

#3766 Store at -20°C

# Thymidylate Synthase Antibody



✓ 100 µl  
(10 Western mini-blot)

**Orders** ■ 877-616-CELL (2355)  
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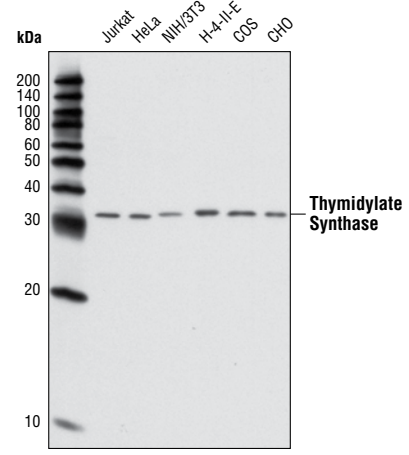
This product is for *in vitro* research use only and is not intended for use in humans or animals.  
This product is not intended for use as a therapeutic or in diagnostic procedures.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R, Mk, Hm	30 kDa	Rabbit**

**Background:** The methylation of deoxyuridine monophosphate (dUMP) to deoxythymidine monophosphate (dTMP) is an essential step in the formation of thymine nucleotides. (1,2, reviewed in 3). This process is catalyzed by thymidylate synthase (TS or TYMS), a homodimer composed of two 30 kDa subunits. TS is an intracellular enzyme that provides the sole *de novo* source of thymidylate, making it a required enzyme in DNA biosynthesis with activity highest in proliferating cells. (1) Being the exclusive source of dTMP, TS is also an important target for anticancer agents such as 5-fluorouracil (5-FU) (1-5). 5-FU acts as a TS inhibitor and is active against solid tumors such as colon, breast, head and neck. Studies have shown that patients with metastases expressing lower levels of TS have higher response rate to treatment with 5-FU than patients with tumors that have increased levels of TS. (5) 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 (6-10).

**Specificity/Sensitivity:** Thymidylate Synthase Antibody detects endogenous levels of total thymidylate synthase protein.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic peptide (KLH-coupled) corresponding to residues near the carboxy terminus of human thymidylate synthase. Antibodies are purified using protein A and peptide affinity chromatography.



Western blot analysis of extracts from various cell types using Thymidylate Synthase Antibody.

Entrez-Gene ID #7298  
Swiss-Prot Acc. #P04818

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

\*Species cross-reactivity is determined by western blot.

\*\*Anti-rabbit secondary antibodies must be used to detect this antibody.

**Recommended Antibody Dilutions:**  
Western blotting 1:1000

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

**Background References:**

- (1) Johnston, P.G. et al. (1991) *Cancer Res* 51, 6668-76.
- (2) Aschele, C. et al. (2002) *Ann Oncol* 13, 1882-92.
- (3) Jackman, A.L. and Calvert, A.H. (1995) *Ann Oncol* 6, 871-81.
- (4) Van Triest, B. et al. (2000) *J Histochem Cytochem* 48, 755-60.
- (5) Johnston, P.G. et al. (1994) *J Clin Oncol* 12, 2640-7.
- (6) Kwon, H.C. et al. (2007) *Ann Oncol* 18, 504-9.
- (7) Allegra, C.J. et al. (2002) *J Clin Oncol* 20, 1735-43.
- (8) Allegra, C.J. et al. (2003) *J Clin Oncol* 21, 241-50.
- (9) Tsourouflis, G. et al. (2008) *Dig Dis Sci* 53, 1289-96.
- (10) Kim, S.H. et al. (2009) *Am J Clin Oncol* 32, 38-43.

**IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.**

**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine  
 Dg—dog Pg—pig Sc—S. cerevisiae All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.