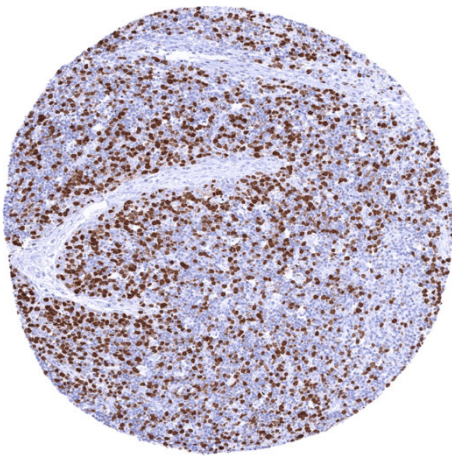


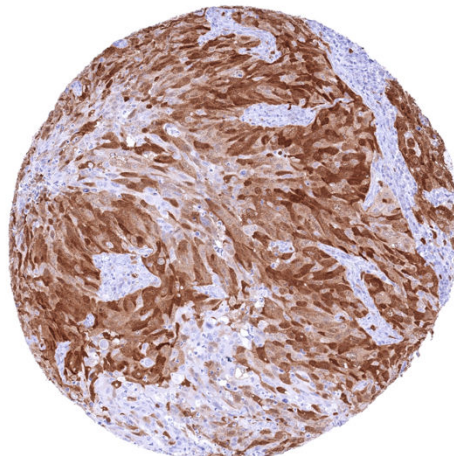
Anti- TYMS Antibody HMV305 / Recombinant Rabbit monoclonal

Human SwissProt	P04818
Human Gene Symbol	TYMS
Synonyms	thymidylate synthetase ,HST422 ,TMS ,TS
Specificity	TYMS
Immunogen	Recombinant protein encompassing a sequence within the center region of human Thymidylate synthase. The exact sequence is proprietary.
Isotype	Rabbit / IgG
Species Reactivity	Human

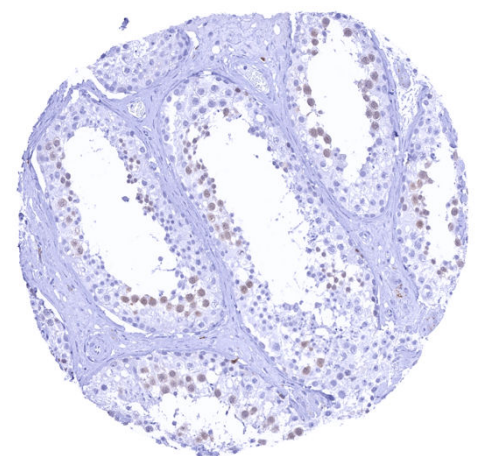
Localization	Intracellular
Storage & Stability	Antibody with azide – store at 2 to 8 C. Antibody without azide – store at -20 to -80 C. Antibody is stable for 24 months. Non-hazardous. No MSD required.
Supplied As	Purified antibody from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with <1% BSA & <0.1% azide. Antibody concentrate is optimized for dilution within dilution range using commercially available antibody diluent for IHC.
Positive Control	Lymph node: A strong TYMS staining should be seen in a fraction of lymphocytic cells, especially in germinal centres.
Negative Control	Prostate: TYMS staining should be absent in normal epithelial cells.



Strong TYMS staining of a large fraction of thymic lymphocytes



Urothelial carcinoma of the urinary bladder (Invasive) with moderate to strong TYMS staining of tumor cells



Weak to moderate, nuclear and cytoplasmic TYMS staining of spermatocytes

Biology

Thymidylate synthase (TS, TYMS) is a 32-35kD enzyme which is coded by the TYMS gene at 18p11.32. TYMS catalyzes the conversion of deoxyuridine monophosphate (dUMP) to deoxythymidine monophosphate (dTMP) which is one of the nucleotides forming the DNA. TYMS is essential for DNA synthesis because it represents the only de novo pathway for production of thymidine and it also is the only enzyme in folate metabolism that can oxidize the 5,10-methylenetetrahydrofolate during one-carbon transfer. Therefore, TYMS is critical for regulating the supply of all 4 DNA precursors for DNA replication. In-vitro studies have shown that upregulation of TYMS is sufficient to transform immortalized mammalian cells to a malignant phenotype. TYMS is an important target for several chemotherapeutic drugs including 5-fluorouracil (5-FU). It has been suggested that tumors with low-levels of TYMS may show to a better response to 5-FU than those with high-level expression. In normal tissues, TYMS expression is ubiquitous but too low for detection by immunohistochemistry in most tissues. TYMS expression is highest in thymus, bone marrow, tonsil, lymph nodes and the testis. Among cancers, TYMS expression is highly variable between individual tumors. At least in a fraction of tumors, high TYMS expression occurs in a broad range of different tumor entities.

Potential Research Applications

The diagnostic, prognostic, and predictive role of TYMS expression in tumors and in preneoplastic disease needs to be investigated.

Protocol Suggestions

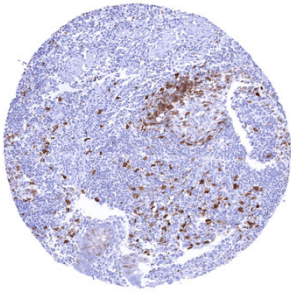
Dilution: 1:150 – 1:200. pH 7,8 is optimal. Freshly cut sections should be used (more than 10 days between cutting and staining deteriorates staining intensity for most antibodies in IHC).

Limitations

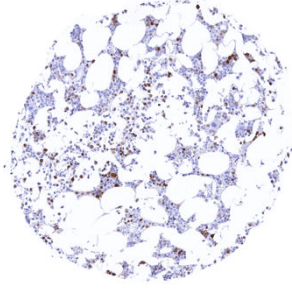
This antibody is available for **research use only** and is not approved for use in diagnostics.

Warranty

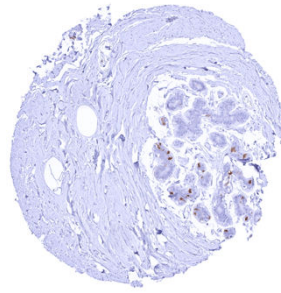
There are no warranties, expressed or implied, which extend beyond this description. MSVA is not liable for any personal injury or economic loss resulting from this product.



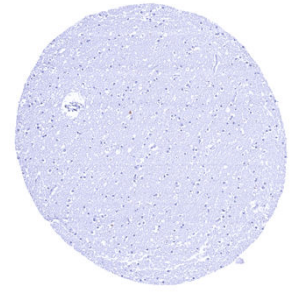
Appendix, mucosa – Weak to moderate, nuclear and cytoplasmic TYMS staining of a fraction of crypt epithelial cells while staining is strong in many lymphocytic cells



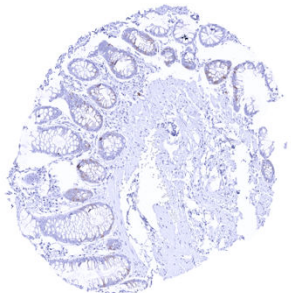
Bone marrow – Moderate to strong, nuclear and cytoplasmic TYMS staining of a large subset of hematopoietic cells



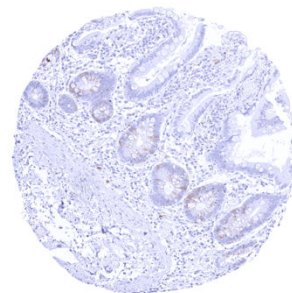
Breast – Strong, nuclear and cytoplasmic TYMS staining of a subset of luminal epithelial cells of breast glands



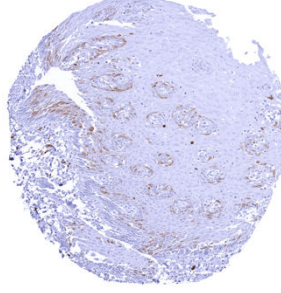
Cerebrum, white matter



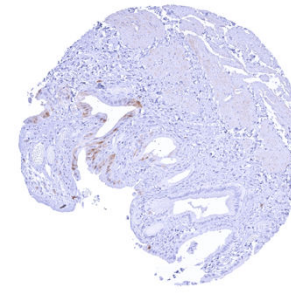
Colon descendens, mucosa – Faint, nuclear and cytoplasmic TYMS staining of a fraction of crypt epithelial cells



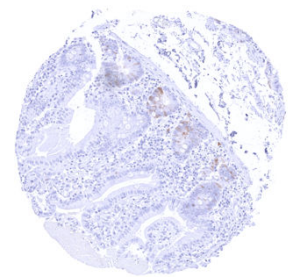
Duodenum, mucosa – Weak, nuclear and cytoplasmic TYMS staining of a fraction of crypt epithelial cells



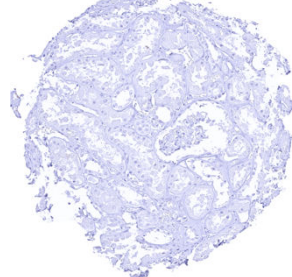
Esophagus, squamous epithelium – Weak to moderate, predominantly nuclear TYMS staining of a subset of suprabasal squamous epithelial cells



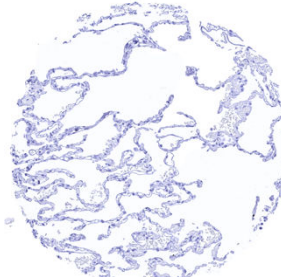
Gallbladder, epithelium – Weak to moderate, nuclear and cytoplasmic TYMS staining of a subset of epithelial cells



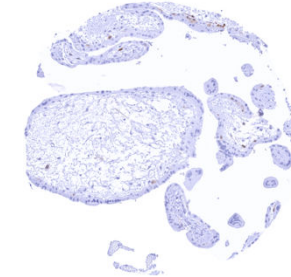
Ileum, mucosa – Weak to moderate, nuclear and cytoplasmic TYMS staining of a fraction of crypt epithelial cells



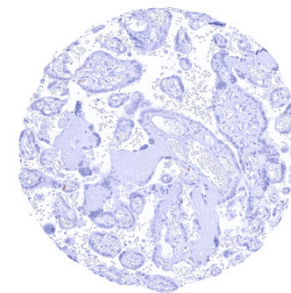
Kidney, cortex



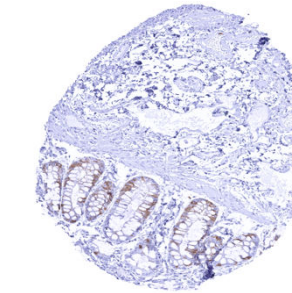
Lung



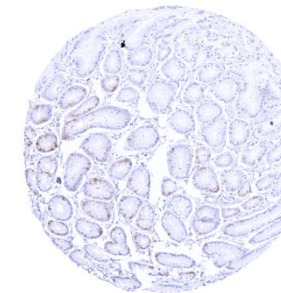
Placenta, early – Variable, weak to strong, nuclear and cytoplasmic TYMS staining of few cells (cytotrophoblast, stromal)



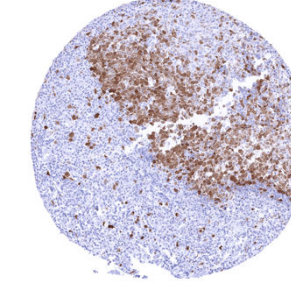
Placenta, mature – TYMS staining is lacking in this sample



Rectum, mucosa – Weak to moderate, nuclear and cytoplasmic TYMS staining of a large subset of crypt epithelial cells



Stomach, antrum – Weak to moderate, nuclear and cytoplasmic TYMS staining of a fraction of epithelial cells



Tonsil – Variable, moderate to strong, nuclear and cytoplasmic TYMS staining of a fraction of lymphocytes, especially in a germinal centre