

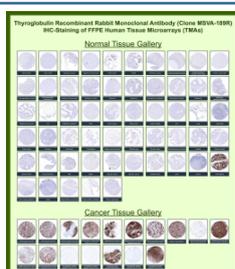
Colloid Protein Antibody / Thyroglobulin [clone MSVA-189R] (V6119)

Catalog No.	Formulation	Size
V6119-100UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V6119-20UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug

Recombinant **RABBIT MONOCLONAL**

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Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	MSVA-189R
UniProt	P01266
Localization	Secreted
Applications	Immunohistochemistry (FFPE) : 1:100-1:200
Limitations	This Colloid Protein/Thyroglobulin antibody is available for research use only.



Immunohistochemistry analysis of Colloid Protein / Thyroglobulin antibody in human normal and cancer tissue microarrays (clone MSVA-189R). FFPE tissue microarrays demonstrate strong HRP-DAB brown cytoplasmic and luminal staining in normal thyroid gland, with intense chromogenic signal highlighting follicular epithelial cells and colloid material. Non-thyroid normal tissues show minimal to absent staining, consistent with the tissue-restricted expression pattern of Thyroglobulin. In cancer tissues, strong staining is observed in well differentiated thyroid carcinomas, while reduced or absent signal is seen in poorly differentiated or non-thyroid malignancies. The staining distribution aligns with known Thyroglobulin expression patterns and publicly available expression data, supporting specificity for differentiated thyroid epithelium.

Description

Colloid Protein antibody recognizes Thyroglobulin, a large secreted glycoprotein encoded by the TG gene and synthesized exclusively by thyroid follicular epithelial cells. Thyroglobulin is the principal protein component of thyroid colloid and functions as the precursor for thyroid hormone biosynthesis. Within thyroid follicles, this colloid protein provides the structural framework for iodination of tyrosine residues and subsequent coupling reactions that generate thyroxine and triiodothyronine, hormones essential for metabolic regulation and systemic energy balance.

Thyroglobulin is synthesized in the rough endoplasmic reticulum as a high molecular weight precursor and undergoes folding, glycosylation, and dimerization in the Golgi apparatus before secretion into the follicular lumen. In the extracellular colloid space, specific tyrosine residues are iodinated under the catalytic activity of thyroid peroxidase. Upon stimulation by thyroid stimulating hormone, iodinated Thyroglobulin is internalized back into follicular cells and proteolytically cleaved within lysosomes to release active thyroid hormones into the bloodstream. This coordinated synthesis, storage, and processing pathway highlights the essential endocrine role of Thyroglobulin.

Expression of Thyroglobulin is highly restricted to differentiated thyroid tissue. In research settings, Colloid Protein antibody is widely used to evaluate thyroid lineage differentiation and follicular epithelial phenotype. Well differentiated thyroid carcinomas, including papillary and follicular subtypes, typically retain Thyroglobulin expression, whereas poorly differentiated or anaplastic thyroid tumors may demonstrate reduced or absent expression. As such, Thyroglobulin serves as an important marker in studies of thyroid tumor differentiation and progression.

Subcellularly, Thyroglobulin localizes to the cytoplasm of thyroid follicular epithelial cells and accumulates in large quantities within the follicular lumen as colloid material. Because of its tissue-restricted expression pattern and central function in hormone production, Colloid Protein antibody is a valuable research tool for investigating thyroid development, endocrine signaling pathways, and mechanisms of thyroid carcinogenesis. A Colloid Protein antibody can be used in research applications to detect Thyroglobulin protein expression in thyroid tissue models and studies of endocrine disease.

Application Notes

1. Optimal dilution of the Colloid Protein/Thyroglobulin antibody should be determined by the researcher.
2. This Colloid Protein/Thyroglobulin antibody is recombinantly produced by expression in CHO cells.
3. Manual Protocol: Freshly cut sections should be used (less than 10 days between cutting and staining). Heat-induced antigen retrieval for 5 minutes in an autoclave at 121°C in pH 7.8 Target Retrieval Solution buffer. Apply the antibody at a dilution of 1:150 at 37°C for 60 minutes. Visualization of bound antibody by the EnVision Kit (Dako, Agilent) according to the manufacturer's directions.

Immunogen

Recombinant full-length human Thyroglobulin protein was used as the immunogen for the Colloid Protein/Thyroglobulin antibody.

Storage

Colloid Protein/Thyroglobulin antibody with sodium azide - store at 2 to 8°C; antibody without sodium azide - store at -20 to -80°C.