abcam

ab229449

Anti-Thyroglobulin antibody [EPR9730] - Low endotoxin, Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR9730
Purification technique	Affinity purification Protein A
Concentration	1.07 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-

Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information Thyroglobulin

Function	Acts as a substrate for the production of iodinated thyroid hormones thyroxine (T4) and triiodothyronine (T3) (PubMed:17532758, PubMed:32025030). The synthesis of T3 and T4 involves iodination of selected tyrosine residues of TG/thyroglobulin followed by their oxidative coupling in the thyroid follicle lumen (PubMed:32025030). Following TG re-internalization and lysosomal-mediated proteolysis, T3 and T4 are released from the polypeptide backbone leading to their secretion into the bloodstream (PubMed:32025030). One dimer produces 7 thyroid hormone molecules (PubMed:32025030).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab229449 is the carrier-free version of ab156008.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

What does low endotoxin mean?
Our low endotoxin, azide-free formats have low endotoxin level (1 EU/mg, determined by the TAL assay) and are free from azide, to achieve consistent experimental results in functional assays.

Supplementary info

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

Activity summary	Thyroglobulin often abbreviated as Tg is a glycoprotein with a molecular mass of approximately 660 kDa. It is expressed primarily in the thyroid gland particularly within the follicular cells. This protein serves as a precursor for thyroid hormones such as thyroxine (T4) and triiodothyronine (T3). High thyroglobulin levels in the bloodstream can indicate altered thyroid function and clinicians frequently measure these levels for diagnostic purposes. Researchers have developed specific anti-thyroglobulin antibodies to facilitate the study and measurement of this protein in various contexts.
Biological function summary	Thyroglobulin plays a critical role in the synthesis and storage of thyroid hormones. It acts as a scaffold for iodination and hormone synthesis within the colloid of thyroid follicles. Thyroglobulin is not part of a protein complex; rather it undergoes iodination to form hormone precursors that later convert into active hormones. Anti-thyroglobulin antibodies can be used in research or diagnostic labs to detect the presence or concentration of thyroglobulin in serum samples. These antibodies help in understanding the nuances of thyroid hormone biosynthesis and in monitoring thyroid activity.
Pathways	Thyroglobulin is deeply involved in the thyroid hormone synthesis pathway a fundamental part of the endocrine system's operations. This process connects closely with the iodine metabolism pathway as iodine plays an essential role in hormone production. Thyroglobulin interacts indirectly with proteins like thyroid peroxidase which catalyzes iodination of thyroglobulin. The synthesis and release of thyroid hormones proceed through a carefully orchestrated sequence affecting many physiological processes including metabolism growth and development.
Associated diseases and disorders	Thyroglobulin has associations with conditions such as thyroid cancer and autoimmune thyroid diseases. For instance elevated serum thyroglobulin can serve as a tumor marker in differentiated thyroid cancer. Anti-thyroglobulin antibodies are often present in autoimmune thyroid diseases like Hashimoto's thyroiditis where the body's immune system mistakenly targets thyroid proteins. Thyroid peroxidase antibodies are also common in these disorders indicating a shared autoimmune response against thyroid-specific antigens. Understanding these relationships aids in the diagnosis and management of thyroid-related conditions.

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

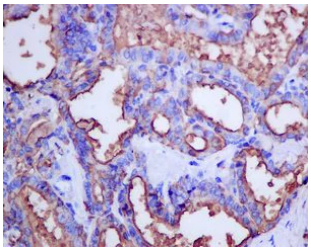
We do not recommend this combination. It is not covered by our product promise.

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.

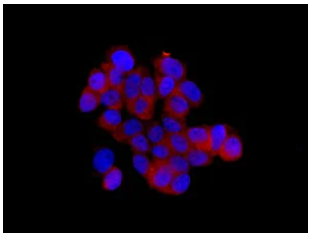
6 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thyroglobulin antibody [EPR9730] - Low endotoxin, Azide free (ab229449)

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

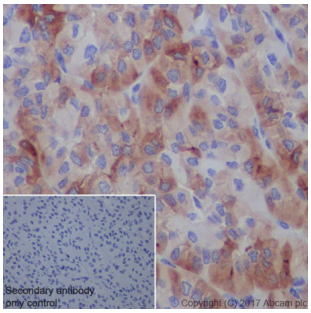
This IHC data was generated using the same anti-Thyroglobulin antibody clone EPR9730 in a different buffer formulation (cat# ab156008).
Immunohistochemical analysis of paraffin embedded Human thyroid gland follicular carcinoma tissue labeling Thyroglobulin with unpurified ab156008 antibody at 1/250.



Immunocytochemistry/ Immunofluorescence - Anti-Thyroglobulin antibody [EPR9730] - Low endotoxin, Azide free (ab229449)

Thyroglobulin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Thyroglobulin antibody

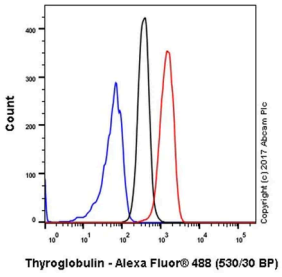
This ICC/IF data was generated using the same anti-Thyroglobulin antibody clone EPR9730 in a different buffer formulation (cat# ab156008).
Immunofluorescent analysis of TT cells labeling Thyroglobulin with unpurified ab156008 at 1/50.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thyroglobulin antibody [EPR9730] - Low endotoxin, Azide free (ab229449)

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

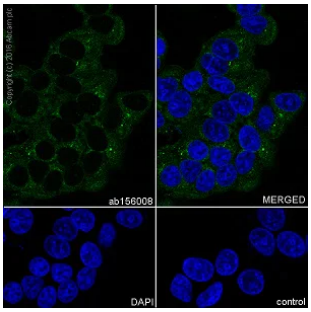
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human thyroid carcinoma tissue sections labeling Thyroglobulin with Purified ab156008 at 1:500 dilution (1.36 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer pH 9.0). Tissue was counterstained with Hematoxylin. ImmunoHistoProbe one step HRP Polymer (ready to use) secondary antibody was used at 1:0 dilution. PBS instead of the primary antibody was used as the negative control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS BSA glycerol and sodium azide (ab156008).



Flow Cytometry (Intracellular) - Anti-Thyroglobulin antibody [EPR9730] - Low endotoxin, Azide free (ab229449)

Thyroglobulin Flow Cytometry (Intracellular) staining using rabbit Anti-Thyroglobulin antibody

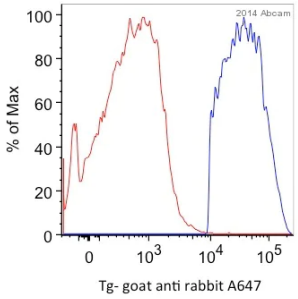
Intracellular Flow Cytometry analysis of TT (Human thyroid carcinoma epithelial cell) cells labeling Thyroglobulin with purified ab156008 at 1/70 dilution (10 ï¿½g/ml) (red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluorï¿½ 488) secondary antibody was used at 1/2000 dilution. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab156008).



Immunocytochemistry/ Immunofluorescence - Anti-Thyroglobulin antibody [EPR9730] - Low endotoxin, Azide free (ab229449)

Thyroglobulin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Thyroglobulin antibody

Immunocytochemistry/ Immunofluorescence analysis of TT (Human thyroid carcinoma epithelial cell) cells labeling Thyroglobulin with Purified ab156008 at 1:100 dilution. Cells were fixed in 100% Methanol. ab150077 Goat anti rabbit IgG(Alexa Fluor® 488) was used as the secondary antibody at 1:1000 dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS BSA glycerol and sodium azide (ab156008).



This image is courtesy of a customer review submitted by Sanjay Gawade.

Flow Cytometry (Intracellular) - Anti-Thyroglobulin antibody [EPR9730] - Low endotoxin, Azide free (ab229449)

Thyroglobulin Flow Cytometry (Intracellular) staining using rabbit Anti-Thyroglobulin antibody

Unpurified ab156008 staining Thyroglobulin in mouse thyroid cells by intracellular flow cytometry. Cells were fixed with formaldehyde and permeabilized with permeabilization buffer. The sample was incubated with the primary antibody (1/100 in FACS buffer) for 30 minutes at 24ï¿½C. An Alexa Fluorï¿½ 647-conjugated goat anti-rabbit IgG (1/2000) was used as the secondary antibody. Gating Strategy: Epithlial cells. Red line shows unlabeled sample, blue line shows labeled sample.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab156008).

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