**Rh Type**

**PRINCIPLE**

Testing with Anti-D reagent is necessary to determine if red blood cells possess or lack the D blood group antigen. Agglutination of red blood cells with Anti-D reagent is a positive test result, which indicates the presence of the D antigen on the red blood cells. Absence of agglutination is a negative test result, which indicates the D antigen is not demonstrable. A test for weak D may be performed on samples that test negative with Anti-D to determine the Rh status.

**SPECIMEN COLLECTION**

No special preparation of the patient is required prior to specimen collection. Blood should be collected by approved techniques. The sample should be stored at 2 to 8C. The method of collection and storage determines the period within which the red blood cells should be tested. EDTA or clotted samples should be tested within 10 days.

**REAGENT**

Seraclone Anti-D (RH1) Blend Rapid Tube. Do not use beyond expiration date. Store at 2 to 8C. May be at room temperature (20 to 30C) while in use. (Refer to product insert for additional information about reagent.)

**MATERIALS REQUIRED:** 12 x 75 mm test tubes, isotonic saline, pipettes, centrifuge, agglutination viewer.

**QUALITY CONTROL:** To recognize reagent deterioration the reagent must be tested daily with appropriate controls. See QUALITY CONTROL procedure.

**PROCEDURE – TUBE METHOD:** **(Bring all reagents to room temperature before testing)**

**(Read Comments section next page)**

**NOTE:** Steps 2 and 3 may be interchanged, but do it one way or the other. Be consistent.

|  |  |
| --- | --- |
| **Step** | **Action** |
| 1 | Prepare a 3-5% suspension of red blood cells to be tested in isotonic saline.  (Washed or unwashed cells may be used) |
| 2 | Add one drop of Anti-D reagent to appropriately labeled tube. |
| 3 | Add one drop of rbc suspension into the tube and mix. |
| 4 | Centrifuge the test tube for appropriate centrifuge time.\* |
| 5 | Gently resuspend the red blood cell button and observe macroscopically for agglutination. |
| 6 | Record results. |
| 7 | If no agglutination is observed and if a Weak D determination is desired, proceed to the Weak D test. |

**\*Note: Centrifuge spin and wash time are noted on each centrifuge.**

**COMMENTS**

Concurrent testing for the ABO blood group serves as a routine simultaneous control. The routine use of an Rh control is not required. Only when the cells under test are found reactive with anti-A, anti-B and anti-D is the use of an additional control necessary. Isotonic saline, a commercial Rh control, a 6% to 8% solution of bovine albumin in isotonic saline, or a patient auto-control may be used. If the control test gives a positive reaction, a valid interpretation cannot be made.

**RESULTS**

• Agglutination of the red blood cells is a positive test result and indicates the presence of the D antigen.

• No agglutination of the red blood cells is a negative test result and indicates the absence of the D antigen.

**LIMITATIONS:**

• Cord cells heavily sensitized with anti-D may demonstrate a false-negative immediate spin test result.

• Reactions of red blood cells exhibiting weakened expressions of the D antigen may show varied reactivity

as compared to those obtained with other Anti-D reagents.

• Refer to the product insert for additional comments.

**REFERENCES:**

Roback, J. (2011). Technical manual (17th ed.). Bethesda, Md.: AABB.

Package insert: Biotest Blood Grouping Reagent Anti-D (RH1) Blend Seraclone® Human Monoclonal Blend. Dreieich, Germany.

The CHEO courses are evaluated using internal Hybrid or Online Course Review Tools based on criteria from project colleges' Quality Assurance Standards developed by faculty and instructional designers.  Periodic course review is ongoing.

 Consortium for Healthcare Education Online project material by CHEO Project TAACCCT Round 2 is licensed under a [Creative Commons Attribution 4.0 International License](http://creativecommons.org/licenses/by/4.0/)“This product was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.”