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# MSX1 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1548a

## Product Information

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| **Application** | WB, E |
| **Primary Accession** | P28360 |
| **Reactivity** | Human |
| **Host** | Mouse |
| **Clonality** | Monoclonal |
| **Clone Names** | 5D11 |
| **Isotype** | IgG1 |
| **Calculated MW** | 31496 |
| **Description** | Drosophila,muscle segment (msh) homolog 1,homeo domain encoding gene,inhibiting MYOD1 expression,highly expressed in dental mesenchyme during critical bud stage,involved in epithelial-mesenchymal signaling in many organs,and in the pathogenesis of cleft lip and palate,interacting with MSX2 in mouse limb bud patterning .This gene encodes a member of the muscle segment homeobox gene family. The encoded protein functions as a transcriptional repressor during embryogenesis through interactions with components of the core transcription complex and other homeoproteins. It may also have roles in limb-pattern formation, craniofacial development, particularly odontogenesis, and tumor growth inhibition.Tissue specificity: Expressed in the developing nail bed mesenchyme. |
| **Immunogen** | Purified recombinant fragment of human MSX1 expressed in E. Coli. |
| **Formulation** | Ascitic fluid containing 0.03% sodium azide. |

## Additional Information

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| **Gene ID** | 4487 |
| **Other Names** | Homeobox protein MSX-1, Homeobox protein Hox-7, Msh homeobox 1-like protein, MSX1, HOX7 |
| **Dilution** | WB~~1/500 - 1/2000 E~~1/10000 |
| **Storage** | Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | MSX1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

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| **Name** | MSX1 ( HGNC:7391) |
| **Function** | Acts as a transcriptional repressor (By similarity). Capable of transcription autoinactivation (By similarity). Binds to the consensus sequence 5'-C/GTAAT-3' in downstream activin regulatory elements (DARE) in the gene promoter, thereby repressing the transcription of CGA/alpha-GSU and GNRHR (By similarity). Represses transcription of myoblast differentiation factors (By similarity). Binds to core enhancer regions in target gene promoters of myoblast differentiation factors with binding specificity facilitated by interaction with PIAS1 (By similarity). Regulates, in a stage-specific manner, a developmental program of gene expression in the fetal tooth bud that controls odontoblast differentiation and proliferation of dental mesenchymal cells (By similarity). At the bud stage, required for mesenchymal molar tooth bud development via facilitating reciprocal signaling between dental epithelial and mesenchymal cells (By similarity). May also regulate expression of Wnt antagonists such as DKK2 and SFPR2 in the developing tooth mesenchyme (By similarity). Required for BMP4 expression in dental mesenchyme cells (By similarity). Also, in response to BMP4, required for BMP4 expression in neighboring dental epithelial cells (By similarity). Required for maximal FGF4-induced expression of SDC1 in dental mesenchyme cells (By similarity). Also in response to SDC1, required for SDC1 expression in neighboring dental epithelial cells (By similarity). At the early bell stage, acts to drive proliferation of dental mesenchyme cells, however during the late bell stage acts as an homeostatic regulator of the cell cycle (By similarity). Regulates proliferation and inhibits premature mesenchymal odontogenesis during the bell stage via inhibition of the Wnt signaling component CTNNB1 and subsequent repression of the odontoblast differentiation factors BMP2, BMP4, LEF1, ALPL and BGLAP/OCN (By similarity). Additionally, required for correct development and fusion of the palatal shelves and embryonic mandibular formation (By similarity). Plays a role in embryonic bone formation of the middle ear, skull and nasal bones (By similarity). Required for correct formation and thickness of the nail plate (By similarity). May play a role in limb-pattern formation (By similarity). |
| **Cellular Location** | Nucleus {ECO:0000250\|UniProtKB:P13297}. Note=Interaction with PIAS1 is required for localization to the nuclear periphery (By similarity). {ECO:0000250\|UniProtKB:P13297} |

## References

1. Zhonghua Kou Qiang Yi Xue Za Zhi. 2008 Mar;43(3):157-9. 2. Endocr Pathol. 2008 Spring;19(1):54-61.

## Images

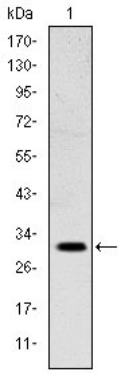



Figure 1: Western blot analysis using MSX1 mouse mAb against NTERA-2 cell lysate.

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