

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TSC2 in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant human TSC1 and recombinant mouse TSC22 is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human TSC2 His1506-Lys1748 Accession # P49815
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

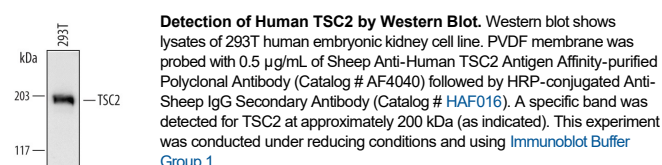
APPLICATIONS

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.

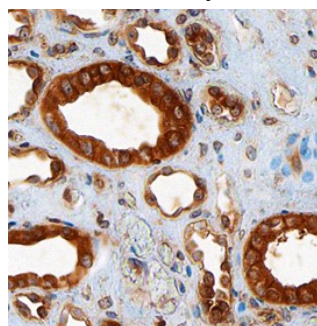
	Recommended Concentration	Sample
Western Blot	0.5 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below

DATA

Western Blot



Immunohistochemistry



TSC2 in Human Kidney. TSC2 was detected in immersion fixed paraffin-embedded sections of human kidney using Sheep Anti-Human TSC2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4040) at 3 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Sheep HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS019) and counterstained with hematoxylin (blue). Specific staining was localized to epithelial cells. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.2 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> 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

TSC-2 (Tuberous sclerosis complex protein 2; also tuberin) is a 190-220 kDa intracellular GTPase activating protein. It is widely expressed, and plays a central role in mTOR activation. In quiescent cells, TSC-2 is non-covalently bound to both membrane-embedded TSC-1 (a structurally unrelated protein) and polycystin-1. In this complex, TSC-2 represses mTOR activity by converting GTP-Rheb to GDP-Rheb. When AKT is activated (via growth factor signaling), TSC-2 is phosphorylated, binds to 14-3-3 protein, dissociates from its complex, and stops converting GTP-Rheb to GDP-Rheb. Human TSC-2 is 1807 amino acids (aa) in length. It contains two coiled-coil regions (aa 346-371 and 1008-1021), and one Rap-GAP domain (aa 1531-1758). Phosphorylation regulates TSC-2 activity and there are at least 19 utilized phosphorylation sites. Multiple splice variants exist. Singularly, or in combination, there are deletions of aa 1272-1294, 76-112, 946-988, and 946-989. Single point mutations abound, some of which impact phosphorylation. There is also a potential alternative start site 91 aa upstream of the standard site. Over aa 1506-1748, human TSC-2 shares 85% aa identity with mouse TSC-2.