Revision 1

Store at -20C

#37879

Thrombospondin-1 (D7E5F) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R	Endogenous	170	Rabbit IgG	#P07996	7057

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Thrombospondin-1 (D7E5F) Rabbit mAb recognizes endogenous levels of total thrombospondin-1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human thrombospondin-1 protein.

Background

The adhesive glycoprotein thrombospondin-1 (THBS1, TSP1) localizes to the extracellular matrix (ECM) and mediates interactions between cells and the ECM and among cells. Thrombospondin-1 is a multi-domain, glycosylated protein that interacts with a wide variety of extracellular targets, including matrix metalloproteinases (MMPs), collagens, cell receptors, growth factors, and cytokines (1). The protein structure of THBS1 includes an amino-terminal laminin G-like domain, a von Willebrand factor-binding domain, and multiple thrombospondin (TSP) repeated sequences designated as type I, type II, or type III repeats. Each thrombospondin domain interacts with a distinct type of cell surface ligands or protein targets. The amino-terminal domain interacts with aggrecan, heparin, and integrin proteins. Type I TSP repeats interact with MMPs and CD36, while carboxy-terminal repeats bind the thrombospondin receptor CD47 (1). Through these interactions, THBS1 exerts diverse effects on different signaling pathways, such as VEGF receptor/NO signaling, TGFβ signaling, and the NF-κB pathway (2-5). Thrombospondin-1 is an important regulator of many biological processes, including cell adhesion/migration, apoptosis, angiogenesis, inflammation, vascular function, and cancer development (2-5). The activity of thrombospondin-1 is mainly regulated by extracellular proteases. The metalloproteinase ADAMTS1 cleaves thrombospondin, resulting in the release of peptides with anti-angiogenic properties. Elastase and plasmin proteases degrade the THBS1 protein and down regulate its activity (6). As THBS1 is an important protein inhibitor of angiogenesis, the development of thrombospondin-based compounds and their use in therapeutic studies may provide a beneficial approach to the treatment of cancer (7,8).

Background References

1. Resovi, A. et al. (2014) *Matrix Biol* 37, 83-91.
2. Lawler, P.R. and Lawler, J. (2012) *Cold Spring Harb Perspect Med* 2, a006627.
3. Lopez-Dee, Z. et al. (2011) *Mediators Inflamm* 2011, 296069.
4. Roberts, D.D. et al. (2012) *Matrix Biol* 31, 162-9.
5. Kazerounian, S. et al. (2008) *Cell Mol Life Sci* 65, 700-12.
6. Iruela-Arispe, M.L. (2008) *Curr Drug Targets* 9, 863-8.
7. Mirochnik, Y. et al. (2008) *Curr Drug Targets* 9, 851-62.
8. Taraboletti, G. et al. (2010) *Oncotarget* 1, 662-73.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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