abcam

ab12500

Anti-Thyroid Peroxidase/TPO antibody [MoAb47]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.3 - 7.5 Preservative: 0.05% Sodium azide Constituents: Tissue culture supernatant
Form	Liquid
Clonality	Monoclonal
Immunogen	Native Full Length Protein corresponding to Human Thyroid peroxidase. Database link P07202
Clone number	MoAb47
Purity	Tissue culture supernatant

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/10.00000 - 1/25.00000
Notes	Primary incubation for 30 min at room temperature. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information Thyroid peroxidase

Function	Iodination and coupling of the hormonogenic tyrosines in thyroglobulin to yield the thyroid hormones T(3) and T(4).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Supplementary info

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

Activity summary	Thyroid Peroxidase (TPO) also known as thyroperoxidase is an enzyme with a molecular mass of around 105 kDa. It is expressed in the thyroid gland's follicular cells. TPO plays a mechanical role in the synthesis of thyroid hormones by catalyzing iodination and coupling reactions needed to produce triiodothyronine (T3) and thyroxine (T4). These hormones are essential for regulating metabolism growth and development. The activity of TPO is an important step in thyroid hormone production.
Biological function summary	TPO participates in the thyroid's hormone biosynthesis pathway. It forms a part of the multi-enzyme complex that includes thyroglobulin and iodide. The enzyme facilitates the iodination of tyrosine residues on thyroglobulin and the coupling of iodotyrosines important for creating active thyroid hormones. TPO's enzymatic function is important for maintaining appropriate levels of circulating T3 and T4 impacting various physiological processes in the body.
Pathways	TPO contributes to the thyroid hormone synthesis pathway which is a critical pathway for metabolic regulation. It works in close association with other proteins such as thyroglobulin and sodium/iodide symporter (NIS) to ensure efficient thyroid hormone production. TPO's involvement in these pathways indicates its importance in the endocrine system's normal function and homeostasis.
Associated diseases and disorders	TPO is often associated with autoimmune thyroid diseases like Hashimoto's thyroiditis and Graves' disease. High TPO antibodies such as anti-TPO antibodies are commonly detected in these conditions indicating an autoimmune response against the thyroid. The presence of high anti-thyroid peroxidase antibodies can lead to the destruction of thyroid tissue often resulting in hypothyroidism. TPO's connection to these diseases highlights its role in autoimmune conditions affecting thyroid function.

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

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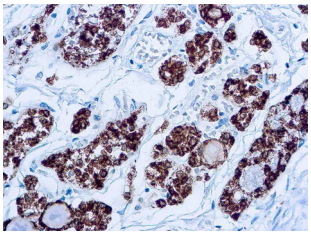
1 product image



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thyroid Peroxidase/TPO antibody [MoAb47] (ab12500)

Formalin-fixed, paraffin-embeded human thyroid tissue stained for Thyroid Peroxidase/TPO using ab12500 at 1/10 dilution in immunohistochemical analysis.

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