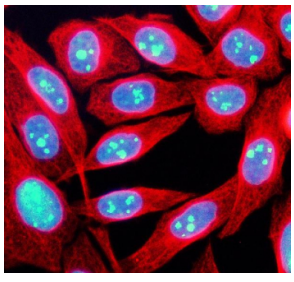
TCOF1 Antibody / Treacle protein (FY13135)

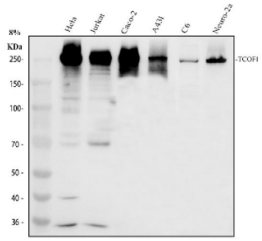
Catalog No.	Formulation	Size
FY13135	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

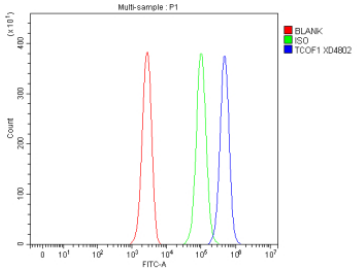
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q13428
Localization	Nuclear, Nucleolar
Applications	Western Blot: 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This TCOF1 antibody is available for research use only.



Immunofluorescent staining of TCOF1 using anti-TCOF1 antibody (green) and anti-Beta Tubulin antibody (red). TCOF1 was detected in an immunocytochemical section of human SIHA cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-TCOF1 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and Cy3 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of TCOF1 using anti-TCOF1 antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Hela whole cell lysates, Lane 2: human Jurkat whole cell lysates, Lane 3: human Caco-2 whole cell lysates, Lane 4: human whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-TCOF1 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. TCOF1/Treacle antibody detects a prominent band at ~240-250 kDa across the indicated samples. Although the predicted mass is ~150 kDa, Treacle contains long acidic repeats and extensive phosphorylation that cause markedly slower SDS-PAGE migration, a well-known property of this nucleolar protein.



Flow Cytometry analysis of Jurkat cells using anti-TCOF1 antibody. Overlay histogram showing Jurkat cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-TCOF1 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Description

TCOF1 antibody detects Treacle protein, a nucleolar phosphoprotein involved in ribosome biogenesis and craniofacial development. The UniProt recommended name is Treacle protein (TCOF1). This protein plays a key role in rRNA transcription, processing, and ribosomal subunit assembly, ensuring proper neural crest cell proliferation during embryogenesis.

Functionally, TCOF1 antibody identifies a 1,488-amino-acid protein localized to the nucleolus, where it interacts with upstream binding factor (UBF) and RNA polymerase I machinery. TCOF1 facilitates 47S pre-rRNA transcription and processing, linking nucleolar activity to cell growth and differentiation. It also participates in DNA damage response by stabilizing nucleolar integrity under stress.

The TCOF1 gene is located on chromosome 5q32-q33.1 and is highly expressed in neural crest-derived and proliferative tissues. Proper TCOF1 function is essential for craniofacial bone and cartilage formation, as neural crest cells depend on efficient ribosome production to sustain rapid proliferation.

Pathologically, haploinsufficiency or mutations in TCOF1 cause Treacher Collins syndrome (TCS), a congenital craniofacial disorder characterized by hypoplasia of facial bones and cleft palate. Defective TCOF1 disrupts ribosome biogenesis, triggering nucleolar stress and apoptosis in neural crest progenitors. Research using TCOF1 antibody supports studies in ribosome assembly, developmental biology, and congenital disease mechanisms.

TCOF1 antibody is validated for western blotting, immunofluorescence, and immunohistochemistry to detect nucleolar proteins involved in ribosome production. NSJ Bioreagents provides TCOF1 antibody reagents optimized for cell biology, developmental genetics, and RNA metabolism research.

Structurally, Treacle protein contains multiple serine-rich and acidic domains that mediate nucleolar localization and protein-protein interactions. This antibody enables analysis of TCOF1's regulatory role in ribosome synthesis and neural crest development.

Application Notes

Optimal dilution of the TCOF1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human TCOF1 recombinant protein (Position: M1-K1340) was used as the immunogen for the TCOF1 antibody.

Storage

After reconstitution, the TCOF1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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