SANTA CRUZ BIOTECHNOLOGY, INC.

TCP-1 ζ (F-12): sc-271734

BACKGROUND

The protein TCP-1 (t complex polypeptide 1) is a subunit of the heterooligomeric complex CCT (chaperonin containing TCP-1) present in the eukaryotic cytosol. The CCT of eukaryotic cytosol is composed of eight different subunit species, TCP-1 α, β, γ, δ, ε, ζ, η and θ, each encoded by a different gene. Two ζ subunits have been described: TCP-1 ζ (also designated TCP-1 ζ1) and TCP-1 ζ2. TCP-1 subunits are proposed to have independent functions in folding its *in vivo* substrates, the Actins and Tubulins. TCP-1 was first identified in the mouse as relevant for tail-less and embryonic lethal phenotypes. Sequences homologous to TCP-1 have been isolated in several other species, and the yeast TCP-1 has been shown to encode a molecular chaperone for Actin and Tubulin. TCP-1 found in mammalian cells and yeast plays an important role in the folding of cytosolic proteins.

REFERENCES

1. Ahnert, V., et al. 1996. Cucumber t complex protein. Molecular cloning, bacterial expression and characterization within a 22-S cytosolic complex in cotyledons and hypocotyls. Eur. J. Biochem. 235: 114-119.
2. Iijima, M., et al. 1998. A *Dictyostelium discoideum* homologue to TCP-1 is essential for growth and development. Gene 213: 101-106.
3. Ritco-Vonsovici, M. and Willison, K.R. 2000. Defining the eukaryotic cytosolic chaperonin-binding sites in human Tubulins. J. Mol. Biol. 304: 81-98.
4. Hynes, G.M. and Willison, K.R. 2000. Individual subunits of the eukaryotic cytosolic chaperonin mediate interactions with binding sites located on subdomains of β-Actin. J. Biol. Chem. 275: 18985-18994.
5. Campos, E.G. and Hamdan, F.F. 2000. Cloning of the chaperonin t complex polypeptide 1 gene from *Schistosoma mansoni* and studies of its expression levels under heat shock and oxidative stress. Parasitol. Res. 86: 253-258.

CHROMOSOMAL LOCATION

Genetic locus: CCT6A (human) mapping to 7p11.2, CCT6B (human) mapping to 17q12; Cct6a (mouse) mapping to 5 G1.3, Cct6b (mouse) mapping to 11 C.

SOURCE

TCP-1 ζ (F-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 23-55 near the N-terminus of TCP-1 ζ of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271734 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

TCP-1 ζ (F-12) is recommended for detection of TCP-1 ζ and TCP-1 ζ2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TCP-1 ζ (F-12) is also recommended for detection of TCP-1 ζ and TCP-1 ζ2 in additional species, including equine, canine, bovine, porcine and avian.

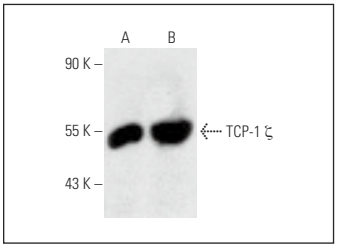
Molecular Weight of TCP-1 ζ: 60 kDa.

Positive Controls: F9 cell lysate: sc-2245, HeLa whole cell lysate: sc-2200 or Caki-1 cell lysate: sc-2224.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



TCP-1 ζ (F-12): sc-271734. Western blot analysis of TCP-1 ζ expression in HeLa (**A**) and Caki-1 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Soleilhavoup, C., et al. 2014. Ram seminal plasma proteome and its impact on liquid preservation of spermatozoa. J. Proteomics 109: 245-260.
2. Rickard, J.P., et al. 2015. The identification of proteomic markers of sperm freezing resilience in ram seminal plasma. J. Proteomics 126: 303-311.
3. Vonk, W.I.M., et al. 2020. Differentiation drives widespread rewiring of the neural stem cell chaperone network. Mol. Cell 78: 329-345.e9.
4. Bugnon Valdano, M., et al. 2021. Human papillomavirus infection requires the CCT chaperonin complex. J. Virol. 95: e01943-20.

RESEARCH USE

For research use only, not for use in diagnostic procedures.