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Datasheet for 100-401-199

Thymidylate Synthase Antibody

Overview

Description:	Anti-Thymidylate Synthase (RABBIT) Antibody - 100-401-199
Item No.:	100-401-199
Size:	100 µL
Applications:	WB, IHC
Reactivity:	Human
Host Species:	Rabbit

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 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.
Synonyms:	rabbit anti-Thymidylate Synthase Antibody, d TMP synthase antibody, HsT422 antibody, MGC88736 antibody
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	Antiserum

Target Details

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

Immunogen:	This whole rabbit serum was prepared by repeated immunizations with recombinant human Thymidylate Synthase (36 kDa) produced in E.coli.
Purity/Specificity:	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.
Relevant Links:	• UniProtKB - P04818 • NCBI - P04818.3 • GeneID - 7298

Application Details

Tested Applications:	WB
Suggested Applications:	IHC (Based on references)
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.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:20,000 - 1:100,000
IHC:	User Optimized
WB:	1:500 - 1:2,000

Formulation

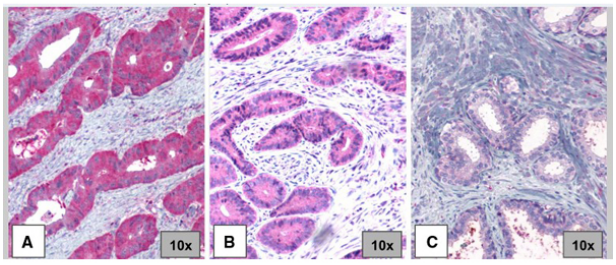
Physical State:	Liquid (sterile filtered)
Concentration:	85 mg/mL by Refractometry
Buffer:	None

Preservative:	0.01% (w/v) Sodium Azide

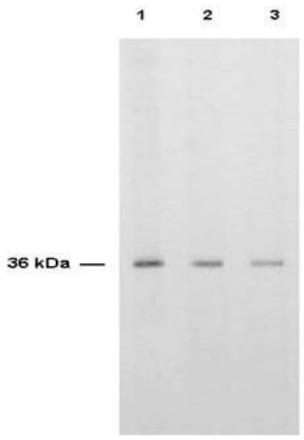
Shipping & Handling

Shipping Condition:	Dry Ice
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.
Expiration:	Expiration date is one (1) year from date of receipt.

Images



Immunohistochemistry
Thymidylate Synthase immunohistochemical staining of paraffin-embedded human rectal adenocarcinoma cells. A. Strong staining intensity in rectal cancer cells. B. Cancer cells with a moderate staining pattern. C. Negative tumor cells for TS staining.
Anti-human TS [Rabbit] (p/n 100-401-199) at a dilution of 1:100. Heat epitope retrieval using the immunostainer was performed for 60 min at 100°C. The anti-TS antibody was incubated at 37°C for 28 min.
Fig 2. PMID: 21347782.



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 1:500, 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'.

References

- Conradi, LC. et al. Thymidylate synthase as a prognostic biomarker for locally advanced rectal cancer after multimodal treatment. *Annals of Surgical Oncology* (2011)

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