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Anti-TCP1 alpha Antibody Picoband™ (monoclonal, 2E7)

Catalog # ABO14331

Product Information

Application	WB, IHC, IF, ICC, FC
Primary Accession	P17987
Host	Mouse
Isotype	Mouse IgG1
Reactivity	Human
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-TCP1 alpha Antibody Picoband™ (monoclonal, 2E7) . Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	6950
Other Names	T-complex protein 1 subunit alpha, TCP-1-alpha, CCT-alpha, Chaperonin containing T-complex polypeptide 1 subunit 1, TCP1, CCT1, CCTA
Calculated MW	60344
Application Details	Western blot, 0.1-0.5 □g/ml Immunohistochemistry (Paraffin-embedded Section), 0.5-1 □g/ml Immunocytochemistry/Immunofluorescence, 2 □g/ml Flow Cytometry, 1-3 □g/1x10^6 cells
Subcellular Localization	Cytoplasm. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome.
Source	Eukaryota
Protein Name	T-complex protein 1 subunit alpha
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Clone Names	Clone: 2E7
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human TCP1 alpha, different from the related mouse sequence by one amino acid, and from the related rat sequence by two amino acids.
Cross Reactivity	No cross-reactivity with other proteins.
Storage	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C

for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.

Protein Information

Name	TCPA
Function	Component of the chaperonin-containing T-complex (TRiC), a molecular chaperone complex that assists the folding of actin, tubulin and other proteins upon ATP hydrolysis (PubMed:25467444, PubMed:36493755, PubMed:35449234, PubMed:37193829). The TRiC complex mediates the folding of WRAP53/TCAB1, thereby regulating telomere maintenance (PubMed:25467444). As part of the TRiC complex may play a role in the assembly of BBSome, a complex involved in ciliogenesis regulating transports vesicles to the cilia (PubMed:20080638).
Cellular Location	Cytoplasm, cytosol. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome

Background

T-complex protein 1 subunit alpha is a protein that in humans is encoded by the TCP1 gene. The protein encoded by this gene is a molecular chaperone that is a member of the chaperonin containing TCP1 complex (CCT), also known as the TCP1 ring complex (TRiC). This complex consists of two identical stacked rings, each containing eight different proteins. Unfolded polypeptides enter the central cavity of the complex and are folded in an ATP-dependent manner. The complex folds various proteins, including actin and tubulin. Alternate transcriptional splice variants of this gene, encoding different isoforms, have been characterized. In addition, three pseudogenes that appear to be derived from this gene have been found.

Images

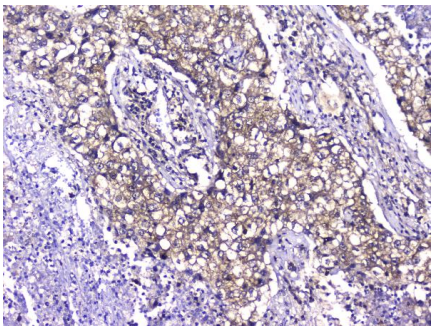

Figure 2. IHC analysis of TCP1 alpha using anti-TCP1 alpha antibody (M02389).
TCP1 alpha was detected in paraffin-embedded section of human lung cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-TCP1 alpha Antibody (M02389) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1021) with DAB as the chromogen.

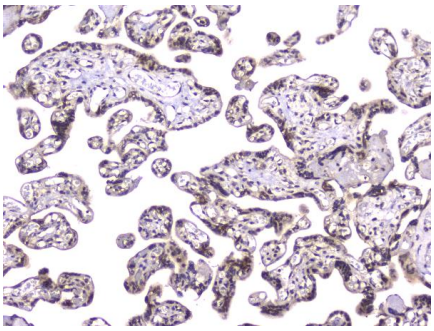

Figure 3. IHC analysis of TCP1 alpha using anti-TCP1 alpha antibody (M02389).
TCP1 alpha was detected in paraffin-embedded section of human placenta tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-TCP1 alpha Antibody (M02389) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was

developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1021) with DAB as the chromogen.

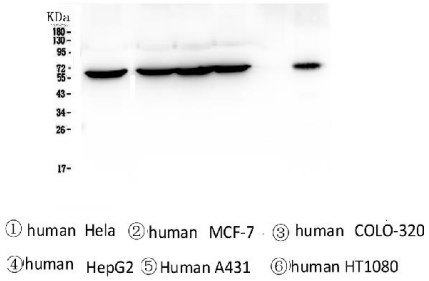

Figure 1. Western blot analysis of TCP1 alpha using anti-TCP1 alpha antibody (M02389).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.
Lane 1: human Hela whole cell lysates,
Lane 2: human MCF-7 whole cell lysates,
Lane 3: human COLO-320 whole cell lysates,
Lane 4: human HepG2 whole cell lysates,
Lane 5: human A431 whole cell lysates,
Lane 6: human HT1080 whole cell lysates.
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-TCP1 alpha antigen affinity purified monoclonal antibody (Catalog # M02389) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system.

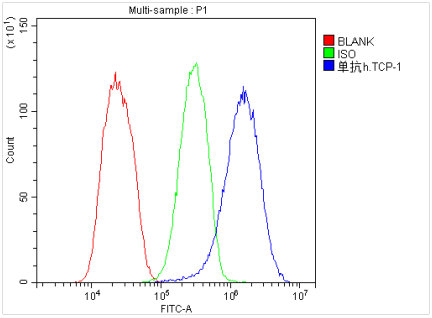

Figure 4. Flow Cytometry analysis of HepG2 cells using anti-TCP1 alpha antibody (M02389).
Overlay histogram showing HepG2 cells stained with M02389 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-TCP1 alpha Antibody (M02389,1 µg/1x10^6 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10^6 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1 µg/1x10^6) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

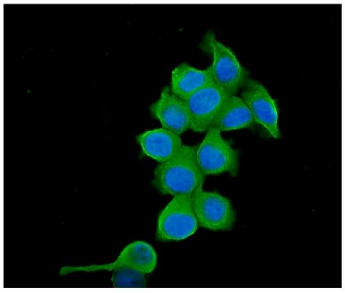

Figure 5. IF analysis of TCP1 alpha using anti-TCP1 alpha antibody (M02389).
TCP1 alpha was detected in immunocytochemical section of MCF7 cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 2 µg/mL mouse anti-TCP1 alpha Antibody (M02389) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

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