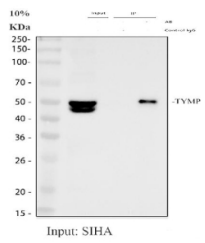
TYMP Antibody / Thymidine phosphorylase / PD-ECGF (FY13337)

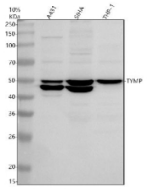
Catalog No.	Formulation	Size
FY13337	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

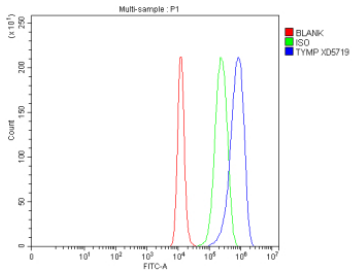
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P19971
Applications	Western Blot : 0.25-0.5ug/ml Immunoprecipitation : 2-4ug/500ug of lysate Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This TYMP antibody is available for research use only.



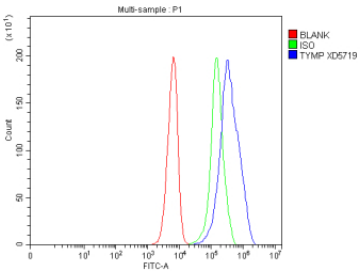
TYMP Antibody SiHa IP-WB. Immunoprecipitation of TYMP from human SiHa whole cell lysate followed by western blot detection using TYMP antibody. Lane 1: SiHa whole cell lysate (input), Lane 2: control IgG immunoprecipitation, Lane 3: TYMP immunoprecipitation using TYMP antibody. The input lane shows a characteristic doublet at approximately 45-55 kDa, while the immunoprecipitated sample displays a predominant band at approximately 50 kDa, consistent with enrichment of the full-length TYMP protein. The absence of signal in the control IgG lane confirms specificity of the immunoprecipitation. The observed banding pattern aligns with TYMP as a cytosolic enzyme involved in nucleotide metabolism and angiogenesis-associated signaling.



TYMP Antibody Multi-Sample WB. Western blot analysis of human whole cell lysates using TYMP antibody detecting thymidine phosphorylase. Lane 1: human whole cell lysate, Lane 2: SiHa whole cell lysate, Lane 3: THP-1 whole cell lysate. A predominant band is detected at approximately 50 kDa in all samples, slightly below the predicted ~55 kDa molecular weight but consistent with the known migration behavior of TYMP. A weaker band is also observed in the high 40 kDa range, likely representing a processed or partially cleaved form of the protein. The consistent detection across samples aligns with TYMP expression as a cytosolic enzyme involved in nucleotide metabolism and angiogenesis-associated signaling.



TYMP Antibody A431 FACS. Flow cytometry analysis of human A431 cells stained with TYMP antibody detecting thymidine phosphorylase. The antibody signal (blue) shows a clear rightward shift compared to the blank control (red) and isotype control (green), indicating positive intracellular detection of TYMP following fixation and permeabilization. This staining profile is consistent with TYMP as a cytosolic enzyme involved in nucleotide metabolism and angiogenesis-associated signaling.



TYMP Antibody SiHa FACS. Flow cytometry analysis of human SiHa cells stained with TYMP antibody detecting thymidine phosphorylase. The antibody signal (blue) shows a clear rightward shift compared to the blank control (red) and isotype control (green), indicating positive intracellular detection of TYMP following fixation and permeabilization. This staining pattern is consistent with TYMP as a cytosolic enzyme involved in nucleotide metabolism and angiogenesis-associated signaling.

Description

TYMP antibody detects Thymidine phosphorylase, also known as Platelet-derived endothelial cell growth factor (PD-ECGF), an enzyme encoded by the TYMP gene located on chromosome 22q13.33. TYMP is a cytoplasmic enzyme that catalyzes the reversible phosphorolysis of thymidine to thymine and 2-deoxy-D-ribose-1-phosphate, functioning in nucleotide metabolism and angiogenic signaling. It is widely expressed in endothelial cells, macrophages, and platelets, with particularly high levels observed in tumor vasculature and regenerative tissues. TYMP plays a dual role as a metabolic enzyme and a pro-angiogenic factor, linking DNA salvage pathways with vascular growth regulation.

As a key enzyme in pyrimidine salvage metabolism, TYMP maintains nucleotide pool balance for DNA synthesis and repair. Beyond its catalytic role, extracellular TYMP functions as PD-ECGF, promoting endothelial cell migration, angiogenesis, and wound healing. TYMP activity increases during hypoxia and tissue regeneration, facilitating the formation of new capillaries in response to injury or ischemia. Co-localization studies show TYMP associating with endothelial integrins and extracellular matrix components in angiogenic tissues.

Structurally, TYMP forms a homodimer with each subunit containing a thymidine-binding pocket and phosphate-binding residues essential for catalysis. It belongs to the thymidine phosphorylase family of pyrimidine salvage enzymes. The enzyme's catalytic activity also generates deoxyribose sugars that act as angiogenic mediators, linking metabolism to vascular signaling. TYMP interacts with molecules such as integrin alphavbeta3 and extracellular matrix proteins to enhance endothelial cell adhesion and migration.

Functionally, TYMP contributes to multiple biological processes, including angiogenesis, platelet activation, and oxidative stress response. Its expression is regulated by hypoxia-inducible factor 1-alpha (HIF-1alpha), cytokines, and growth factors such as VEGF and TNF-alpha. In cancer, TYMP expression is upregulated in tumor-associated macrophages and endothelial cells, promoting neovascularization and tumor progression. However, TYMP also exhibits cytotoxic effects in

thymidine phosphorylase-deficient conditions by accumulating toxic thymidine metabolites, as seen in mitochondrial neurogastrointestinal encephalopathy (MNGIE).

Dysregulation of TYMP is clinically significant. Loss-of-function mutations cause MNGIE, a rare mitochondrial disorder characterized by gastrointestinal dysmotility, neuropathy, and leukoencephalopathy. Overexpression of TYMP is associated with poor prognosis in several cancers, including colorectal, breast, and gastric carcinoma, where it drives angiogenesis and tumor growth. Pathway involvement includes pyrimidine salvage metabolism, hypoxia response, and VEGF-mediated angiogenic signaling. In regenerative medicine, TYMP serves as a biomarker and target for promoting vascular repair and wound healing.

Immunohistochemical staining using TYMP antibody shows cytoplasmic and extracellular localization in endothelial and stromal cells. The TYMP antibody from NSJ Bioreagents is an excellent reagent for studies on nucleotide metabolism, angiogenesis, and tumor biology.

Explore our Thymidine Phosphorylase Antibody - Angiogenesis and Nucleotide Metabolism Marker (TYMP/2890R) page for a broader view of TYMP expression in metabolism and tumor-associated angiogenesis.

Application Notes

Optimal dilution of the TYMP antibody should be determined by the researcher.

Immunogen

E.coli-derived human PD-ECGF/TYMP recombinant protein (Position: P13-Q482) was used as the immunogen for the TYMP antibody.

Storage

After reconstitution, the TYMP antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.