Revision 3

Store at -20C

#87182

LMO2 (E8K6I) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IF-IC, FC-FP, ChIP, ChIP-seq	H	Endogenous	18	Rabbit IgG	#P25791	4005

Product Usage Information

For optimal ChIP and ChIP-seq results, use 5 µL of antibody and 10 µg of chromatin (approximately 4 x 10^6 cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

Application	Dilution
Western Blotting	1:1000
Immunofluorescence (Immunocytochemistry)	1:1600 - 1:6400
Flow Cytometry (Fixed/Permeabilized)	1:400 - 1:1600
Chromatin IP	1:100
Chromatin IP-seq	1:100

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

Specificity/Sensitivity

LMO2 (E8K6I) Rabbit mAb recognizes endogenous levels of total LMO2 protein. This antibody also recognizes a non-specific band of unknown origin at 78 kDa. Testing of LMO2 (E8K6I) Rabbit mAb with positive and negative models by Flow Cytometry and Immunofluorescence corroborated specificity of this antibody.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human LMO2 protein.

Background

LIM domain only protein 2 (LMO2) is a transcriptional regulator that was first identified as a proto-oncogene activated by chromosomal translocations in T-cell acute lymphocytic leukemia (T-ALL) (1). Since then, LMO2 has been found to be a master regulator essential for erythroid development, as evidenced by homozygous LMO2 knockouts resulting in embryonic lethality in mice (2). LMO2 is an intrinsically unstructured protein that does not bind DNA directly, but rather acts as a scaffolding protein that recruits various transcription factors via its tandem cysteine-rich LIM domains to form a multi-protein DNA binding complex (3,4). The LMO2 complex plays a major role in hematopoiesis and was originally shown to consist of the transcription factors TAL1, E47, and GATA-1 in erythroid lineage cells, but variations of this complex may contain alternate transcription factors including LYL1, TAL2, GATA-2, and GATA-3 (5-9). The LMO2 complex also requires interaction with LIM-domain binding protein 1 (LDB1), which is necessary for LMO2 protein stability (10-11). In addition to hematopoietic tissue, LMO2 is also expressed in embryonic brain tissue, where it associates with BEX2 and the transcription factor NSCL-2 (12). Aberrant LMO2 expression is observed in several types of hematopoietic cancers, including large diffuse B-cell lymphoma (DLBCL), B-cell acute leukemia, (B-ALL), acute myeloid leukemia (AML), and T-ALL (13-16). LMO2-mediated T-ALL is primarily caused by the translocation t(11;14)(p13;q11) with the *TCRD/A* gene from chromosome 14q11, or the t(7;11)(q35;p13) translocation involving *TCRB* from 7q35 (1). In addition to hematopoietic cancers, overexpression of LMO2 in prostate stromal cells also facilitates prostate cancer progression by inducing expression of Interleukin-11 (IL-11), which stimulates STAT3 signaling in these cells (17).

Background References

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12. Han, C. et al. (2005) *Nucleic Acids Res* 33, 6555-65.
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Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized) **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq

Cross-Reactivity Key

H: Human

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Limited Uses