell typing |
| **CRITICAL STEP** | | |
| 4 | Resuspend and read for agglutination/hemolysis. Grade and record test results immediately. | May be read at the same time as red cell typings.  See BB.INTERP.1.0  See Computer Steps. |

**REPORTING RESULTS**

Interpretation + = agglutination 0 = no agglutination NA = Not applicable

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Anti-A | Anti-B | A1Cells | B Cells | Rh Control | Group\* |
| 0 | 0 | + | + | NA | O |
| + | 0 | 0 | + | NA | A |
| 0 | + | + | 0 | NA | B |
| + | + | 0 | 0 | O\* | AB |

\*If pt is Rh positive

**PROCEDURE NOTES\***

* If pattern of reactivity does not match any of those shown, proceed to Resolution of ABO Discrepancies procedure BB.ABORH.3.0.
* Discrepancies must be resolved prior to interpretation and selection of blood components for transfusion. If transfusion is necessary before resolution, the patient should receive group 0 red cells and group AB plasma.
* If results of current ABO grouping disagree with previous patient results, the discrepancy must be investigated. See BB.ABORH.4.0

**LIMITATIONS**

* Some subgroups of A and B antigen may not be detected by the Anti-A and Anti-B reagents**.**
* Incubating the tubes at room temperature for 5-15 minutes may enhance weak reactions in serum grouping.
* Serum grouping performed on serum of an infant may give misleading results until the infant is approximately 6 months of age. Antibodies found in an infant’s circulation prior to this time are usually of maternal origin.
* In older adults, serum antibodies may not be present in high enough levels to be detected with this test.
* Manufacturer’s direction circulars should be consulted for performance characteristics and limitations.

**REFERENCES**

Manufacturer’s direction circulars for Anti-A, Anti-B, and A1 and B Reagent Cells.

Technical Manual, American Association of Blood Banks, Current Edition.

Standards for Blood Banks and Transfusion Services, Current Edition

CAP Checklist

WRITTEN BY: Beth Hughes, MT(ASCP)

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**COMPUTER STEPS**

1. **Entering Initial ABO Results**

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | Menu Selection | **Action** | **Notes** |
| 1 | Blood Order Processing | Enter patient’s MR# in the “Value” field and select appropriate patient. | M# must be entered from patient’s specimen tube. |
| 2 |  | Select Order Selection tab. |  |
| 3 |  | Select accession number. |  |
| 4 | Patient Specimen | Click on ABORH result field. |  |
| 5 |  | Press the **Home** key. | Cursor moves to reaction result entry field. |
| 6 |  | Enter reaction results under appropriate test. | Enter reactions into the computer as tests are read.  Cursor moves to Interp result field. |
| 7 | Interp | Enter Interpretation under “INTERP”  Key Interpretation  A A  B B  O O  X AB  P Positive  N Negative  ND Not Done | Interp result is automatically posted to the ABR Result field. |
| 8 |  | Click on **Save** button or proceed to subsequent testing. |  |