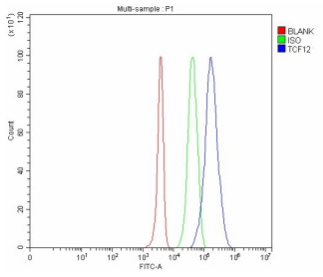
TCF12 Antibody / Transcription factor 12 (FY12003)

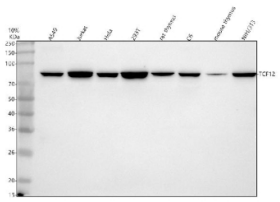
Catalog No.	Formulation	Size
FY12003	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.	100 ug

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	Q99081
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This TCF12 antibody is available for research use only.



Flow Cytometry analysis of 293T cells using anti-TCF12 antibody. Overlay histogram showing 293T 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-TCF12 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.



Western blot analysis of TCF12 using anti-HEB/TCF12 antibody. Lane 1: human whole cell lysates, Lane 2: human Jurkat whole cell lysates, Lane 3: human Hela whole cell lysates, Lane 4: human 293T whole cell lysates, Lane 5: rat thymus tissue lysates, Lane 6: rat C6 whole cell lysates, Lane 7: mouse thymus tissue lysates, Lane 8: mouse NIH/3T3 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-TCF12 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 enhanced chemiluminescent. Expected size of TCF12 ~73 kDa (canonical isoform). Observed band at ~85 kDa is consistent with validated antibody specifications (~80-85 kDa) and likely reflects expression of a longer splice isoform and/or post-translationally modified form of TCF12.

Description

TCF12 antibody detects Transcription factor 12, encoded by the TCF12 gene. Transcription factor 12 is a basic helix-loop-helix transcription factor that regulates gene expression during development, differentiation, and tissue homeostasis. TCF12 antibody provides researchers with a specific reagent for studying transcriptional regulation, developmental pathways, and disease mechanisms involving abnormal transcription factor activity.

Transcription factor 12 dimerizes with other basic helix-loop-helix proteins to bind E-box DNA sequences and regulate gene transcription. Research using TCF12 antibody has shown that it partners with proteins such as E47, E12, and MyoD to control cell fate decisions. Through these interactions, TCF12 coordinates gene networks that drive muscle differentiation, neural development, and hematopoiesis.

Studies with TCF12 antibody have revealed that it is essential in neural crest development, craniofacial morphogenesis, and myogenesis. Mutations in the TCF12 gene cause craniosynostosis, a disorder characterized by premature fusion of cranial sutures. This highlights the importance of Transcription factor 12 in skeletal and craniofacial development. Its broad role in embryonic patterning underscores its significance in developmental biology.

In cancer research, dysregulation of TCF12 contributes to oncogenesis. Research using TCF12 antibody has shown that aberrant expression promotes epithelial-mesenchymal transition, migration, and invasion in cancers such as glioblastoma and colorectal carcinoma. By altering transcriptional programs, TCF12 contributes to tumor progression and poor clinical outcomes.

Beyond cancer, TCF12 has been linked to immune function. Studies with TCF12 antibody have revealed that it regulates lymphocyte development and differentiation. By controlling gene expression in immune progenitors, Transcription factor 12 ensures proper immune cell lineage commitment and functional competence. This expands its relevance to immunology.

TCF12 antibody is widely applied in chromatin immunoprecipitation, western blotting, and immunohistochemistry. Chromatin immunoprecipitation identifies DNA targets, western blotting quantifies protein expression, and immunohistochemistry reveals nuclear localization in tissue. These approaches make TCF12 antibody a versatile tool in developmental and disease biology.

By supplying validated TCF12 antibody reagents, NSJ Bioreagents supports studies into transcriptional control, development, and pathology. Detection of Transcription factor 12 provides researchers with insight into how helix-loop-helix proteins regulate gene expression across diverse biological systems.

Application Notes

Optimal dilution of the TCF12 antibody should be determined by the researcher.

Immunogen

E.coli-derived human HEB/TCF12 recombinant protein (Position: S67-G300) was used as the immunogen for the TCF12 antibody.

Storage

After reconstitution, the TCF12 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.