

Anti TPO Antibody (Includes TPO and ATA) – [Serum] Analysis

Objective

The objective of this test is to detect anti-thyroid peroxidase (TPO) antibodies, including associated anti-thyroid antibodies (ATA), in serum. This test is primarily used to diagnose autoimmune thyroid diseases such as Hashimoto's thyroiditis and Graves' disease and to monitor autoimmune activity in thyroid disorders.

Materials and Methods

Materials:

- Serum sample from patient
- ELISA or chemiluminescent immunoassay kits for anti-TPO antibodies
- Microplate reader or automated analyzer
- Standard laboratory equipment (pipettes, centrifuge)

Methods:

1. Sample Collection: Collect venous blood and separate serum by centrifugation.
2. Antibody Detection: Perform ELISA or chemiluminescent assay to detect and quantify anti-TPO antibodies.
3. Calibration: Use assay-specific standards for accurate measurement.
4. Interpretation: Elevated levels indicate autoimmune thyroid disease; correlate with clinical findings and other thyroid markers (TSH, T4, anti-thyroglobulin).
5. Quality Control: Utilize positive and negative controls included in the kit for reliability.

Results

- Negative: No anti-TPO antibodies detected
- Positive: Elevated anti-TPO and ATA levels suggest autoimmune thyroiditis or Graves' disease
- High titres: Strongly associated with active autoimmune thyroid dysfunction

Conclusion

Anti-TPO antibody testing, including ATA, is a crucial diagnostic tool for autoimmune thyroid diseases. It assists in confirming diagnosis and monitoring disease progression or response to therapy when combined with other thyroid function tests.