

# Human Thymidylate synthase/TYMS antibody

Catalog Number: ATGA0169

## PRODUCT INFORMATION

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**Catalog number**

ATGA0169

**Clone No.**

AT2155

**Product type**

Monoclonal Antibody

**UnitProt No.**

P04818

**NCBI Accession No.**

NP\_001062

**Alternative Names**

HST422, TMS, TS, dTMP synthase, EC 2.1.1.45, MGC88736, Thymidylate synthase, Thymidylate synthetase, Tsase, TYMS, TYMS protein, Tyms thymidylate synthetase

## PRODUCT SPECIFICATION

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**Antibody Host**

Mouse

**Reacts With**

Human

**Concentration**

1mg/ml (determined by BCA assay)

**Formulation**

Liquid in. Phosphate-Buffered Saline (pH 7.4) with 0.02% Sodium Azide, 10% glycerol

**Immunogen**

Recombinant TYMS (1-313aa) purified from E. coli

**Isotype**

IgG2b kappa

**Purification Note**

By protein-G affinity chromatography

**Application**

ELISA, WB, ICC/IF, FACS

**Usage**

The antibody has been tested by ELISA, Western blot, ICC/IF and FACS analysis to assure specificity and reactivity. Since application varies, however, each investigation should be titrated by the reagent to obtain optimal results.

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## Storage

Can be stored at +2C to +8C for 1 week. For long term storage, aliquot and store at -20C to -80C. Avoid repeated freezing and thawing cycles.

## BACKGROUND

### Description

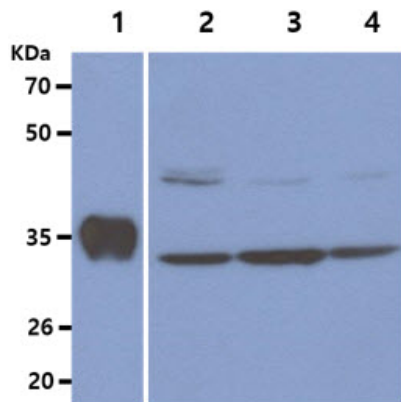
The methylation of deoxyuridine monophosphate (dUMP) to deoxythymidine monophosphate (dTMP) is an essential step for the formation of thymine nucleotides. This process is catalyzed by thymidylate synthase (TS or TYMS). TYMS is an intracellular enzyme that provides the sole de novo source of thymidylate in activity highest proliferating cells. Being the exclusive source of dTMP, TS is also an important target for anticancer agents such as 5-fluorouracil (5-FU). 5-FU acts as a TS inhibitor and is active against solid tumors such as colon, breast, head and neck. TS expression may be useful in predicting overall patient survival, but the prognostic value of TS expression continues to be a subject of investigation for different types of cancers.

### General References

- Shahrokni A, et al., (2009) Clin Colorectal Cancer 8(4):231-4.
- Henriquez-Hernandez LA, et al., (2009) Oncol Rep 22(6):1425-33.
- Colavito D, et al., (2009) Cancer Chemother Pharmacol 64(6):1195-200.

## DATA

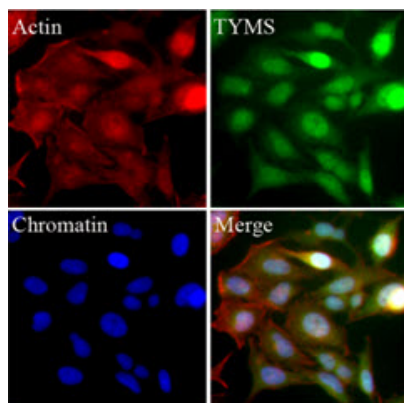
### Western blot analysis (WB)



The recombinant protein (50ng) and cell lysates (40ug) were resolved by SDS-PAGE, transferred to PVDF membrane and probed with anti-human TYMS (1:2000). Proteins were visualized using a goat anti-mouse secondary antibody conjugated to HRP and an ECL detection system.

- Lane 1.: Recombinant human TYMS protein
- Lane 2.: HeLa cell lysate
- Lane 3.: Jurkat cell lysate
- Lane 4.: MCF7 cell lysate

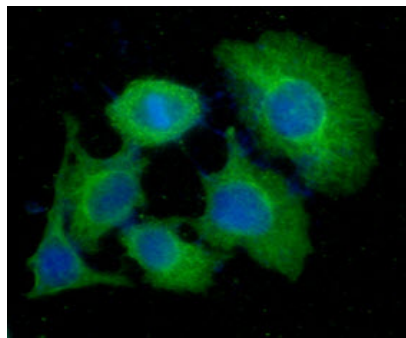
### Immunocytochemistry/Immunofluorescence (ICC/IF)



HeLa cells were stained with monoclonal anti-TYMS antibody (Green). Nucleus and Actin were stained by Phalloidin-TRITC (Red) or Hoechst 33342 (Blue).

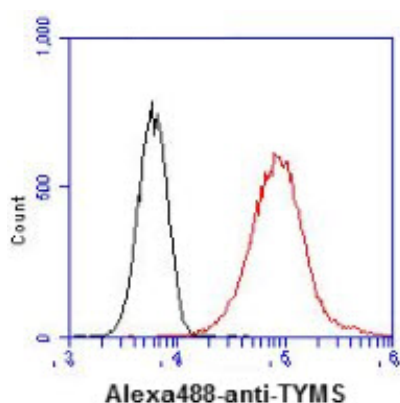
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ICC/IF analysis of TYMS in HeLa cells. The cell was stained with ATGA0169 (1:100). The secondary antibody (green) was used Alexa Fluor 488. DAPI was stained the cell nucleus (blue).

### Flow cytometry (FACS)



Flow cytometry analysis of TYMS in HeLa cell line, staining at 2-5ug for  $1 \times 10^6$  cells (red line). The secondary antibody used goat anti-mouse IgG Alexa fluor 488 conjugate. Isotype control antibody was mouse IgG (black line).