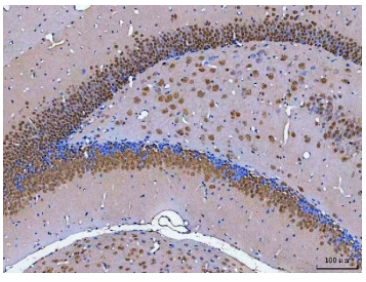
Rbfox3 Antibody / Fox3 / Neun (RQ6896)

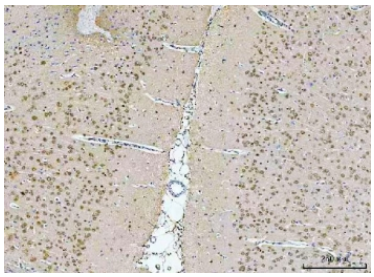
Catalog No.	Formulation	Size
RQ6896	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

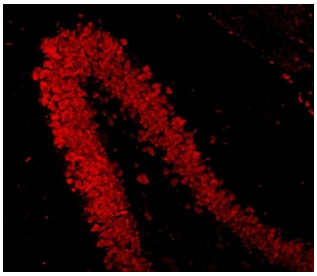
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q8BIF2
Localization	Nucleus, Cytoplasm
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml Direct ELISA: 0.1-0.5ug/ml
Limitations	This Rbfox3 antibody is available for research use only.



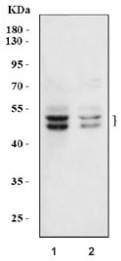
Rbfox3 Antibody Mouse Brain Immunohistochemistry. IHC staining of FFPE mouse brain tissue with Rbfox3 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



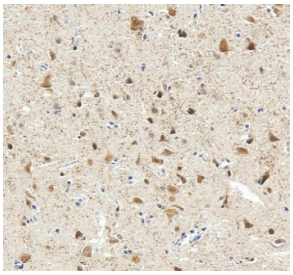
Rbfox3 Antibody Rat Brain Immunohistochemistry. IHC staining of FFPE rat brain tissue with Rbfox3 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Rbfox3 Antibody Rat Brain IF. Immunofluorescent staining of FFPE rat brain tissue with Rbfox3 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Rbfox3 Antibody Rat / Mouse Brain WB. Western blot analysis of rat brain (lane 1) and mouse brain (lane 2) lysates using the Rbfox3 (NeuN) antibody. Two closely spaced bands are present at approximately 46 to 50 kDa, corresponding to the reported NeuN splice isoforms commonly observed in rodent brain.



Rbfox3 Antibody Human Brain Immunohistochemistry. IHC staining of FFPE human brain tissue with Rbfox3 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

Rbfox3 antibody recognizes RNA binding protein fox-1 homolog 3, widely known as Fox3 and NeuN, a neuron-specific RNA binding protein encoded by the RBFOX3 gene. NeuN serves as a robust marker for postmitotic neurons and is expressed throughout the central and peripheral nervous systems. The human RBFOX3 gene is located on chromosome 17q25.3 and is part of the Rbfox family of splicing regulators, which also includes RBFOX1 and RBFOX2. Fox3 protein localizes primarily to neuronal nuclei, with some cytoplasmic distribution depending on developmental stage, cell type, and isoform expression. High expression is found in cortical neurons, hippocampal pyramidal cells, cerebellar granule cells, brainstem nuclei, and many sensory neuron populations.

NeuN functions as a regulator of alternative splicing in neurons. Through its RNA recognition motif, it binds UGCAUG elements in target transcripts and modulates splicing patterns involved in neuronal differentiation, synaptogenesis, and activity-dependent responses. Rbfox family proteins participate in pathways that influence ion channel diversity, synaptic strength, axon guidance, and neuronal survival. NeuN plays key roles in establishing the mature neuronal transcriptome by supporting the inclusion or exclusion of exons required for neuronal excitability, cytoskeletal organization, and membrane trafficking. Its consistent expression in postmitotic neurons makes it a cornerstone marker in neurodevelopmental, neurodegenerative, and injury-related research.

At the subcellular level, Fox3/NeuN predominantly localizes to the nucleus where it co-localizes with splicing machinery components, transcriptional regulators, and nuclear matrix structures. Some isoforms display partial cytoplasmic localization and may influence mRNA stability or translation. Fox3/NeuN is absent from certain neuronal populations, including Purkinje cells, olfactory receptor neurons, and retinal photoreceptors, highlighting cell-type specific expression. During development, RBFOX3 expression increases as neural progenitors exit the cell cycle and differentiate into mature neurons. This developmental trajectory mirrors the shift toward neuron-specific splicing programs that define identity and connectivity.

NeuN is highly relevant in disease research. Loss or mislocalization of RBFOX3 has been associated with neurodegenerative disorders, traumatic brain injury, epilepsy, and neurodevelopmental syndromes. Perturbation of Rbfox splicing networks can alter synaptic components, ion channel expression, and cortical circuitry. Reduced NeuN immunoreactivity is frequently used as an indicator of neuronal loss in experimental models of stroke, excitotoxicity, and neuroinflammation. In cancer biology, RBFOX3 expression has been implicated in neuronal differentiation states within neuroblastoma and related tumors.

This Rbfox3 antibody is suitable for detecting NeuN expression in research focused on neuronal identity, brain development, splicing regulation, neurodegeneration, circuitry mapping, and central nervous system injury models. It supports studies examining neuronal population dynamics, transcriptome maturation, and tissue architecture within both developing and adult nervous systems. NSJ Bioreagents provides this reagent within its neuroscience-focused antibody portfolio.

For a reference Rbfox3 antibody supporting consistent detection of Fox3 / Neun in neuronal studies, see clone AO-18.

Application Notes

Optimal dilution of the Rbfox3 antibody should be determined by the researcher.

Immunogen

Recombinant mouse protein (amino acids H28-D304) was used as the immunogen for the Rbfox3 antibody.

Storage

After reconstitution, the Rbfox3 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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