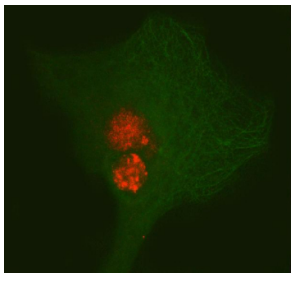
PAX3 Antibody / Paired box protein Pax-3 (FY13236)

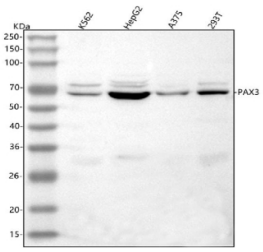
Catalog No.	Formulation	Size
FY13236	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
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	P23760
Localization	Nuclear
Applications	Western Blot: 0.25-0.5ug/ml Immunocytochemistry: 5ug/ml Immunofluorescence: 5ug/ml ELISA: 0.1-0.5ug/ml
Limitations	This PAX3 antibody is available for research use only.



Immunofluorescent staining of PAX3 using anti-PAX3 antibody (red) and anti-Beta Tubulin antibody (green). PAX3 was detected in immunocytochemical section of cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-PAX3 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. Cy3 Conjugated Goat Anti-Rabbit IgG and DyLight 488 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of PAX3 using anti-PAX3 antibody. Lane 1: human K562 whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human whole cell lysates, Lane 4: human 293T 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-PAX3 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. Western blot detection of PAX3 shows a primary band at ~69 kDa across multiple human cell lines, with weaker higher-molecular-weight species. Although the predicted mass of PAX3 is ~53 kDa, the protein frequently migrates between 65-70 kDa due to phosphorylation and its proline-rich composition.

Description

PAX3 antibody detects Paired box protein Pax-3, a transcription factor essential for embryonic development, neural crest differentiation, and myogenesis. The UniProt recommended name is Paired box protein Pax-3 (PAX3). This nuclear DNA-binding protein functions as a master regulator of gene expression programs controlling cell fate and migration during early development.

Functionally, PAX3 antibody identifies a 479-amino-acid transcription factor containing both a paired DNA-binding domain and a homeobox domain. PAX3 regulates genes involved in neural crest formation, muscle lineage specification, and melanocyte development. It acts in concert with cofactors such as SOX10, MITF, and FOXO1 to coordinate developmental gene networks. In muscle precursors, PAX3 activates MyoD and MYF5, driving myogenic commitment and differentiation.

The PAX3 gene is located on chromosome 2q36.1 and is highly expressed in the dorsal neural tube, somites, and limb buds during embryogenesis. It remains active in satellite cells and neural crest-derived lineages in adult tissues. PAX3 activity is modulated by phosphorylation, sumoylation, and interaction with chromatin-remodeling complexes.

Pathologically, mutations in PAX3 cause Waardenburg syndrome types 1 and 3, characterized by hearing loss and pigmentary abnormalities. Chromosomal translocations involving PAX3 (such as PAX3-FOXO1 fusions) drive alveolar rhabdomyosarcoma, a pediatric soft tissue cancer. Aberrant PAX3 signaling also contributes to melanoma progression by enhancing cell migration and survival. Research using PAX3 antibody supports studies in developmental biology, stem cell regulation, and cancer genetics.

PAX3 antibody is validated for western blotting, immunofluorescence, and immunohistochemistry to detect transcription factors in neural and muscle tissues. NSJ Bioreagents provides PAX3 antibody reagents optimized for research in differentiation, transcriptional regulation, and oncogenesis.

Structurally, Paired box protein Pax-3 contains two DNA-binding domains-a paired domain and a homeodomain-linked by a flexible region that allows diverse DNA sequence recognition. The C-terminal transactivation domain mediates recruitment of coactivators and repressors. This antibody enables precise analysis of PAX3's regulatory functions in development and disease.

Application Notes

Optimal dilution of the PAX3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human PAX3 recombinant protein (Position: Q306-E420) was used as the immunogen for the PAX3 antibody.

Storage

After reconstitution, the PAX3 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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