

**Anti-THYMIDYLATE SYNTHASE (SHEEP) Antibody**  
**Thymidylate Synthase Antibody**  
**Catalog # ASR3831****Specification**

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**Anti-THYMIDYLATE SYNTHASE (SHEEP) Antibody - Product Information**

Host	Sheep
Conjugate	Unconjugated
Target Species	Human
Reactivity	Human
Clonality	Polyclonal
Application	WB, IHC, E, I, LCI
Application Note	This antiserum against Human Thymidylate Synthase (hTS) has been tested in Western Blot and IHC. This antibody is suitable for use in ELISA, immunoprecipitation, and immunofluorescence microscopy. The antibody recognizes the expected additional band corresponding to the ternary complex of hTS-dFUMP-reduced folate in HeLa cells treated with the TS inhibitor 5-FuDR. This event occurs in most human breast, colorectal, gastric, head and neck carcinomas. The antibody recognizes the 36,000 MW hTS. Reactivity in other immunoassays is unknown.
Physical State	Lyophilized
Buffer	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Immunogen	This whole sheep serum was prepared by repeated immunizations with recombinant human Thymidylate Synthase (36 kDa) produced in E.coli.
Reconstitution Volume	2.0 mL
Reconstitution Buffer	Restore with deionized water (or equivalent)
Preservative	0.01% (w/v) Sodium Azide

**Anti-THYMIDYLATE SYNTHASE (SHEEP) Antibody - Additional Information****Gene ID 7298****Other Names**  
7298**Purity**

This antiserum is directed against human Thymidylate Synthase and is useful in determining its presence in various assays. Because inhibition of Thymidylate Synthase prevents DNA synthesis and cell proliferation, the enzyme is an important target for cancer chemotherapeutic drugs, specifically the fluoropyrimidine group of antineoplastic drugs used to treat solid tumors. In

general, this antibody can detect antigen in a variety of human cells and tissues, as well as bacteria, African green monkey, rat and mouse. Somewhat lower dilutions may be required in some non-human cell lines. Anti-Thymidylate Synthase can detect Thymidylate Synthase by immunochemistry in proliferating cell cultures and tissues but does not stain nonproliferating cells. Normal colon mucosa shows weak staining; however, some colorectal cancer specimens show very strong staining.

**Storage Condition**

Store vial at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

**Precautions Note**

This product is for research use only and is not intended for therapeutic or diagnostic applications.

**Anti-THYMIDYLATE SYNTHASE (SHEEP) Antibody - Protein Information**

**Name** TYMS ([HGNC:12441](#))

**Synonyms** TS

**Function**

Catalyzes the reductive methylation of 2'-deoxyuridine 5'- monophosphate (dUMP) to thymidine 5'-monophosphate (dTMP), using the cosubstrate, 5,10- methylenetetrahydrofolate (CH<sub>2</sub>H<sub>4</sub>folate) as a 1- carbon donor and reductant and contributes to the de novo mitochondrial thymidylate biosynthesis pathway.

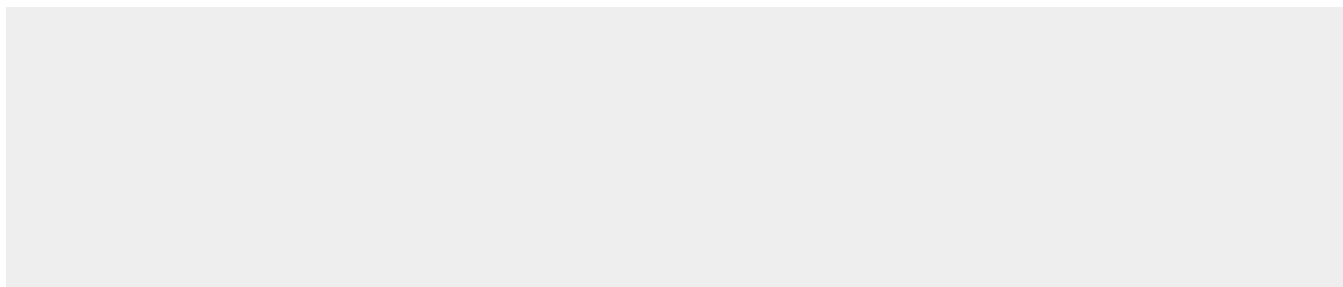
**Cellular Location**

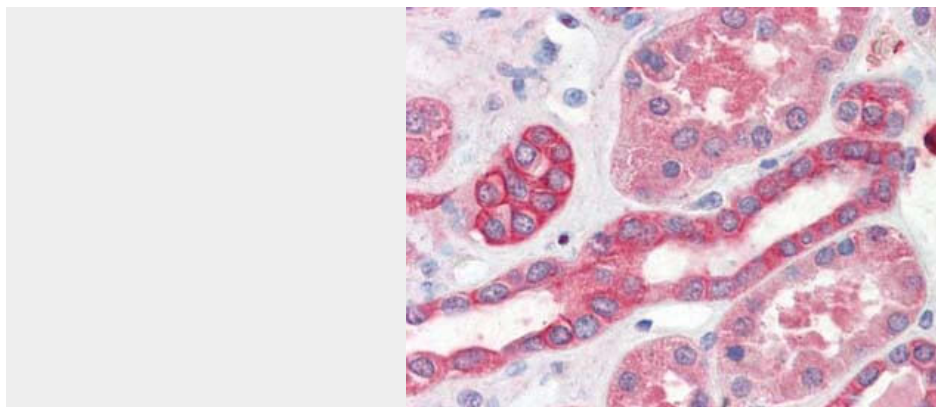
Nucleus. Cytoplasm. Mitochondrion. Mitochondrion matrix. Mitochondrion inner membrane

**Anti-THYMIDYLATE SYNTHASE (SHEEP) Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

**Anti-THYMIDYLATE SYNTHASE (SHEEP) Antibody - Images**



Immunohistochemistry of Thymidylate Synthase antibody. Tissue: human Kidney. Fixation: formalin fixed paraffin embedded. Antigen retrieval: user optimized. Primary antibody: 100-601-199 Thymidylate antibody at 1:100. Secondary antibody: Peroxidase goat anti-sheep at 1:10,000 for 45 min at RT. Image provided courtesy of Andrew Elston, LifeSpan BioSciences, Inc.

#### **Anti-THYMIDYLATE SYNTHASE (SHEEP) Antibody - Background**

Thymidylate synthase catalyzes the methylation of deoxyuridylate to deoxythymidylate using 5,10-methylenetetrahydrofolate (methylene-THF) as a cofactor. This function maintains the dTMP (thymidine-5-prime monophosphate) pool critical for DNA replication and repair. The enzyme has been of interest as a target for cancer chemotherapeutic agents. It is considered to be the primary site of action for 5-fluorouracil, 5-fluoro-2-prime-deoxyuridine, and some folate analogs. Expression of this gene and that of a naturally occurring antisense transcript rTSalpha vary inversely when cell-growth progresses from late-log to plateau phase. Diseases associated with Thymidylate synthase include Rectal Neoplasm and Dihydropyrimidine Dehydrogenase Deficiency. Anti-Thymidylate synthase is useful for researchers interested in Circadian Rhythm, Metabolism and cell cycle research.