**Purpose**

This procedure provides instructions for reading and grading test tube hemagglutination reactions.

**Policy**

Observations of all tube test results are recorded properly and promptly at the time the test is performed.

**Procedure:**

|  |  |  |
| --- | --- | --- |
| **Step** | **Action** | **Related Documents** |
| 1 | Remove a tube(s) from the centrifuge head  Examine the supernatant for hemolysis over a white background.   * + ***Note:*** *Plasma/Serum surrounding the centrifuged RBC buttons must be inspected for hemolysis. Hemolysis must be regarded as a positive sign of an antigen-antibody reaction if the pretest serum was not hemolyzed and no hemolytic agent was added to the test.* |  |
| 2 | Record the degree of hemolysis if present. |  |
| 3 | Hold the tube(s) firmly between thumb and forefinger over an illuminated concave mirror. |  |
| 4 | Adjust the concave mirror to eliminate glare. |  |
| 5 | Adjust the tube(s) so that the RBC button is closest to the mirror. |  |
| 6 | Dislodge the cell button gently. |  |
| 7 | Looking into the mirror, observe the way the RBCs leave the cell button.  The characteristics of the agglutination should be noted.   * + Loose, “stringy,” mixed field, or refractile agglutinates should be recorded as they provide valuable clues in the investigation of aberrant findings.   + Utilize BBCS comments to record atypical findings |  |
| 8 | Continue observation until cell button is completely resuspended. |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Step** | **Action** | | **Related Documents** |
| 9 | **Interpret reactions as follows:** | |  |
| If agglutination and/or lysis are… | Then… |  |
| **Not observed** | The test result is negative; the reaction grade and score are both 0 (zero). | Table A  SQ Blood Order Processing Test Result Guide |
| **Observed** | Grade and score reactions as follows: |
| **Atypical Agglutination Observed** | Record in BBCS comments. Initial findings and resolution should be recorded through PB comment |

**Table A**

|  |  |  |
| --- | --- | --- |
| **ManualGrade** | **Sunquest Key** | **Appearance** |
| **4+** | **4** | Complete Agglutination: No unagglutinated RBCs |
| **3+** | **3** | Strong Reaction: a few detached masses of agglutinated RBCs; no unagglutinated RBCs |
| **2+** | **2** | Moderate Reaction: Large agglutinates in a sea of smaller agglutinates; few unagglutinated RBCs |
| **1+** | **1** | Weak Reaction: Many agglutinates of up to 20 RBCs with smaller agglutinates and unagglutinated RBCs. |
| **W** | **W** | Trace Reaction: Small agglutinates of 2-4 RBCs with many unagglutinated RBCs |
| **0** | **0** | No reaction: All cells are smoothly in suspension |
| **H** | **H** | Hemolysis observed. Objective evaluation of slight, moderate or gross hemolysis should be recorded in BBCS comments |
| **0R** | **R** | No reaction after saline replacement. |
| **4M** | **9** | Large complete agglutinates with a background of unagglutinated cells.   * Mixed Field observed. Explanation of mixed field investigation should be recorded in BBCS comments |
| **3M** | **8** | Moderate to large agglutinates with a background of unagglutinated cells.   * Mixed Field observed. Explanation of mixed field investigation should be recorded in BBCS comments |
| **2M** | **7** | Moderate agglutinates together with a background of unagglutinated cells   * Mixed Field observed. Explanation of mixed field investigation should be recorded in BBCS comments |
| **1M** | **6** | Few to moderate clumps of agglutinated with a background of unagglutinated cells.   * Mixed Field observed. Explanation of mixed field investigation should be recorded in BBCS comments |
| **WM** | **5** | Few clumps of agglutinated RBCs with a background of unagglutinated cells.   * Mixed Field observed. Explanation of mixed field investigation should be recorded in BBCS comments |

**References**

Judd’s Methods in Immunohematology, Current Edition