

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Thrombospondin-2 in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant human (rh) Thrombospondin-1 and rhThrombospondin-4 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human Thrombospondin-2 Gly19-Ile1172 Accession # P35442
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
<b>Western Blot</b>	0.1 µg/mL	Recombinant Human Thrombospondin-2 (Catalog # 1635-T2)

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

Thrombospondin-2 (TSP-2) is a 150 kDa calcium-binding protein that modulates cellular interactions with extracellular matrix. Thrombospondin-1 and -2 constitute subgroup A thrombospondin family members and form disulfide-linked homotrimers, whereas Thrombospondin-3, -4, and -5/COMP constitute subgroup B and form homopentamers (1-4). The human TSP-2 cDNA encodes a 1172 amino acid (aa) precursor that includes an 18 aa signal sequence followed by an N-terminal heparin-binding domain, an oligomerization motif, one vWF-C domain, three TSP type-1 repeats, three EGF-like repeats, seven TSP type-3 repeats, and a lectin-like TSP C-terminal domain (5). Human TSP-2 shares 88-90% aa sequence identity with bovine, mouse, and rat TSP-2. Within the TSP type-3 repeats and TSP C-terminal domain, human TSP-2 shares 80% aa sequence identity with human TSP-1 and approximately 60% aa sequence identity with human TSP-3, -4, and -5/COMP. TSP-2 regulates collagen matrix formation by altering fibroblast behavior during development and in areas of tissue remodeling in the adult (6, 7). Trimerization of TSP-2 is required for the calcium-dependent cell attachment and spreading functions, while the heparin-binding domain is responsible for the destabilization of focal adhesion sites (8-10). The heparin-binding domain also mediates binding to Integrins  $\alpha 3\beta 1$  and  $\alpha 6\beta 1$  on microvascular endothelial cells (EC) and Integrin  $\alpha 4\beta 1$  on large blood vessel EC (11, 12). A fragment of TSP-2 (heparin-binding domain, oligomerization motif, and vWF-C domain) promotes EC survival, proliferation, and chemotaxis (11). Inclusion of the three TSP type-1 domains results in a molecule that inhibits VEGF-induced EC migration and vascular tube formation (13, 14). *In vivo*, full length TSP-2 blocks tumor angiogenesis and induces vascular EC apoptosis (13, 15). HPRG functions as an apparent decoy receptor by preventing interaction of TSP-2 with CD36 on macrophages and microvasculature EC (14). TSP-2 also binds MMP-2 and facilitates MMP-2 clearance by the scavenger receptor LRP (16).

## References:

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