

Anti Nuclear Antibody – [Serum] Analysis

Objective

The objective of this test is to detect anti-nuclear antibodies (ANA) in serum. ANA testing is widely used as a primary screening tool for autoimmune connective tissue diseases such as systemic lupus erythematosus (SLE), scleroderma, and Sjögren's syndrome.

Materials and Methods

Materials:

- Serum sample from patient
- ANA testing kits (indirect immunofluorescence or ELISA)
- Fluorescent microscope or microplate reader
- Standard laboratory equipment (pipettes, centrifuge)

Methods:

1. Sample Collection: Collect venous blood and separate serum using centrifugation.
2. ANA Detection: Perform ANA testing via indirect immunofluorescence (gold standard) or ELISA technique.
3. Pattern Recognition: In immunofluorescence, observe staining patterns (e.g., homogeneous, speckled, nucleolar) which give diagnostic clues.
4. Titration: Determine ANA titre using serial dilutions to measure antibody concentration.
5. Interpretation: Positive ANA requires further evaluation with specific antibodies (e.g., anti-dsDNA, anti-Sm) for definitive diagnosis.

Results

- Negative: No ANA detected (titre below reference)
- Positive: ANA detected; titre and fluorescence pattern must be reported
- High titres: Strongly associated with autoimmune connective tissue diseases, especially SLE

Conclusion

Serum ANA testing is a cornerstone in diagnosing autoimmune diseases. Interpretation should consider ANA pattern, titre, and clinical presentation, along with other serological markers for a comprehensive evaluation.