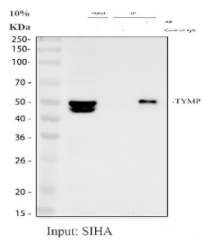
TYMP Antibody / Thymidine phosphorylase / PD-ECGF (FY13337)

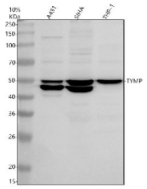
Catalog No.	Formulation	Size
FY13337	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

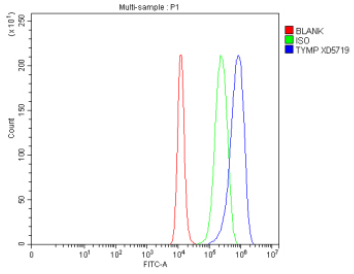
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P19971
Applications	Western Blot : 0.25-0.5ug/ml Immunoprecipitation : 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.



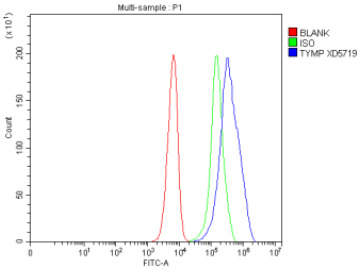
Immunoprecipitating PD-ECGF/TYMP in SiHa whole cell lysate. Western blot analysis of PD-ECGF/TYMP using anti-TYMP antibody. Lane 1: SiHa whole cell lysates (30ug), Lane 2: Rabbit control IgG instead of anti-TYMP antibody in SiHa whole cell lysate, Lane 3: anti-TYMP antibody (2ug) + SiHa whole cell lysate (500ug). After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti-TYMP antibody at a dilution of 0.5 ug/ml and probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate. The input lane shows the characteristic doublet at approximately 50 kDa and in the high 40 kDa region. In contrast, the immunoprecipitated material displays a single band at approximately 50 kDa, indicating selective enrichment of the full length TYMP species. The control IgG lane shows no detectable signal, confirming specificity of the immunoprecipitation.



Western blot analysis of PD-ECGF/TYMP using anti-TYMP antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human whole cell lysates, Lane 2: human SiHa whole cell lysates, Lane 3: human THP-1 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-TYMP antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. 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 thymidine phosphorylase. A weaker lower band is also observed in the high 40 kDa range, which likely represents a processed or partially cleaved form of TYMP rather than a distinct isoform.



Flow Cytometry analysis of cells using anti-TYMP antibody. Overlay histogram showing cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-TYMP antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Flow Cytometry analysis of SiHa cells using anti-TYMP antibody. Overlay histogram showing SiHa cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-TYMP antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

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.

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.