abcam

ab280954

Anti-Thyroxine Binding Globulin antibody [EPR24453-121]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR24453-121
Purification technique	Affinity purification Protein A
Concentration	0.592 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/300
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information SERPINA7

Function	Major thyroid hormone transport protein in serum.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Thyroxine Binding Globulin (TBG) also called globulin 23 is a glycoprotein that binds thyroid hormones primarily thyroxine (T4) and triiodothyronine (T3). It facilitates the transport of these hormones through the bloodstream to various tissues. This binding globulin has a molecular weight of approximately 54 kDa. TBG is predominantly expressed in the liver and is an essential component within the circulatory system for hormone regulation. Although there is no substance called 'globulin green' TBG plays an important role in maintaining the systemic balance of thyroid hormones.
Biological function summary	The thyroxine-binding globulin helps maintain adequate levels of thyroid hormones in circulation ensuring a ready reserve supply to target tissues. TBG acts as a carrier protein and does not form part of a larger complex. It provides stability to the hormones and prevents their premature clearance from the bloodstream. Without it the availability and functionality of thyroid hormones within the body would be compromised affecting metabolic and growth functions.
Pathways	Thyroxine-binding globulin is critical in the thyroid hormone signaling pathway. This pathway regulates metabolism growth and development through the action of thyroid hormones. TBG is closely related to other hormone-binding proteins such as transthyretin and albumin which also participate in thyroid hormone transport albeit with different affinities. Its presence ensures that these hormones remain available for cellular uptake and action within various tissues influencing energy expenditure and developmental processes.
Associated diseases and disorders	The function and levels of thyroxine-binding globulin have significant implications in conditions like hypothyroidism and hyperthyroidism. Altered TBG levels either due to genetic variations or external factors can lead to abnormal blood concentrations of thyroid hormones affecting growth and metabolism. In such disorders the interaction between TBG and thyroid hormones becomes critical. TBG levels can be influenced by other proteins like sex hormone-binding globulin

(SHBG) which may reflect changes in the hormone-binding protein landscape during disease states contributing to dysregulated hormonal balance.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

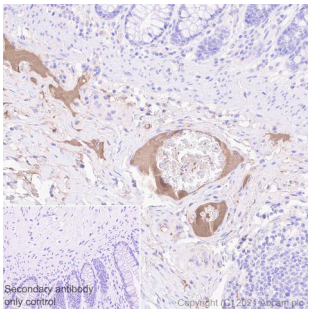
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

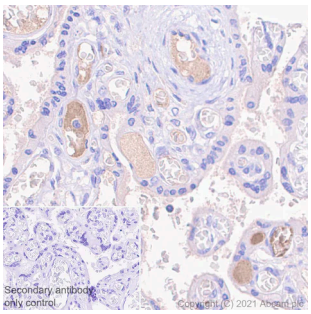
8 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thyroxine Binding Globulin antibody [EPR24453-121] (ab280954)

Immunohistochemical analysis of paraffin-embedded Human colon tissue labelling Thyroxine Binding Globulin with ab280954 at 1/300 (5.92 ug/ml) dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on the plasma in human colon. The section was incubated with ab280954 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

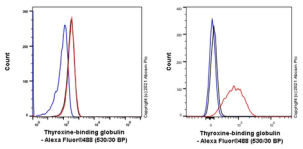


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thyroxine Binding Globulin antibody [EPR24453-121] (ab280954)

Thyroxine Binding Globulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Thyroxine Binding Globulin antibody

Immunohistochemical analysis of paraffin-embedded Human placenta tissue labelling Thyroxine Binding Globulin with ab280954 at 1/300 (5.92 ug/ml) dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on the plasma in human placenta. The section was incubated with ab280954 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

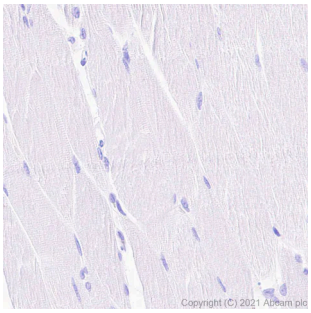
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Flow Cytometry (Intracellular) - Anti-Thyroxine Binding Globulin antibody [EPR24453-121] (ab280954)

Thyroxine Binding Globulin Flow Cytometry (Intracellular) staining using rabbit Anti-Thyroxine Binding Globulin antibody

Flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized HeLa (Human cervix adenocarcinoma epithelial cell, Left) / HepG2 (Human hepatocellular carcinoma epithelial cell, Right) cells labelling Thyroxine Binding Globulin with ab280954 at 1/50 dilution (1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody. **Negative control**: HeLa cells.

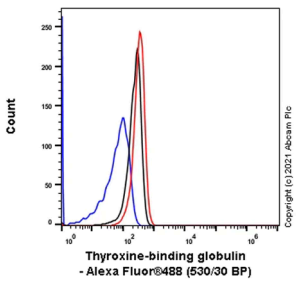


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thyroxine Binding Globulin antibody [EPR24453-121] (ab280954)

Thyroxine Binding Globulin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Thyroxine Binding Globulin antibody

Immunohistochemical analysis of paraffin-embedded Human skeletal muscle tissue labelling Thyroxine Binding Globulin with ab280954 at 1/300 (5.92 ug/ml) dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). **Negative control**: no staining on human skeletal muscle (PMID: 8143919). The section was incubated with ab280954 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

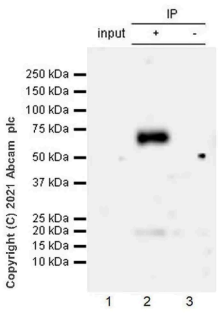
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Flow Cytometry (Intracellular) - Anti-Thyroxine Binding Globulin antibody [EPR24453-121] (ab280954)

Thyroxine Binding Globulin Flow Cytometry (Intracellular) staining using rabbit Anti-Thyroxine Binding Globulin antibody

Flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized HEK-293T (Human embryonic kidney epithelial cell) cells labelling Thyroxine Binding Globulin with ab280954 at 1/50 dilution (1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody. **Negative control**: HEK-293T cells.



Immunoprecipitation - Anti-Thyroxine Binding Globulin antibody [EPR24453-121] (ab280954)

Thyroxine Binding Globulin was immunoprecipitated from 0.35 mg HepG2 (human hepatocellular carcinoma epithelial cell) supernatant with ab280954 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab280954 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution.
Lane 1: HepG2 (human hepatocellular carcinoma epithelial cell) supernatant 10 µl

Lane 2: ab280954 IP in HepG2 supernatant

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab280954 in HepG2 supernatant

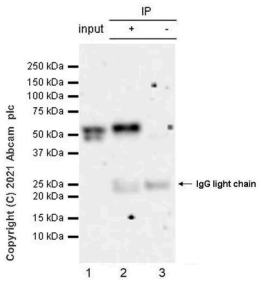
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 minutes.

All lanes:
Immunoprecipitation - Anti-Thyroxine Binding Globulin antibody [EPR24453-121] (ab280954)

Predicted band size: 46 kDa

Observed band size: 54 kDa



Immunoprecipitation - Anti-Thyroxine Binding Globulin antibody [EPR24453-121] (ab280954)

Thyroxine Binding Globulin was immunoprecipitated from 0.35 mg Human lung tissue lysate with ab280954 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab280954 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: Human lung tissue lysate 10 ug

Lane 2: ab280954 IP in Human lung tissue lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab280954 in Human lung tissue lysate

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 minutes.

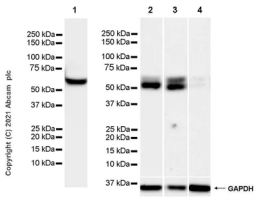
This blot was developed using a higher sensitivity ECL substrate.

All lanes:

Immunoprecipitation - Anti-Thyroxine Binding Globulin antibody [EPR24453-121] (ab280954)

Predicted band size: 46 kDa

Observed band size: 49 kDa, 54 kDa



Western blot - Anti-Thyroxine Binding Globulin antibody [EPR24453-121] (ab280954)

Thyroxine Binding Globulin Western blot staining using rabbit Anti-Thyroxine Binding Globulin antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST. Samples are non-boiled as boiling may cause protein aggregates. The MW observed is consistent with the literature (PMID: 12107243). Thyroxine-binding globulin is highly expressed in plasma. (PMID:820495, 8106612). Bands of 54KDa and 49KDa respectively represent the full length and endogenous cleavage form. Exposure time: Lane 1: 15 seconds Lane 2: 37 seconds Lane 3, 4: 109 seconds.
All lanes:
Western blot - Anti-Thyroxine Binding Globulin antibody [EPR24453-121] (ab280954) at 1/1000 dilution

Lane 1:
Human plasma at 20 µL

Lane 2:
Human small intestine tissue lysate at 40 µg

Lane 3:
Human lung tissue lysate 40ug at 40 µg

Lane 4:
Human skeletal muscle lysate at 40 µg

Secondary

Lane 1:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Lanes 2 - 4:
VeriBlot for IP secondary antibody(HRP)(ab131366) at 1/1000 dilution

Predicted band size: 46 kDa

Observed band size: 49 kDa, 54 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.