**DESCRIPTION**

**Specificity**
Detects human TGF-β1 in ELISAs and Western blots. In sandwich immunoassays, when used in combination with the rhTGF-β sRII/Fc chimera (Catalog # 341-BR), approximately 15% cross-reactivity with recombinant human (rh) Latent TGF-β1 is observed, 1% cross-reactivity with rhTGF-β1 is observed, and 3% cross-reactivity with recombinant amphibian (ra) TGF-β is observed. When used in combination with the monoclonal capture antibody (Catalog # MAB2402), approximately 5% cross-reactivity with TGF-β1.2 is observed and 1% cross-reactivity with rhTGF-β2, recombinant chicken TGF-β3, and raTGF-β is observed.

**Source**
Polyclonal Chicken IgY

**Purification**
Antigen Affinity-purified from egg yolks

**Immunogen**
Chinese hamster ovary cell line CHO-derived recombinant human TGF-β1 (R&D Systems, Catalog # 240-B)

**Formulation**
Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. 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.

<table>
<thead>
<tr>
<th>Application</th>
<th>Recommended Concentration</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Blot</td>
<td>0.1 µg/mL</td>
<td>Recombinant Human TGF-β1 (Catalog # 240-B)</td>
</tr>
<tr>
<td><strong>Human TGF-β1 Sandwich Immunoassay</strong></td>
<td></td>
<td>Reagent</td>
</tr>
<tr>
<td>ELISA Capture</td>
<td>2-8 µg/mL</td>
<td>TGF-β1, 2, 3 Antibody (Catalog # MAB1835)</td>
</tr>
<tr>
<td>ELISA Capture</td>
<td>2-8 µg/mL</td>
<td>TGF-β1 Antibody (Catalog # MAB2402)</td>
</tr>
<tr>
<td>ELISA Detection</td>
<td>0.1-0.4 µg/mL</td>
<td>TGF-β1 Biotinylated Antibody (Catalog # BAF240)</td>
</tr>
<tr>
<td>Standard</td>
<td></td>
<td>Recombinant Human TGF-β1 (Catalog # 240-B)</td>
</tr>
</tbody>
</table>

**PREPARATION AND STORAGE**

**Reconstitution**
Reconstitute at 0.2 mg/mL in sterile PBS.

**Shipping**
The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage**
- Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 6 months, -20 to -70 °C under sterile conditions after reconstitution.

**BACKGROUND**

TGF-β1 (transforming growth factor beta 1) is one of three closely related mammalian members of the large TGF-β superfamily that share a characteristic cystine knot structure (1 - 7). TGF-β1, -2 and -3 are highly pleiotropic cytokines that are proposed to act as cellular switches that regulate processes such as immune function, proliferation and epithelial-mesenchymal transition (1 - 4). Each TGF-β isoform has some non-redundant functions; for TGF-β1, mice with targeted deletion show defects in hematopoiesis and endothelial differentiation, and die of overwhelming inflammation (2). Human TGF-β1 cDNA encodes a 390 amino acid (aa) precursor that contains a 29 aa signal peptide and a 361 aa propeptide (8). A furin-like convertase processes the propeptide to generate an N-terminal 249 aa latency-associated peptide (LAP) and a C-terminal 112 aa mature TGF-β1 (8, 9). Disulphide-linked homodimers of LAP and TGF-β1 remain non-covalently associated after secretion, forming the small latent TGF-β1 complex (8 - 10). Covalent linkage of LAP to one of three latent TGF-β binding proteins (LTBPs) creates a large latent complex that may interact with the extracellular matrix (9, 10). TGF-β is activated from latency by pathways that include actions of the protease plasmin, matrix metalloproteases, thrombospondin 1 and a subset of integrins (10). Mature human TGF-β1 shares 100% aa identity with pig, dog and cow TGF-β1, and 99% aa identity with mouse, rat and horse TGF-β1. It demonstrates cross-species activity (1). TGF-β1 signaling begins with high-affinity binding to a type II ser/thr kinase receptor termed TGF-β RI. This receptor then phosphorylates and activates a second ser/thr kinase receptor, TGF-β RI (also called activin receptor-like kinase (ALK) -5), or alternatively, ALK-1. This complex phosphorylates and activates Smad proteins that regulate transcription (3, 11, 12). Contributions of the accessory receptors betaglycan (also known as TGF-β RIII) and endoglin, or use of Smad-independent signaling pathways, allow for disparate actions observed in response to TGF-β in different contexts (11).

**References:**