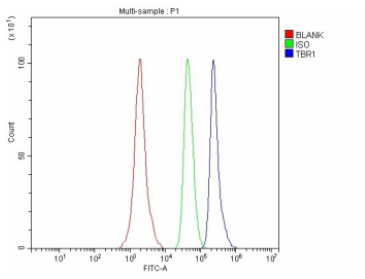
TBR1 Antibody / T-box brain protein 1 (FY13103)

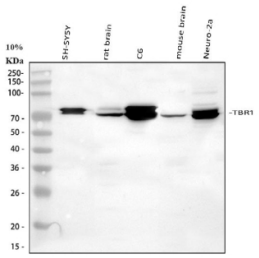
Catalog No.	Formulation	Size
FY13103	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q16650
Applications	Western Blot: 0.25-0.5ug/ml Immunohistochemistry: 2-5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This TBR1 antibody is available for research use only.



Flow Cytometry analysis of SH-SY5Y cells using anti-TBR1 antibody. Overlay histogram showing SH-SY5Y 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-TBR1 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 TBR1 using anti-TBR1 antibody. Lane 1: human SH-SY5Y whole cell lysates, Lane 2: rat brain tissue lysates, Lane 3: rat C6 whole cell lysates, Lane 4: mouse brain tissue lysates, Lane 5: mouse Neuro-2a 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-TBR1 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. TBR1 antibody detects a doublet at ~70-75 kDa across the indicated brain-derived samples and cell lines. TBR1â€™s calculated mass is ~74 kDa; the closely spaced pair is consistent with differential post-translational modification (commonly phosphorylation) and is frequently observed for this nuclear transcription factor.

Description

TBR1 antibody detects T-box brain protein 1, a neuron-specific transcription factor that regulates cortical development and neuronal differentiation. The UniProt recommended name is T-box brain protein 1 (TBR1). This DNA-binding transcription factor belongs to the T-box family and is essential for neocortical layer specification, axonal guidance, and synaptic connectivity.

Functionally, TBR1 antibody identifies a 682-amino-acid nuclear protein that binds T-box DNA consensus sequences to regulate the expression of genes involved in neuronal subtype identity and projection targeting. TBR1 interacts with transcriptional co-regulators such as CASK, FOXP2, and SOX5, forming complexes that guide early cortical neuron differentiation and maturation.

The TBR1 gene is located on chromosome 2q24.2 and is expressed predominantly in postmitotic glutamatergic neurons of the developing and adult cerebral cortex. It functions as a key determinant of cortical layer VI identity and regulates axonal projections to subcortical targets. TBR1 is a downstream effector of the transcription factor PAX6, linking progenitor differentiation to neuronal specialization.

Pathologically, TBR1 mutations have been associated with autism spectrum disorders, intellectual disability, and cortical malformations. Its dysregulation disrupts neuronal migration, synapse formation, and interhemispheric connectivity. Research using TBR1 antibody provides insights into neurodevelopmental biology, transcriptional regulation, and disease mechanisms involving cortical circuitry.

TBR1 antibody is suitable for western blotting, immunofluorescence, and immunohistochemistry to label developing cortical neurons and nuclear transcription factors. NSJ Bioreagents offers validated TBR1 antibody reagents optimized for studies in neurogenesis, brain development, and transcriptional control.

Structurally, T-box brain protein 1 contains a central T-box DNA-binding domain that mediates sequence-specific gene regulation. It acts as both an activator and repressor depending on its interacting partners. This antibody enables researchers to explore TBR1's roles in cortical specification and neural differentiation.

Application Notes

Optimal dilution of the TBR1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human TBR1 recombinant protein (Position: K15-S682) was used as the immunogen for the TBR1 antibody.

Storage

After reconstitution, the TBR1 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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