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Datasheet for 200-601-199-0100

Thymidylate Synthase Antibody

Overview

Description:	Anti-Thymidylate Synthase (SHEEP) Antibody - 200-601-199-0100
Item No.:	200-601-199-0100
Size:	100 µg
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:	Lyophilized
Concentration:	1 mg/ml by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2

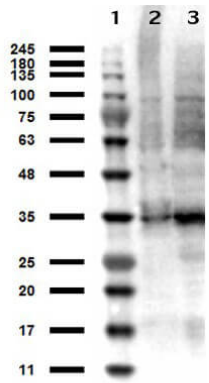
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	None
Reconstitution Volume:	100 µL
Reconstitution Buffer:	Restore with deionized water (or equivalent)

Shipping & Handling

Shipping Condition:	Ambient
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.
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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