

## Human Anti-Thyroglobulin (TG) IgG ELISA kit # 3300-360-TGG

This kit measures human IgG class antibodies against Thyroglobulin (TG) in human serum or plasma. For in vitro research use only.

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| <p style="text-align: center;">Typical Std. Curve</p> | <p style="text-align: center;"><b>ELISA Kit Features</b></p> <ul style="list-style-type: none"> <li>Purified TG coated, stabilized, ready-to-use 96-well strip plate, stable for ~12 months.</li> <li>Anti TG (IgG) standards (100-9000 IU/ml); Negative and positive control. calibrated against the WHO reference preparation 65/93 for anti-thyroglobulin antibodies. WHO 65/93 is measured as 1000 IU/ml anti-TG.</li> <li>Sample: Serum or plasma; size 100 ul (diluted).</li> <li>1 hr. assay. 3 incubation steps, Sensitivity ~10 IU/ml; Good Recovery and Assay Precision.</li> <li>Contains all necessary reagents. Shelf life ~12 months.</li> <li>Sample values are calculated from the standard curve.</li> </ul> |
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### Assay Procedure: Allow all reagents to reach room temperature. Arrange and label required number of strips.

The antibody bound to the solid phase is detected by HRP conjugate using TMB as a substrate. The reaction is monitored at 450 nm. Quantification of unknown samples is achieved by comparing their absorbance with a reference curve prepared with known standard concentrations.

**Step 1.** Pipet **100 ul** each of pre-diluted stds, controls and samples Mix gently and **incubate at RT for 60 mins.**

**Step 2. Aspirate and Wash 3X** Add **100 ul** of HRP solution, cover and incubate at **RT for 60 mins.**

**Step 3. Aspirate and Wash 3X. Add 100 ul TMB substrate solution** to all wells, mix gently, and **incubate at RT for 15 mins .**

**Step 4.** Pipet **100 ul of stop solution** into each well and mix gently (blue color turns yellow). Incubate at **RT for 5 mins. Measure absorbance at 450 nm.** Determine the conc. in each sample using the standards (results are expressed in IU/ml).

### Performance characteristics

Calculate the Net A450 values of the duplicate (deduct zero values). Plot the concentration versus the net A450 and calculate the sample values from the standard curve.

#### Interpretation of results

Normal: < 100 IU/ml    borderline: 100 – 150 IU/ml    elevated: > 150 IU/ml

#### Precision

Intra-assay (2.4 – 5.0 CV %) Inter-assay (2.3. – 5.7 CV %)

**Specificity & Species reactivity:** This kit is optimized for human Anti-TG IgG. IgM and IgA antibodies will not be detected. Separate ELISA kits are available for Anti-TG Ig detection in other species (mouse, rat, monkey).

### General information

Thyroid disorders are the most prevalent of all autoimmune diseases that are associated with the occurrence of differentiated autoantibodies and are thought to be related to a genetical pre-disposition. These autoantibodies are directed against membrane located and/or extracellular antigens of the thyroid cells.: - Thyroglobulin (hTg), a water soluble glycoprotein with a molecular weight of approx. 660.000 Dalton, is the principal constituent of the thyroidal colloid sharing about 75 % of it's mass. Synthesis of the thyroid hormones T3 and T4 is based on the oxidative iodination of tyrosine residues of the thyroglobulin molecule. Within the cell thyroglobulin is trans-ported by the microsomes. Together with the secretion of T3 and T4 also small amounts of hTg are liberated into circulation. - The microsomal antigen of the thyroid is an integral mebrane protein of the microsomes. It has been charcterized as the enzyme Thyroid Peroxidase (TPO) with a molecular weight of nearly 110.000 Dalton.

The TSH-Receptor is a regulatory protein embedded into the thyroid cell membrane effecting synthesis and release of the thyroid hormones as well as cellular growth. - The so-called Colloid-Antigen 2 CA2. Besides these antibodies to functional antigens, antibodies directed against the circulating thyroid hormones T3 und T4 may occur. In Graves' Diseases, an immunogenetic form of hyperthyroidism often additional antibodies occur, which are directed against eye muscle antigens. They cause the endocrine ophthalmopathy.

Autoantibodies are found in inflammatory disaeses as well as in thyroid autoimmune disorders. Various symptoms of thyroid diseases, like goiter, thyroid pain, hyperthyroidism and hypothyroidism may be caused by immunogenetic processes and the occurrence of organ specific antibodies. This underlines the clinical relevance for autoantibody determination for the assesment of thyroid diseases. Most important autoimmune diseases of the thyroid gland are: Hashimoto's Thyroiditis Primary Myxedema Graves' disease (often associated with endocrine ophthalmopathy) and other asymptomatic, for example postpartum thyroiditis. The occurrence of Anti-TG and Anti-TPO autoantibodies at the same time seem to be related to their functional association. Tyrosine amino acid residues of the thyroglobulin molecule, as primary protein for the synthesis of the thyroid hormones T3 and T4, are actively iodinated in association with the thyroid peroxidase (TPO). TSH acts in stimulating synthesis and release of thyroid hormones in close cooperation of all the proteins. This makes the simultaneous appearance of all these antibodies plausible. Persisting inhibition of the peroxidase activity by specific autoantibodies (Anti-TPO Ab's) causes a decrease in the synthesis of thyroid hormones and thus hypothyroidism. Especially at the end of pregnancy, determination of thyroid antibodies may be a helpful diagnostic tool in the early diagnosis of an onset of post-partum hypothyroidism (Hashimoto's post partum depression). Hashimoto diseases are often associated with highly elevated titers of thyroid autoantibodies. The concentration of antibodies against thyroglobulin exceeds the titer of Anti-TPO antibodies, whereas in Graves' disease the opposite situation is found, with a stronger elevation of the Anti-TPO antibodies.

ADI'S Human Anti-Thyroglobulin (TG) IgG ELISA kit is an indirect solid phase ELISA for the quantitative measurement of IgG class autoantibodies against thyroglobulin (TG) in human serum or plasma.

#### Related ELISA kits

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| 3300-340-CCG | Human Anti-Cyclic Citrullinated Peptide (CCP)IgG ELISA kit, 96 tests, Quantitative |
| 3300-350-TPG | Human Anti-thyroid peroxidase (TPO) IgG ELISA kit, 96 tests, Quantitative          |
| 3300-360-TGG | Human Anti-thyroglobulin (TG) IgG ELISA kit, 96 tests, Quantitative                |

3300-360-TGG-flr    131028P

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