

## Anti-Thymidylate Synthase Antibody

Catalog Number: A04320-2

### About TYMS

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.

### Overview

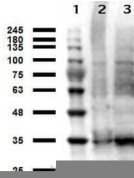
Product Name	Anti-Thymidylate Synthase Antibody
Reactive Species	Human
Description	Boster Bio Anti-Thymidylate Synthase Antibody (Catalog # A04320-2). Tested in WB applications. This antibody reacts with Human.
Application	ELISA, IF, IHC, WB
Clonality	Polyclonal
Formulation	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2, 0.01% (w/v) Sodium Azide
Storage Instructions	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. Expiration date is one (1) year from date of opening. (Ship at ambient temperature.)
Host	Sheep
Uniprot ID	P04818

### Technical Details

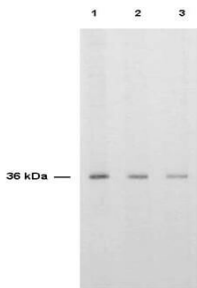
Immunogen	Anti-THYMIDYLATE SYNTHASE was purified from rabbit serum after repeated immunizations with recombinant human Thymidylate Synthase (36 kDa) produced in E.coli.
Isotype	IgG
Form	Lyophilized
Concentration	1 mg/ml by UV absorbance at 280 nm

<b>Purification</b>	Anti-THYMIDYLATE SYNTHASE IgG fraction 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.
<b>Suggested Dilutions</b>	ELISA: 1:10,000 - 1:50,000 IHC: User optimized IF Microscopy: User optimized WB: 1:500 - 1:2,000 THYMIDYLATE SYNTHASE antibody has been tested by western blot. This antibody is suitable for use in ELISA, immunoprecipitation, immunofluorescence microscopy, and immunohistochemistry. 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.

## Anti-Thymidylate Synthase Antibody (A04320-2) Images



Western Blot results of Sheep anti-Thymidylate Synthase Antibody. Lane 1: Opal Prestained Molecular Weight Ladder . Lane 2: HeLa WCL . Lane 3: MOLT-4 WCL . Load: 10 $\mu$ g/lane. Primary Antibody: Sheep anti-Thymidylate Synthase at 1 $\mu$ g/mL overnight at 4 $^{\circ}$ C. Secondary Antibody: Donkey anti-Sheep HRP at 1:40,000 for 30min at RT. Blocking: BlockOut for 30 min at RT. Predicted MW: ~36kDa. Observed MW: ~35kDa.



Anti-TS is shown to detect thymidylate synthase present in a HeLa cell extract. Each lane is estimated to contain 4  $\mu$ g of protein. Lanes 1, 2 and 3 represent 1:2,000, 1:5,000 and 1:10,000 fold dilutions of the antibody. Detection was made using HRP Rabbit-a-Sheep IgG (613-4302) diluted 1:1,000 and color development using TMB (TMBM-100) substrate for approximately 4'.

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