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
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
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.

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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