Thyroperoxidase (A-5): sc-376876

BACKGROUND
The synthesis of thyroid hormones is an oxidative process that produces reactive oxygen species and requires Thyroperoxidase (TPO), a hemoprotein that is one of the major autoantigens involved in autoimmune thyroid diseases. Thyroperoxidase is a 933 amino acid, type I transmembrane glycoprotein that plays a key role in thyroid hormone synthesis and autoimmune. TPO catalyzes the iodination of proteins, therefore causing iodide retention within thyroid cells. The ecto-domain of Thyroperoxidase includes a large N-terminal myeloperoxidase-like domain, followed by a complement control protein domain and an epidermal growth factor-like domain. Thyroperoxidase also mediates the organization and intracellular retention of radiiodide, which may lead to rapid tumor cell death. Mutations of the Thyroperoxidase gene commonly lead to goitrous congenital hypothyroidism, the most severe and frequent abnormality in thyroid iodide organization defect (IOD), in which iodide in the thyroid gland cannot be oxidized and/or bound to the protein.

REFERENCES

CHROMOSOMAL LOCATION
Genetic locus: TPO (human) mapping to 2p25.3; Tpo (mouse) mapping to 12 A2.

SOURCE
Thyroperoxidase (A-5) is a mouse monoclonal antibody raised against amino acids 21-160 mapping within an N-terminal extracellular domain of Thyroperoxidase of human origin.

PRODUCT
Each vial contains 200 µg IgG2a kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Thyroperoxidase (A-5) is available conjugated to agarose (sc-376876 AC), 500 µg/0.25 ml agarose in 1 ml, for IF; to HRP (sc-376876 HRP), 200 µg/ml, for WB; to either phycoerythrin (sc-376876 PE), fluorescein (sc-376876 FITC), Alexa Fluor® 488 (sc-376876 AF488), Alexa Fluor® 546 (sc-376876 AF546), Alexa Fluor® 594 (sc-376876 AF594) or Alexa Fluor® 647 (sc-376876 AF647), 200 µg/ml, for WB (RGB), IF, HICP and FCM; and to either Alexa Fluor® 680 (sc-376876 AF680) or Alexa Fluor® 790 (sc-376876 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

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

APPLICATIONS
Thyroperoxidase (A-5) is recommended for detection of Thyroperoxidase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 Thyroperoxidase siRNA (h): sc-61684, Thyroperoxidase siRNA (m): sc-61685, Thyroperoxidase shRNA Plasmid (h): sc-61684-SH, Thyroperoxidase shRNA Plasmid (m): sc-61685-SH, Thyroperoxidase shRNA (h) Lentiviral Particles: sc-61684-V and Thyroperoxidase shRNA (m) Lentiviral Particles: sc-61685-V.

Molecular Weight of Thyroperoxidase: 100 kDa.

Positive Controls: Thyroperoxidase (m): 293 Lysate: sc-179600.

DATA

SELECT PRODUCT CITATIONS

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