

TCP-1 α (91A): sc-53454

The Power to Question

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 ζ 1) and TCP-1 ζ 2. 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.

CHROMOSOMAL LOCATION

Genetic locus: TCP1 (human) mapping to 6q25.3; Tcp1 (mouse) mapping to 17 A1.

SOURCE

TCP-1 α (91A) is a rat monoclonal antibody raised against the C-terminal half of full length TCP of murine origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TCP-1 α (91A) is available conjugated to agarose (sc-53454 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53454 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53454 PE), fluorescein (sc-53454 FITC), Alexa Fluor® 488 (sc-53454 AF488), Alexa Fluor® 546 (sc-53454 AF546), Alexa Fluor® 594 (sc-53454 AF594) or Alexa Fluor® 647 (sc-53454 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53454 AF680) or Alexa Fluor® 790 (sc-53454 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

TCP-1 α (91A) is recommended for detection of TCP-1 α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TCP-1 α siRNA (h): sc-36620, TCP-1 α siRNA (m): sc-36621, TCP-1 α shRNA Plasmid (h): sc-36620-SH, TCP-1 α shRNA Plasmid (m): sc-36621-SH, TCP-1 α shRNA (h) Lentiviral Particles: sc-36620-V and TCP-1 α shRNA (m) Lentiviral Particles: sc-36621-V.

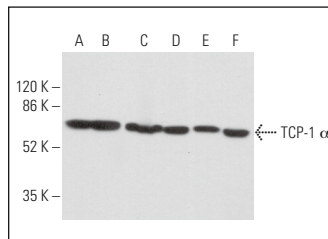
Molecular Weight of TCP-1 α : 60 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, A549 cell lysate: sc-2413 or ECV304 cell lysate: sc-2269.

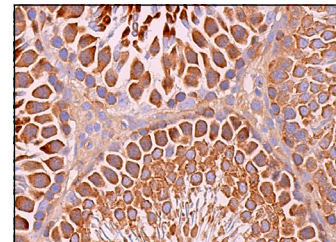
STORAGE

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

DATA



TCP-1 α (91A): sc-53454. Western blot analysis of TCP-1 α expression in ECV304 (A), HEK293T (B), MCF7 (C), Daudi (D) and A549 (E) whole cell lysates and human testis tissue extract (F).



TCP-1 α (91A): sc-53454. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat testis tissue showing cytoplasmic staining of cells in seminiferous ducts.

SELECT PRODUCT CITATIONS

- Yoshida, M., et al. 2010. Weaving hypothesis of cardiomyocyte sarcomeres: discovery of periodic broadening and narrowing of intercalated disk during volume-load change. *Am. J. Pathol.* 176: 660-678.
- Sergeeva, O.A., et al. 2013. Human CCT4 and CCT5 chaperonin subunits expressed in *Escherichia coli* form biologically active homo-oligomers. *J. Biol. Chem.* 288: 17734-17744.
- Bakthavatsalam, D., et al. 2014. Chaperonin-containing TCP-1 complex directly binds to the cytoplasmic domain of the LOX-1 receptor. *FEBS Lett.* 588: 2133-2140.
- Roh, S.H., et al. 2016. Chaperonin TRiC/CCT modulates the folding and activity of leukemogenic fusion oncoprotein AML1-ETO. *J. Biol. Chem.* 291: 4732-4741.
- Kaisari, S., et al. 2017. Role of CCT chaperonin in the disassembly of mitotic checkpoint complexes. *Proc. Natl. Acad. Sci. USA* 114: 956-961.
- Hodeify, R., et al. 2018. The CCT chaperonin is a novel regulator of Ca²⁺ signaling through modulation of Orai1 trafficking. *Sci. Adv.* 4: eaau1935.
- Ramos, J., et al. 2019. Formation of tRNA wobble inosine in humans is disrupted by a millennia-old mutation causing intellectual disability. *Mol. Cell. Biol.* 39: e00203-19.
- Sergeeva, O.A., et al. 2019. Co-expression of CCT subunits hints at TRiC assembly. *Cell Stress Chaperones* 24: 1055-1065.
- Zhang, X., et al. 2023. Dysregulation and oncogenic activities of ubiquitin specific peptidase 2a in the pathogenesis of hepatocellular carcinoma. *Am. J. Cancer Res.* 13: 2392-2409.
- Chen, X., et al. 2024. The FXR1 network acts as a signaling scaffold for actomyosin remodeling. *Cell* 187: 5048-5063.e25.

RESEARCH USE

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