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www.rockland.com
tech@rockland.com
+1 484.791.3823

Datasheet for 200-601-199S

Thymidylate Synthase Antibody

Overview

Description:	Anti-Thymidylate Synthase (SHEEP) Antibody - 200-601-199S
Item No.:	200-601-199S
Size:	25 µL
Applications:	WB
Reactivity:	Human
Host Species:	Sheep

Product Details

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.
Synonyms:	sheep anti-Thymidylate Synthase Antibody, d TMP synthase antibody, EC 2.1.1.45 antibody, HsT422 antibody, MGC88736 antibody
Host Species:	Sheep
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	TYMS
Reactivity:	Human
Immunogen Type:	Recombinant Protein

Immunogen:	Anti-THYMIDYLATE SYNTHASE was purified from rabbit serum after repeated immunizations with recombinant human Thymidylate Synthase (36 kDa) produced in E.coli.
Purity/Specificity:	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.
Relevant Links:	• UniProtKB - P04818 • NCBI - P04818.3 • GeneID - 7298

Application Details

Tested Applications:	WB
Application Note:	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.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:10,000 - 1:50,000
IF:	User Optimized
IHC:	User Optimized
WB:	1:500 - 1:2,000

Formulation

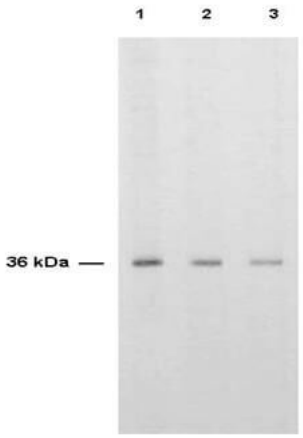
Physical State:	Liquid (sterile filtered)
Concentration:	1 mg/ml by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2

Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	None

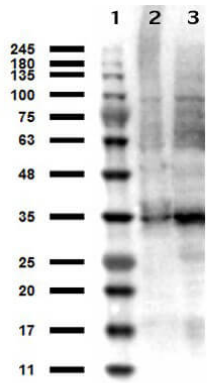
Shipping & Handling

Shipping Condition:	Dry Ice
Storage Condition:	Store vial at -20° C or below prior to opening. This vial contains a relatively low volume of reagent (25 µL). To minimize loss of volume dilute 1:10 by adding 225 µL of the buffer stated above directly to the vial. Recap, mix thoroughly and briefly centrifuge to collect the volume at the bottom of the vial. Use this intermediate dilution when calculating final dilutions as recommended below. Store the vial at -20°C or below after dilution. Avoid cycles of freezing and thawing.
Expiration:	Expiration date is one (1) year from date of receipt.

Images



Western Blot
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 1:2,000, 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'.



Western Blot

Western Blot results of Sheep anti-Thymidylate Synthase Antibody. Lane 1: Opal Prestained Molecular Weight Ladder (p/n MB-210-0500). Lane 2: HeLa WCL (p/n W09-000-364). Lane 3: MOLT-4 WCL (p/n W09-001-GK2). Load: 10µg/lane. Primary Antibody: Sheep anti-Thymidylate Synthase at 1µg/mL overnight at 4°C. Secondary Antibody: Donkey anti-Sheep HRP (p/n 613-703-168) at 1:40,000 for 30min at RT. Blocking: BlockOut (p/n MB-073) for 30 min at RT. Predicted MW: ~36kDa. Observed MW: ~35kDa.

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