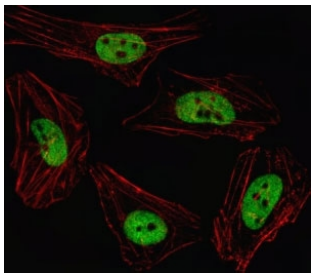
PITX2 Antibody / Pituitary homeobox 2 (F43713)

Catalog No.	Formulation	Size
F43713-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F43713-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Predicted Reactivity	Chicken, Mouse, Rat, Xenopus, Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity
UniProt	Q99697
Applications	Immunofluorescence: 1:10-1:50 Western blot: 1:1000
Limitations	This PITX2 antibody is available for research use only.



Fluorescent image of HeLa cell stained with PITX2 antibody. Alexa Fluor 488 conjugated secondary (green) was used. Cytoplasmic actin was counterstained with Alexa Fluor 555 (red) conjugated Phalloidin. PITX2 immunoreactivity is localized to the nucleus.



Western blot analysis of PITX2 antibody and CEM lysate. Predicted molecular weight ~35 kDa.

Description

PITX2 antibody targets Pituitary homeobox 2, a paired-like homeodomain transcription factor encoded by the PITX2 gene. Pituitary homeobox 2 functions as a sequence-specific DNA-binding protein that regulates transcriptional programs essential for embryonic patterning and tissue specification. As a member of the homeobox protein family, PITX2 plays a key role in translating developmental signaling cues into stable gene expression outcomes.

Biologically, Pituitary homeobox 2 is best known for its involvement in left-right axis determination and asymmetric organ development. It contributes to transcriptional regulation in cardiac morphogenesis, ocular development, and craniofacial patterning. PITX2 activity is tightly controlled during development, where precise spatial and temporal expression is required to ensure proper tissue organization and differentiation.

At the cellular level, PITX2 localizes primarily to the nucleus, consistent with its role as a transcriptional regulator. Its function depends on coordinated interactions with cofactors and chromatin-associated proteins that modulate promoter accessibility and transcriptional output. A PITX2 antibody supports studies aimed at understanding transcription factor dynamics, developmental gene regulation, and nuclear signaling pathways.

From a disease perspective, dysregulation of PITX2 has been linked to congenital malformations and developmental syndromes, most notably Axenfeld-Rieger syndrome. Altered PITX2 expression has also been examined in cancer research, where aberrant developmental transcription programs may be reactivated and contribute to tumor progression or cellular plasticity. These observations underscore the importance of PITX2 in maintaining normal developmental and transcriptional control mechanisms.

At the molecular level, Pituitary homeobox 2 contains a conserved homeodomain responsible for DNA binding, along with regulatory regions that influence transcriptional specificity and protein interactions. Isoform diversity and regulatory modifications can affect PITX2 behavior in experimental systems without altering its core transcriptional function. PITX2 antibody reagents support research applications focused on developmental biology and transcriptional regulation, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Titration of the PITX2 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 122-151 from the human protein was used as the immunogen for this PITX2 antibody.

Storage

Aliquot the PITX2 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

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