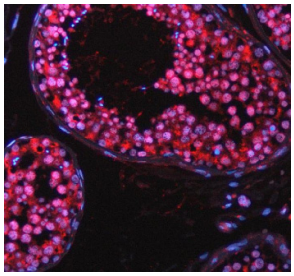
TAOK2 Antibody / TAO kinase 2 (FY13288)

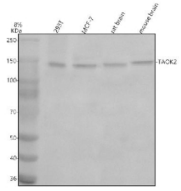
Catalog No.	Formulation	Size
FY13288	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

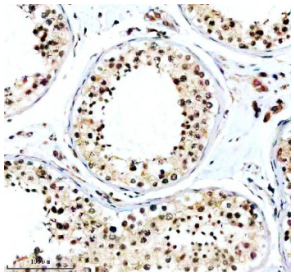
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9UL54
Localization	Nuclear, cytoplasmic
Applications	Western Blot: 0.25-0.5ug/ml Immunohistochemistry: 2-5ug/ml Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This TAOK2 antibody is available for research use only.



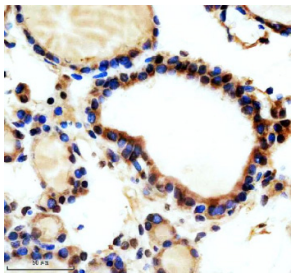
Immunofluorescent staining of TAOK2 using anti-TAOK2 antibody (red). TAOK2 was detected in a paraffin-embedded section of human testis tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 5 ug/ml rabbit anti-TAOK2 antibody overnight at 4oC. Cy3 Conjugated Goat Anti-Rabbit IgG was 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.



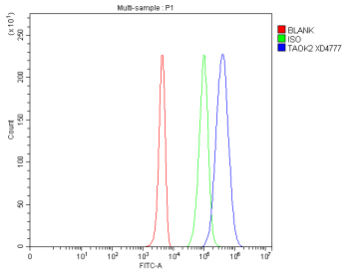
Western blot analysis of TAOK2 using anti-TAOK2 antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human 293T whole cell lysates, Lane 2: human MCF-7 whole cell lysates, Lane 3: rat brain tissue lysates, Lane 4: mouse brain tissue 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-TAOK2 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. The expected molecular weight of TAOK2 is ~138 kDa.



Immunohistochemical staining of TAOK2 using anti-TAOK2 antibody. TAOK2 was detected in a paraffin-embedded section of human testis tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-TAOK2 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



Immunohistochemical staining of TAOK2 using anti-TAOK2 antibody. TAOK2 was detected in a paraffin-embedded section of human thyroid cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-TAOK2 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



Flow Cytometry analysis of 293T cells using anti-TAOK2 antibody. Overlay histogram showing 293T cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-TAOK2 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

TAOK2 antibody recognizes TAO kinase 2, a serine/threonine-protein kinase encoded by the TAOK2 gene, which functions as an upstream activator in multiple MAPK signaling cascades. TAOK2 (Thousand And One Kinase 2) belongs to the STE20 kinase family and regulates cytoskeletal dynamics, stress response pathways, and neuronal development. The kinase localizes to both the cytoplasm and centrosomes, where it phosphorylates downstream kinases such as MAP2K3 and MAP2K6 to activate p38 MAPK signaling. Through these pathways, TAOK2 influences apoptosis, differentiation, and responses to cellular stress.

TAOK2 plays a critical role in neuronal morphology and synaptic function. It regulates microtubule stability and axon elongation through phosphorylation of cytoskeletal proteins, including microtubule-associated proteins. In developing neurons, TAOK2 helps establish dendritic spine structure and connectivity, contributing to proper neural circuit formation. Mutations and deletions of TAOK2 have been linked to neurodevelopmental disorders such as autism spectrum disorder (ASD) and schizophrenia, underscoring its importance in brain development. Studies show that TAOK2 interacts with autism risk proteins including SHANK1 and DISC1 and modulates signaling through Rho GTPases and JNK kinases.

The TAOK2 gene is located on chromosome 16p11.2, a genomic region frequently associated with copy number variations implicated in neurodevelopmental conditions. TAOK2 exists in several alternatively spliced isoforms with distinct subcellular localization and regulatory functions. The full-length protein contains an N-terminal kinase domain and a C-terminal coiled-coil domain that mediates protein-protein interactions. TAOK2 activation can be induced by oxidative stress, UV radiation, or cytokine stimulation, linking it to broader cellular stress responses and apoptosis regulation.

Immunohistochemical staining using TAOK2 antibody shows expression in brain tissue, particularly in the cortex and hippocampus, as well as in heart and testis. It has been used to study MAPK pathway signaling, neuronal cytoskeleton remodeling, and stress-induced apoptosis. TAOK2 antibody from NSJ Bioreagents is a valuable tool for investigating kinase-mediated signal transduction, neuronal development, and neuropsychiatric disease mechanisms.

Application Notes

Optimal dilution of the TAOK2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human TAOK2 recombinant protein (Position: H502-H1142) was used as the immunogen for the TAOK2 antibody.

Storage

After reconstitution, the TAOK2 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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