

# Human SerpinA7 / TBG Protein (His Tag)

Catalog Number: 10993-H08H



**Sino Biological Inc.**

Biological Solution Specialist

## General Information

### Gene Name Synonym:

TBG; C730040N12Rik; Tbg

### Protein Construction:

A DNA sequence encoding the human SERPINA7 (NP\_000345.2) (Met 1-Ala 415) was expressed, fused with a polyhistidine tag at the C-terminus.

**Source:** Human

**Expression Host:** Human Cells

## QC Testing

**Purity:** > 97 % as determined by SDS-PAGE

### Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Ala 21

### Molecular Mass:

The secreted recombinant human SERPINA7 comprises 406 amino acids and has a predicted molecular mass of 45.5 kDa. As a result of glycosylation, it migrates as an approximately 55-60 kDa band in SDS-PAGE under reducing conditions.

### Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

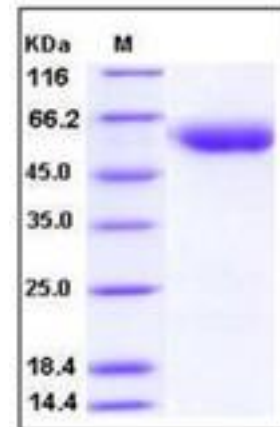
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

Thyroxine-binding globulin, also known as T4-binding globulin, Serpin A7 and TBG, is a secreted protein which belongs to the serpin family. TBG is synthesized primarily in the liver as a 54 kDa protein. TBG is genomically a serpin, although it has no inhibitory function like many other members of this class of proteins. TBG binds thyroid hormone in circulation. It is one of three proteins (along with transthyretin and albumin) responsible for carrying the thyroid hormones thyroxine (T4) and 3,5,3'-triiodothyronine (T3) in the bloodstream. Of these three proteins, TBG has the highest affinity for T4 and T3, but is present in the lowest concentration. Despite its low concentration, TBG carries the majority of T4 in serum. Due to the very low serum concentration of T4 and T3, TBG is rarely more than 25% saturated with its ligand. Unlike transthyretin and albumin, TBG has a single binding site for T4/T3. TBG tests are sometimes used in finding the reason for elevated or diminished levels of thyroid hormone.

## References

1. Flink I.L., *et al.*, (1986), Complete amino acid sequence of human thyroxine-binding globulin deduced from cloned DNA: close homology to the serine antiproteases. *Proc. Natl. Acad. Sci. U.S.A.* 83:7708-7712.
2. Akbari M.T., *et al.*, (1993), The structure of the human thyroxine binding globulin (TBG) gene. *Biochim. Biophys. Acta* 1216:446-454.
3. Hayashi Y., *et al.*, (1993), Human thyroxine-binding globulin gene: complete sequence and transcriptional regulation. *Mol. Endocrinol.* 7:1049-1060.

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