abcam

ab111153

Anti-Thymidylate Synthase antibody [SP112]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.1% Sodium azide Constituents: PBS, 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	SP112
Purification technique	Affinity purification Protein A/G
Concentration	0.113 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS by protein A/G.

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100

Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/200
Notes	-

Target data

See full target information TYMS

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 mitochondrial and nuclear de novo thymidylate biosynthesis pathway.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility

- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Thymidylate Synthase (TS) also known as TYMS or TSase is an important enzyme involved in the de novo synthesis of thymidylate a nucleotide necessary for DNA replication and repair. TS catalyzes the methylation of deoxyuridine monophosphate (dUMP) to deoxythymidine monophosphate (dTMP) using 510-methylenetetrahydrofolate as a cofactor. It has an approximate molecular weight of 36 kDa. The enzyme is expressed in the cytoplasm of proliferating cells predominantly in tissues with high cellular turnover like bone marrow and the intestinal lining.
Biological function summary	Thymidylate synthase plays a critical role in DNA synthesis and cell division. As a member of the folate cycle it indirectly influences the supply of thymidine for DNA synthesis affecting cell proliferation. The enzyme generally functions as a homodimer which is necessary for its activity. Increased expression of TS usually correlates with high rates of cell division making it an important factor in rapidly growing tissues and tumors.
Pathways	Several important biological networks involve thymidylate synthase especially the folate and pyrimidine metabolism pathways. These pathways are essential for the maintenance of nucleotide pools within the cell. TS is functionally related to proteins like dihydrofolate reductase (DHFR) which also play roles in folate metabolism and DNA synthesis. Collectively these proteins ensure the proper balance of nucleotide precursors for DNA replication and repair.
Associated diseases and disorders	Thymidylate synthase is closely associated with cancer and certain autoimmunity conditions. Overexpression of TS is commonly observed in various cancers as tumor cells require increased nucleotide synthesis for rapid proliferation. This makes TS a target for several anticancer drugs like 5-fluorouracil which inhibits TS activity. Additionally aberrations in enzymes like dihydropyrimidine dehydrogenase (DPD) could affect TS function leading to chemotherapeutic agent sensitivity in cancer treatments.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

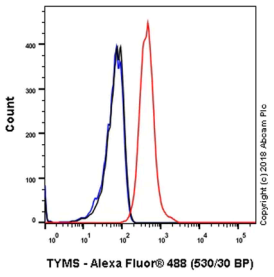
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

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Terms & Conditions.

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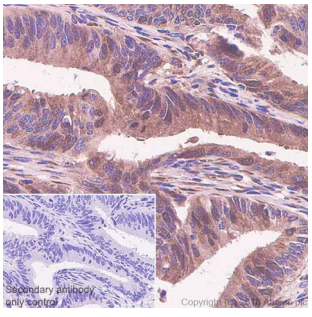
3 product images



Flow Cytometry (Intracellular) - Anti-Thymidylate Synthase antibody [SP112] (ab111153)

Thymidylate Synthase Flow Cytometry (Intracellular) staining using rabbit Anti-Thymidylate Synthase antibody

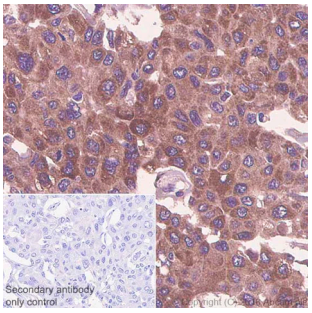
Flow cytometry analysis of HeLa (human cervix adenocarcinoma epithelial cell) labeling Thymidylate Synthase with purified ab111153 at 1/200 dilution (0.78 µg/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as a secondary antibody. Isotype control - Rabbit monoclonal IgG (ab172730) (black). Unlableled control - Unlabelled cells (blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thymidylate Synthase antibody [SP112] (ab111153)

Thymidylate Synthase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Thymidylate Synthase antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human colon carcinoma tissue sections labeling Thymidylate Synthase with ab111153 at 1/100 dilution (1.55 µg/ml). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 10mins. Goat Anti-Rabbit & Mouse IgG (HRP) was used as the secondary antibody. Hematoxylin was used as a counterstain. Positive staining on the human colon carcinoma, with some nuclear staining, performed on a Leica Biosystems BOND™ RX instrument.
The section was incubated with ab111153 for 30 mins at room temperature.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Thymidylate Synthase antibody [SP112] (ab111153)

Thymidylate Synthase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Thymidylate Synthase antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human hepatocellular carcinoma tissue sections labeling Thymidylate Synthase with ab111153 at 1/100 dilution (1.55 µg/ml). Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 10mins. Goat Anti-Rabbit & Mouse IgG (HRP) was used as the secondary antibody. Hematoxylin was used as a counterstain. Positive staining on the human hepatocellular carcinoma, performed on a Leica Biosystems BOND™ RX instrument.
The section was incubated with ab111153 for 30 mins at room temperature.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.