

Anti D (Rh) Antibody Titre – [Serum] Analysis

Objective

The objective of this test is to measure the titre of anti-D (Rh) antibodies in serum. It is primarily used in the management of Rh-negative pregnant women to assess the risk of hemolytic disease of the fetus and newborn (HDFN) and in transfusion medicine to ensure compatibility.

Materials and Methods

Materials:

- Patient serum sample
- Rh(D) positive red blood cells
- Saline solution and test tubes
- Centrifuge, pipettes, and incubator
- Anti-human globulin (AHG) reagent for indirect antiglobulin testing

Methods:

1. Sample Preparation: Obtain serum from patient blood sample.
2. Serial Dilution: Prepare serial dilutions of the serum in saline.
3. Agglutination Testing: Mix each dilution with Rh(D) positive red blood cells and incubate.
4. Observation: Assess agglutination visually or microscopically; the highest dilution showing agglutination represents the antibody titre.
5. Interpretation: High titres indicate increased risk for HDFN and may require clinical interventions such as intrauterine transfusion or early delivery planning.

Results

- Low titre: Minimal risk of hemolytic disease of the fetus/newborn
- Moderate titre: Requires monitoring and possible follow-up testing
- High titre: Indicates significant risk of HDFN; urgent clinical action may be needed

Conclusion

Anti-D (Rh) antibody titre testing is crucial for managing Rh incompatibility in pregnancy and ensuring safe transfusion practices. Results should be interpreted in conjunction with maternal-fetal history, ultrasound findings, and other serological investigations.