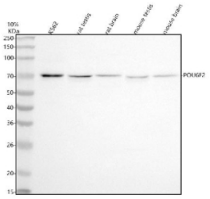
POU6F2 Antibody / POU class 6 homeobox 2 (FY12673)

Catalog No.	Formulation	Size
FY12673	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
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	P78424
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This POU6F2 antibody is available for research use only.



Western blot analysis of POU6F2 using anti-POU6F2 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human K562 whole cell lysates, Lane 2: rat testis tissue lysates, Lane 3: rat brain tissue lysates, Lane 4: mouse testis tissue lysates, Lane 5: 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-POU6F2 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. A specific band was detected for POU6F2 at approximately 73 kDa. The expected molecular weight of POU6F2 is ~73 kDa.

Description

POU6F2 antibody recognizes POU class 6 homeobox 2, a transcription factor belonging to the POU family of DNA-binding proteins that play essential roles in cell fate determination and tissue-specific gene expression. POU6F2 is expressed in the developing and adult central nervous system, particularly in retinal ganglion cells and forebrain neurons,

where it contributes to neuronal differentiation and identity maintenance. The protein contains both a POU-specific domain and a POU homeodomain that cooperate to bind DNA at specific octamer motifs, allowing regulation of downstream target genes involved in neural patterning and axonal development. Studies suggest that POU6F2 participates in transcriptional programs that coordinate neuronal subtype specification and may influence visual pathway formation.

In the retina, POU6F2 is expressed in a subset of ganglion cells responsible for image-forming visual circuits. Its selective expression pattern makes it a useful molecular marker for differentiating retinal ganglion cell subpopulations, and recent transcriptomic analyses have identified POU6F2 as a determinant of cell-specific gene networks underlying visual processing. In the forebrain, POU6F2 has been implicated in regulating genes involved in synaptic transmission and neuronal connectivity. The protein may also interact with other POU domain family members such as BRN2 (POU3F2) and OCT1 (POU2F1), reflecting overlapping regulatory functions across neural lineages.

Beyond the nervous system, POU6F2 expression has been observed in certain cancers, including renal cell carcinoma and medulloblastoma, suggesting a potential role in tumor cell proliferation and differentiation control. Altered POU6F2 expression may reflect reactivation of developmental transcriptional programs in cancer cells. Because of its restricted tissue expression and regulatory potential, the POU6F2 antibody is a valuable research tool in developmental neurobiology, oncology, and retinal physiology. It is employed in western blot, immunohistochemistry, and immunofluorescence assays to identify POU6F2-positive neurons and to study transcriptional control mechanisms governing neural development.

POU6F2 is encoded by the POU6F2 gene located on chromosome 7p14.1, producing a protein of approximately 655 amino acids. The gene is conserved across vertebrates, indicating functional importance in neural specification. Functional studies demonstrate that POU6F2 binds to promoter regions of neuronal genes, influencing axon guidance and dendritic patterning. Its nuclear localization and transcriptional activity are tightly regulated during development, with expression diminishing as neurons mature. The POU6F2 antibody enables researchers to monitor these changes and explore POU-domain mediated transcriptional hierarchies within the nervous system. NSJ Bioreagents provides this antibody validated for multiple assay formats, ensuring consistent and specific detection.

Application Notes

Optimal dilution of the POU6F2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human POU6F2 recombinant protein (Position: E24-Q446) was used as the immunogen for the POU6F2 antibody.

Storage

After reconstitution, the POU6F2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.