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Anti-THYMIDYLATE SYNTHASE (RABBIT) Antibody
Thymidylate Synthase Antibody
Catalog # ASR3680

Specification

Anti-THYMIDYLATE SYNTHASE (RABBIT) Antibody - Product Information

Host	**Rabbit**
Conjugate	**Unconjugated**
Target Species	**Human**
Reactivity	**Human**
Clonality	**Polyclonal**
Application	**WB, IHC, E, I, LCI**
Application Note	**Anti-Thymidylate Synthase has been tested by western blot and is suitable for use in ELISA, immunoprecipitation, immunofluorescence microscopy, immunohistochemistry and immunoblotting. 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	**Liquid (sterile filtered)**
Immunogen	**This whole rabbit serum was prepared by repeated immunizations with recombinant human Thymidylate Synthase (36 kDa) produced in E.coli.**
Preservative	**0.01% (w/v) Sodium Azide**

Anti-THYMIDYLATE SYNTHASE (RABBIT) 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 -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. 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 (RABBIT) 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 (CH2H4folate) 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 (RABBIT) 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 Cytomety
- Cell Culture

Anti-THYMIDYLATE SYNTHASE (RABBIT) Antibody - Images

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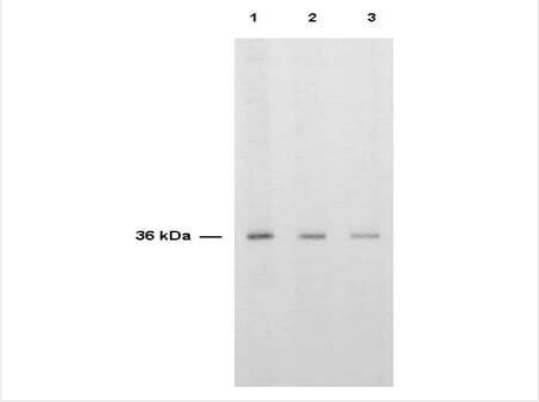

Anti-TS is shown to detect thymidylate synthase present in a HeLa cell extract. Each lane is estimated to contain 4 ug of protein. Lanes 1, 2 and 3 represent 1:500, 1:1,000 and 1:2,000 fold dilutions of the antibody. Detection was made using HRP Goat-a-Rabbit IgG (611-1302) diluted 1:1,000 and color development using TMB (TMBM-100) substrate for approximately 4'.

Anti-THYMIDYLATE SYNTHASE (RABBIT) 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 rTS alpha 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.