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Thymidylate Synthase (5-FU Resistance Marker) Antibody - With BSA and Azide

Mouse Monoclonal Antibody [Clone SPM453]
Catalog # AH10787

Product Information

Application	IF, FC, IHC-P
Primary Accession	P04818
Other Accession	7298, 369762
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG1, kappa
Clone Names	SPM453
Calculated MW	35716

Additional Information

Gene ID	7298
Other Names	Thymidylate synthase, TS, TSase, 2.1.1.45, TYMS, TS
Application Note	IF~~1:50~200 FC~~1:10~50 IHC-P~~N/A
Format	200ug/ml of Ab purified from Bioreactor Concentrate by Protein A/G. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available WITHOUT BSA at 1.0mg/ml.
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	Thymidylate Synthase (5-FU Resistance Marker) Antibody - With BSA and Azide is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TYMS (HGNC:12441)
Synonyms	TS
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.

Cellular Location	Nucleus. Cytoplasm Mitochondrion. Mitochondrion matrix. Mitochondrion inner membrane. Note=Localized to the nucleus during S and G2/M phases of the cell cycle. As a component of the de novo thymidylate synthesis complex, localizes specifically to replication forks during DNA synthesis (PubMed:22235121)

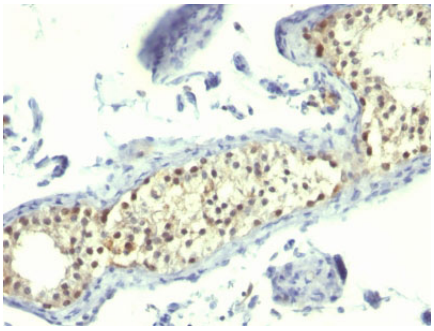
Background

It recognizes a protein of 36kDa, identified as Thymidylate Synthase (TS) (EC 2.1.1.45). TS converts deoxyuridine monophosphate (dUMP) to deoxythymidine monophosphate (dTMP), which is essential for DNA biosynthesis. TS is also a critical target for the fluoropyrimidines, an important group of antineoplastic drugs that are widely used in the treatment of solid tumors. Both 5-FU and fluorodeoxyuridine are converted in tumor cells to FdUMP which inactivates TS by formation of a ternary covalent complex in the presence of the folate cofactor 5,10-methylenetetrahydrofolate. Expression of TS protein is associated with response to 5-fluorouracil (5-FU) in human colorectal, gastric, head and neck, and breast carcinomas.

References

Johnston PG, et. al. Cancer Research, 1991, 51(24):6668-76. | Johnston PG, et. al. Cancer Research, 1992, 52(16):4306-12

Images



Formalin-fixed, paraffin-embedded human Testicular Carcinoma stained with Thymidylate Synthase Monoclonal Antibody (SPM453).

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