



## TBG (G-15): sc-34331

### BACKGROUND

The serine proteinase inhibitors (serpins) compose a superfamily of proteins with a diverse set of functions, including the control of blood coagulation, complement activation, programmed cell death and development. Serpins are secreted glycoproteins that contain a stretch of peptide that mimics a true substrate for a corresponding serine protease. Serpin family members include thyroxine-binding globulin precursor (TBG). TBG is a serum protein that transports thyroxine, carrying approximately 75% of circulating T4. Inherited defects in TBG are associated with three phenotypes based on the level of TBG in serum of affected hemizygous males: complete TBG deficiency (TBG-CD), partial TBG deficiency (TBG-PD) and TBG excess (TBG-E). TBG is expressed by the liver and secreted in plasma.

### REFERENCES

1. Marshall, J.S., et al. 1969. Studies on human thyroxine-binding globulin (TBG). I. Purification of TBG and immunologic studies on the relationship between TBG from normal persons and those with TBG "deficiency." J. Clin. Invest. 48: 508-515.
2. Rivas, M.L., et al. 1971. Genetic variants of thyroxine-binding globulin (TBG). Birth Defects Orig. Artic. Ser. 7: 34-41.
3. Omenn, G.S. 1971. Studies of serum thyroxine-binding globulin (TBG). Birth Defects Orig. Artic. Ser. 7: 42.
4. Wahner, H.W., et al. 1971. Thyroid overactivity and TBG deficiency simulating "T3 hyperthyroidism." J. Clin. Endocrinol. Metab. 33: 93-97.
5. Marshall, J.S., et al. 1971. Studies on thyroxine-binding globulin (TBG). 3. Some physical characteristics of TBG and its interaction with thyroxine. Arch. Biochem. Biophys. 146: 76-83.
6. Bhatkar, S.V., et al. 2004. Thyroid hormone binding protein abnormalities in patients referred for thyroid disorders. Indian J. Med. Res. 120: 160-165.
7. Lanting, C.I., et al. 2005. Clinical effectiveness and cost-effectiveness of the use of the thyroxine/thyroxine-binding globulin ratio to detect congenital hypothyroidism of thyroidal and central origin in a neonatal screening program. Pediatrics 116: 168-173.
8. van den Beld, A.W., et al. 2005. Thyroid hormone concentrations, disease, physical function and mortality in elderly men. J. Clin. Endocrinol. Metab. 90: 6403-6409.
9. McKinnon, B., et al. 2005. Synthesis of thyroid hormone binding proteins transthyretin and albumin by human trophoblast. J. Clin. Endocrinol. Metab. 90: 6714-6720.

### CHROMOSOMAL LOCATION

Genetic locus: SERPINA7 (human) mapping to Xq22.2; Serpina7 (mouse) mapping to X F1.

### SOURCE

TBG (G-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of TBG of mouse origin.

### PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-34331 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

TBG (G-15) is recommended for detection of TBG of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TBG siRNA (m): sc-45383.

Molecular Weight of TBG: 49-50 kDa.

Positive Controls: mouse liver extract: sc-2256 or c4 cell lysate.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

### RESEARCH USE

For research use only, not for use in diagnostic procedures.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.