SANTA CRUZ BIOTECHNOLOGY, INC.

TCP-1 θ (E-7): sc-377261

BACKGROUND

The protein TCP-1 (t complex polypeptide 1) is a subunit of the hetero-oligomeric 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.

CHROMOSOMAL LOCATION

Genetic locus: CCT8 (human) mapping to 21q21.3; Cct8 (mouse) mapping to 16 C3.3.

SOURCE

TCP-1 θ (E-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-29 at the N-terminus of TCP-1 θ of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TCP-1 θ (E-7) is available conjugated to agarose (sc-377261 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-377261 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377261 PE), fluorescein (sc-377261 FITC), Alexa Fluor® 488 (sc-377261 AF488), Alexa Fluor® 546 (sc-377261 AF546), Alexa Fluor® 594 (sc-377261 AF594) or Alexa Fluor® 647 (sc-377261 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377261 AF680) or Alexa Fluor® 790 (sc-377261 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377261 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 θ (E-7) is recommended for detection of TCP-1 θ 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).

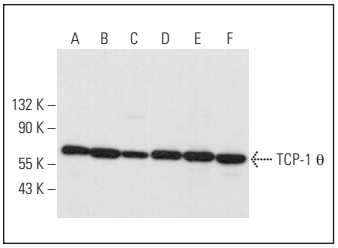
TCP-1 θ (E-7) is also recommended for detection of TCP-1 θ in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for TCP-1 θ siRNA (h): sc-43451, TCP-1 θ siRNA (m): sc-43452, TCP-1 θ shRNA Plasmid (h): sc-43451-SH, TCP-1 θ shRNA Plasmid (m): sc-43452-SH, TCP-1 θ shRNA (h) Lentiviral Particles: sc-43451-V and TCP-1 θ shRNA (m) Lentiviral Particles: sc-43452-V.

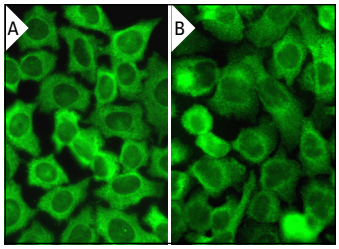
Molecular Weight of TCP-1 θ: 52-65 kDa.

Positive Controls: F9 cell lysate: sc-2245, Jurkat whole cell lysate: sc-2204 or A-431 whole cell lysate: sc-2201.

DATA



TCP-1 θ (E-7): sc-377261. Western blot analysis of TCP-1 θ expression in HeLa (**A**), Jurkat (**B**), A-431 (**C**) and F9 (**D**) whole cell lysates and mouse testis (**E**) and rat testis (**F**) tissue extracts.



TCP-1 θ (E-7): sc-377261. Immunofluorescence staining of methanol-fixed Hela (**A**) and A-431 (**B**) cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Spillman, N.J., et al. 2017. The chaperonin TRiC forms an oligomeric complex in the malaria parasite cytosol. Cell. Microbiol. 19: 10.1111/cmi.12719.
2. McClatchy, D.B., et al. 2020. Quantitative analysis of global protein stability rates in tissues. Sci. Rep. 10: 15983.
3. Collier, M.P., et al. 2021. Native mass spectrometry analyses of chaperonin complex TRiC/CCT reveal subunit N-terminal processing and re-association patterns. Sci. Rep. 11: 13084.
4. Betancourt Moreira, K., et al. 2023. A hierarchical assembly pathway directs the unique subunit arrangement of TRiC/CCT. Mol. Cell 83: 3123-3139.e8.
5. Xing, H., et al. 2025. In situ analysis reveals the TRiC duty cycle and PDCD5 as an open-state cofactor. Nature 637: 983-990.

RESEARCH USE

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