

## Product Data Sheet

### Porcine Thyroglobulin (Tg) Protein

<input type="checkbox"/> Cat# THGL16-N-10	Porcine/Pig (swine) Thyroglobulin (Tg) Protein	Size: 10 mg
<input type="checkbox"/> Cat# THGL16-N-100	Porcine/Pig (swine) Thyroglobulin (Tg) Protein	Size: 100 mg

#### Description

Thyroglobulin (Tg) is a 660 kDa, dimeric protein produced by and used entirely within the thyroid gland. In earlier literature, Tg was referred to as "colloid". Tg is used by the thyroid gland to produce the thyroid hormones thyroxine (T4) and triiodothyronine (T3). The active form of triiodothyronine, 3, 5, 3' triiodothyronine, is produced both within the thyroid gland and periphery by 5'-deiodinase (which has been referred to as tetraiodothyronine 5' deiodinase.)

Thyroglobulin should not be confused with Thyroxine-binding globulin, a carrier protein responsible for carrying the thyroid hormones in the blood. Tg is produced by the thyroid epithelial cells, called thyrocytes, which form spherical follicles. Tg is secreted and stored in the follicular lumen. Via a reaction with the enzyme thyroperoxidase, iodine is covalently bound to tyrosine residues in thyroglobulin molecules, forming monoiodotyrosine (MIT) and diiodotyrosine (DIT).

Thyroxine is produced by combining two moieties of DIT. Triiodothyronine is produced by combining one molecule of MIT and one molecule of DIT. Proteases in lysosomes digest iodinated thyroglobulin, releasing T3 and T4. Patients with Hashimoto's thyroiditis or Graves' disease, frequently develop antibodies against Tg. Tg-specific antibodies help in the diagnosis of these diseases, but they also may be present in apparently healthy euthyroid individuals.

Thyroglobulin levels in the blood can be used as a tumor marker[1] for certain kinds of thyroid cancer. Thyroglobulin levels in the blood can also be elevated in cases of Graves' disease.

#### Source of protein

Porcine Tg is purified from thyroid glands.

Tg protein is purified to > 95% (Mol wt ~660 kda; subunit ~330 kda). It is supplied lyophilized in a buffer (0.02M NaHCO<sub>3</sub>) in vials of 1 mg or other sizes indicated on the vial. Reconstitute lyophilized protein in a buffer (>pH 7.0 containing 0.15M NaCl).

#### Form and Storage

<b>Form:</b>	Freeze-dried powder
<b>Solubility:</b>	PBS or dilute buffer (>pH 7.0)
<b>Stability:</b>	Store at -20° C (-4° F)
<b>Mol wt</b>	~660 Kda (~330 kda subunit)

The powdered AP should be stored in the freezer (-20 °C). If properly stored, these products have a shelf life of at least two years. Solutions lose <2 % of their activity per week if stored at -20 °C.

#### Recommended usage

-As a carrier protein for conjugating small peptides, haptens or proteins to increase antigenicity. It has large number of tyrosine residues and other amino acids (Lysine, glutamic and aspartic acid) for coupling.

-As antigens for ELISA, western

-for affinity column preparation to enrich or remove human anti-Tg antibodies from serum or plasma

Optimum concentrations for a given application must be determined by the user

#### For in vitro research use only

#### Related Material available for ADI

Catalog#	ProdDescription
MDMA15-N-1	MDMA-Bovine thyroglobulin conjugate for ELISA/Western
THGL15-N-1	Human Thyroglobulin (Tg) protein, purified
THGL15-N-10	Human Thyroglobulin (Tg) protein, purified
THGL16-N-10	Porcine Thyroglobulin (Tg) protein, purified (for use as carrier protein)
THGL16-N-100	Porcine Thyroglobulin (Tg) protein, purified (for use as carrier protein)
THGL11-M	Mouse monoclonal anti-human Thyroglobulin (Tg) protein IgG
THGL12-A	Anti-human Thyroglobulin (Tg) protein IgG
THGL17-N-10	Bovine Thyroglobulin (Tg) protein, purified (>95%)
THGL17-N-100	Bovine Thyroglobulin (Tg) protein, purified (>95%)
3300-361-HGP	Human Anti-thyroglobulin (TG) IgG positive control serum (>5000-2000 u/ml)
3300-362-HGP	Human Anti-thyroglobulin (TG) IgM positive control serum (>1000-5000 u/ml)
3300-360-TGG	Human Anti-thyroglobulin (TG) IgG ELISA kit, 96 tests, Quantitative

THGL16-N-10-100 160219SV

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