

## TSC1 Polyclonal Antibody

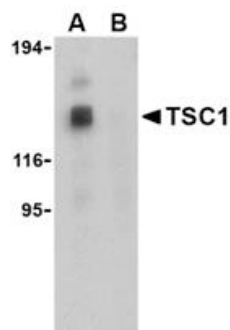
Product Specifications	
<b>Catalog Number:</b>	905-713-100
<b>Host:</b>	Rabbit
<b>Species Reactivity:</b>	Human, mouse, rat
<b>Applications:</b> <i>The optimal dilution for a specific application must be determined by the investigator</i>	<b>WB:</b> 1 µg/mL <b>ICC</b> 2 µg/mL
<b>Predicted m.w:</b>	~ 145 kDa
<b>Concentration:</b>	See product label
<b>Purification:</b>	Peptide Affinity
<b>Format:</b>	PBS, 0.02% sodium azide
<b>Storage:</b> <i>Shipping conditions may differ from the recommended storage temperature</i>	Store at 4°C
<b>Immunogen:</b>	Synthetic peptide derived from the sequence of human TSC1
<b>Related Products:</b>	
905-687-100	mTOR Polyclonal Antibody

### Background:

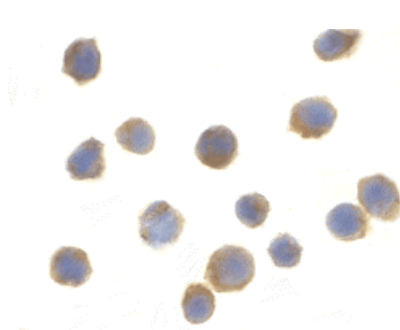
Tuberous sclerosis complex (TSC) is an autosomal dominant tumor syndrome caused by mutations in either of the TSC1 (Hamartin) or TSC2 (Tuberin) tumor suppressor genes. The products of these genes form a protein complex that indirectly decreases signaling by the mammalian Target of Rapamycin (mTOR), an evolutionarily conserved serine/threonine kinase that regulates cell growth and cell cycle through its ability to integrate signals from nutrient levels and growth factors<sup>1,2</sup>. mTOR activity is stimulated by Rheb, a member of the Ras superfamily of G-proteins, when the GTP/GDP ratio bound to Rheb is high<sup>3</sup>. Immunoprecipitated TSC1/TSC2 has been shown to stimulate Rheb GTPase activity *in vitro*<sup>4</sup>, suggesting that the TSC1/TSC2 decreases the ability of Rheb to stimulate mTOR activity. Overexpression of TSC1 and TSC2 results in a significant decrease in the GTP/GDP ratio bound to Rheb and the subsequent inhibition of cell growth<sup>4,5</sup>.

#### References:

1. Shamji, A.F., *et al.* (2003) *Mol Cell* **12**, 271-280.
2. Inoki, K., *et al.* (2005) *Microbiol. Mol Biol Rev.* **69**, 79-100.
3. Tabancay, A.P. Jr., *et al.* (2003) *J Biol Chem.* **278**, 39921-39930.
4. Inoki, K., *et al.* (2003) *Genes Dev.* **17**, 1829-1834.
5. Tee, A.R., *et al.* (2002) *Proc Natl Acad Sci USA* **99**, 13571-13576.



Western blot analysis of EL4 cell lysate with TSC1 Polyclonal antibody at 1 µg/mL in the (A) absence and (B) presence of blocking peptide.



Immunocytochemistry of EL4 cells with TSC1 Polyclonal antibody at 2 µg/mL.