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 autoimmunity. Thyroperoxidase 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 organification and intracellular retention of radioiodide, 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 organification 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 (MoAb47) is a mouse monoclonal antibody raised against Thyroperoxidase purified from thyroid microsomes of human origin.

PRODUCT

Each vial contains 200 µg IgG1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Thyroperoxidase (MoAb47) is recommended for detection of Thyroperoxidase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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: human thyroid extract: sc-363782.

STORAGE

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

DATA

Thyroperoxidase (MoAb47): sc-58432. Western blot analysis of Thyroperoxidase expression in human thyroid tissue extract.

Thyroperoxidase (MoAb47): sc-58432. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing membrane and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS


RESEARCH USE

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

See Thyroperoxidase (A-5): sc-376876 for Thyroperoxidase antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.