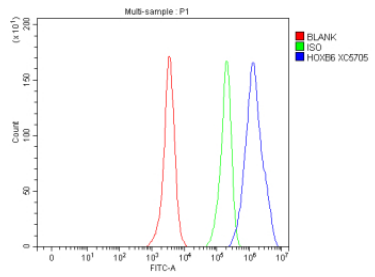
HOXB6 Antibody / Homeobox protein Hox-B6 (FY12701)

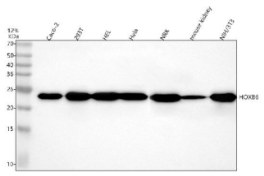
Catalog No.	Formulation	Size
FY12701	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
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	P17509
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This HOXB6 antibody is available for research use only.



Flow Cytometry analysis of Hela cells using anti-HOXB6 antibody. Overlay histogram showing Hela cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-HOXB6 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of HOXB6 using anti-HOXB6 antibody. Electrophoresis was performed on a 12% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Caco-2 whole cell lysates, Lane 2: human 293T whole cell lysates, Lane 3: human HEL whole cell lysates, Lane 4: human Hela whole cell lysates, Lane 5: rat NRK whole cell lysates, Lane 6: mouse kidney tissue lysates, Lane 7: mouse NIH/3T3 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-HOXB6 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 HOXB6 at approximately 25 kDa. The expected molecular weight of HOXB6 is ~25 kDa.

Description

HOXB6 antibody recognizes Homeobox protein Hox-B6, a sequence-specific transcription factor that directs developmental patterning and cell differentiation. Encoded by the HOXB6 gene on chromosome 17q21.32, this protein belongs to the homeobox (HOX) family of transcription factors that determine positional identity along the anterior-posterior axis during embryogenesis. HOXB6 contains a highly conserved homeodomain that binds specific DNA sequences to regulate expression of genes involved in morphogenesis, hematopoiesis, and organ development. It acts downstream of retinoic acid signaling and cooperates with cofactors such as PBX1 and MEIS1 to control target gene activation.

During development, HOXB6 expression is restricted to specific regions of the embryo corresponding to the thoracic and lumbar domains. It contributes to the specification of vertebrae and rib patterning and influences limb and neural development. In adult tissues, HOXB6 expression is largely downregulated but can be reactivated in certain cell lineages, particularly within the hematopoietic system. Overexpression of HOXB6 has been observed in leukemias, where it drives proliferation and disrupts differentiation by altering transcriptional programs that control cell fate.

The HOXB6 antibody is a valuable reagent for developmental biology and cancer research. Western blot analysis detects a 25 kilodalton band corresponding to HOXB6, and immunohistochemical staining shows nuclear localization consistent with its role as a transcription factor. The antibody supports studies examining HOX gene regulation, retinoic acid signaling, and transcriptional networks controlling tissue differentiation. In experimental systems, HOXB6 expression is used as a marker of posterior HOX cluster activation, which defines segmental identity and developmental timing.

Functionally, HOXB6 binds to enhancer regions of genes that regulate cell cycle progression and differentiation, including MYC and CDKN1A. Dysregulation of HOXB6 is implicated in oncogenesis, particularly in acute myeloid leukemia, where it cooperates with MEIS1 to promote leukemic transformation. In solid tumors, aberrant HOXB6 expression correlates with invasive potential and epithelial-mesenchymal transition. The HOXB6 antibody facilitates detection of these expression changes, enabling characterization of HOX-mediated gene regulation in both normal and malignant cells. NSJ Bioreagents provides this antibody validated for its applications, supporting research into developmental biology and transcriptional control.

Application Notes

Optimal dilution of the HOXB6 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human HOXB6 was used as the immunogen for the HOXB6 antibody.

Storage

After reconstitution, the HOXB6 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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