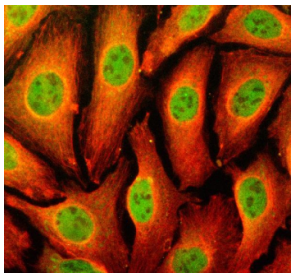
TFEC Antibody / Transcription factor EC (FY12552)

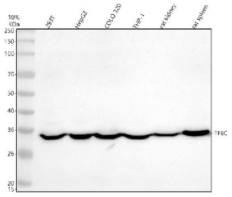
Catalog No.	Formulation	Size
FY12552	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

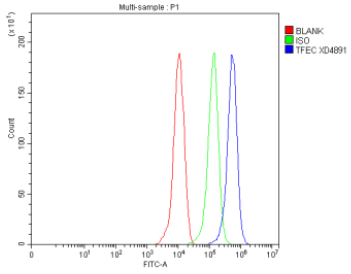
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	O14948
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This TFEC antibody is available for research use only.



Immunofluorescent staining of TFEC using anti-TFEC antibody (green) and anti-Beta Tubulin antibody (red). TFEC was detected in an immunocytochemical section of U2OS 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-TFEC 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. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of TFEC using anti-TFEC antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human 293T whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human COLO-320 whole cell lysates, Lane 4: human THP-1 whole cell lysates, Lane 5: rat kidney tissue lysates, Lane 6: rat spleen tissue 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-TFEC 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. TFEC (~39 kDa predicted) was detected as a single band at ~35 kDa, consistent with published reports that endogenous TFEC migrates near 35-39 kDa and can present additional higher species in some contexts.



Flow Cytometry analysis of THP-1 cells using anti-TFEC antibody. Overlay histogram showing THP-1 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-TFEC 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

TFEC antibody detects Transcription factor EC, a basic helix-loop-helix leucine zipper (bHLH-LZ) transcription factor that regulates gene expression in macrophages, osteoclasts, and melanocytes. TFEC belongs to the MiT/TFE family, which includes MITF, TFE3, and TFEB, all of which coordinate transcriptional responses to nutrient availability, lysosomal function, and immune signaling. The TFEC antibody is widely used in transcriptional regulation, macrophage differentiation, and cancer research.

TFEC is encoded by the TFEC gene located on human chromosome 7q31.2. The protein is approximately 38 kilodaltons and contains a conserved DNA-binding bHLH-LZ domain that mediates binding to E-box sequences in gene promoters. TFEC forms homodimers or heterodimers with other MiT family members, allowing versatile regulation of target gene networks. It localizes to the nucleus and is activated by phosphorylation under stress or inflammatory conditions.

The TFEC antibody detects a 38 kilodalton protein by western blot and demonstrates nuclear staining in macrophages and osteoclast precursors. TFEC regulates transcription of lysosomal and autophagy-related genes, participating in cellular adaptation to nutrient deprivation. It also modulates inflammatory gene expression through cooperation with PU.1 and other macrophage-specific transcription factors, promoting cytokine and chemokine production.

In melanocytes, TFEC contributes to pigment cell differentiation and interacts with MITF to balance melanogenic gene expression. Dysregulation of TFEC has been implicated in cancer, where fusion genes involving TFEC drive aberrant transcriptional programs. Altered expression is also associated with inflammatory and metabolic disorders due to disrupted lysosomal signaling and autophagic control.

TFEC integrates environmental and metabolic signals to maintain homeostasis in immune and pigment cells. NSJ Bioreagents provides a validated TFEC antibody optimized for western blot, immunofluorescence, and transcriptional studies, supporting detailed analysis of gene regulation, macrophage biology, and MiT/TFE family signaling.

Application Notes

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

Immunogen

E.coli-derived human TFEC recombinant protein (Position: Q27-D311) was used as the immunogen for the TFEC antibody.

Storage

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