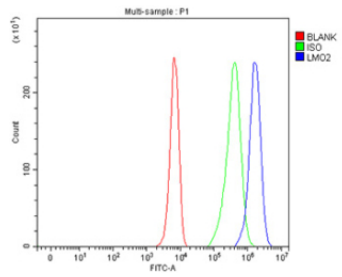
LMO2 Antibody / Rhombotin 2 (FY12207)

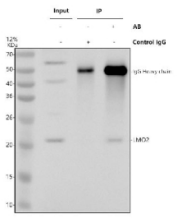
Catalog No.	Formulation	Size
FY12207	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

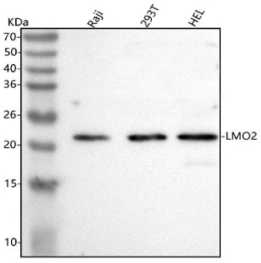
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P25791
Applications	Western Blot: 0.25-0.5ug/ml Immunoprecipitation: 2-4ug/500ug of lysate Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This LMO2 antibody is available for research use only.



Flow Cytometry analysis of K562 cells using anti-LMO2 antibody. Overlay histogram showing K562 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-LMO2 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 (Red line) was also used as a control.



Immunoprecipitating (IP) LMO2 in K562 whole cell lysate. Western blot analysis of LMO2 using anti-LMO2 antibody; Lane 1: K562 whole cell lysates (30ug); Lane 2: Rabbit control IgG instead of anti-LMO2 antibody in K562 whole cell lysate; Lane 3: anti-LMO2 antibody (2ug) + K562 whole cell lysate (500ug). After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti-LMO2 antibody at a dilution of 0.5 ug/ml and probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate. The expected band size for LMO2 is at 18 kDa.



Western blot analysis of LMO2 using anti-LMO2 antibody. Lane 1: human Raji whole cell lysates, Lane 2: human 293T whole cell lysates, Lane 3: human HEL 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-LMO2 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. The expected band size for LMO2 is at 18 kDa.

Description

LMO2 antibody detects LIM domain only protein 2, encoded by the LMO2 gene on chromosome 11p13. LMO2 antibody is commonly applied in research on hematopoiesis, transcriptional regulation, and cancer biology. LMO2 is a transcriptional co-regulator without intrinsic DNA-binding activity; instead, it functions as an adaptor protein that brings together DNA-binding transcription factors within multiprotein complexes. It plays essential roles in hematopoietic stem cell maintenance, vascular development, and T-cell differentiation. Expression is high in hematopoietic progenitors and endothelial cells, but tightly regulated, as dysregulation promotes oncogenesis.

Structurally, LMO2 is a small nuclear protein of ~158 amino acids containing two tandem LIM domains, zinc-binding motifs that mediate protein-protein interactions. These LIM domains allow LMO2 to interact with basic helix-loop-helix (bHLH) proteins such as TAL1, GATA1, and LDB1, forming complexes that regulate transcription of genes required for hematopoietic development. Alternative splicing generates isoforms with distinct interaction patterns.

Functionally, LMO2 acts as a bridging factor, linking transcription factors to DNA regulatory regions. It is essential for erythropoiesis and angiogenesis, controlling expression of genes involved in cell fate decisions. Knockout mice lacking LMO2 exhibit embryonic lethality due to failure of blood vessel and hematopoietic development. In hematopoietic stem cells, LMO2 ensures long-term maintenance and self-renewal. Researchers use LMO2 antibody to study transcriptional regulation in blood formation and cancer biology.

Clinically, LMO2 is a well-known oncogene in T-cell acute lymphoblastic leukemia (T-ALL), where aberrant expression drives leukemogenesis. Chromosomal translocations or retroviral insertional mutagenesis can activate LMO2, promoting proliferation of immature T-cells. It also has roles in diffuse large B-cell lymphoma and other hematologic malignancies. Conversely, in normal physiology, its expression serves as a marker for angiogenesis and hematopoietic stem cell activity. NSJ Bioreagents provides LMO2 antibody to support oncology and stem cell research.

Experimentally, LMO2 antibody is used in western blotting to detect the ~18 kDa protein, in immunohistochemistry to examine expression in hematopoietic and endothelial tissues, and in immunofluorescence microscopy to confirm nuclear localization. Co-immunoprecipitation with LMO2 antibody allows identification of transcriptional complexes and regulatory partners.

Application Notes

Optimal dilution of the LMO2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human LMO2 recombinant protein (Position: A4-E150) was used as the immunogen for the LMO2 antibody.

Storage

After reconstitution, the LMO2 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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