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Goat Anti-MSX1 Antibody

Peptide-affinity purified goat antibody
Catalog # AF1687a

Specification

Goat Anti-MSX1 Antibody - Product Information

Application	**WB, IHC**
Primary Accession	P28360
Other Accession	NP_002439, 4487, 17701 (mouse)
Reactivity	**Human**
Predicted	**Mouse, Rat, Pig**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**31496**

Goat Anti-MSX1 Antibody - Additional Information

Gene ID 4487

Other Names
Homeobox protein MSX-1, Homeobox protein Hox-7, Msh homeobox 1-like protein, MSX1, HOX7

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

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
Goat Anti-MSX1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-MSX1 Antibody - Protein Information

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). Recruits histone H3

methyltransferases such as EHMT2/G9a to gene promoter regions which leads to inhibition of myoblast differentiation via transcriptional repression of differentiation factors (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 EHMT2/G9a is required for localization to the nuclear periphery (By similarity). Interaction with PIAS1 is required for localization to the nuclear periphery (By similarity) {ECO:0000250|UniProtKB:P13297}

Goat Anti-MSX1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Goat Anti-MSX1 Antibody - Images

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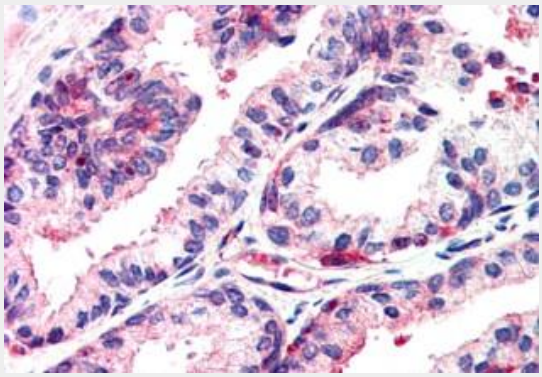
AF1687a (0.3 µg/ml) staining of Human Prostate lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.



AF1687a (2.5 µg/ml) staining of paraffin embedded Human Prostate. Steamed antigen retrieval with citrate buffer pH 6, AP-staining.

Goat Anti-MSX1 Antibody - Background

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. Mutations in this gene, which was once known as homeobox 7, have been associated with nonsyndromic cleft lip with or without cleft palate 5, Witkop syndrome, Wolf-Hirschom syndrome, and autosomoal dominant hypodontia.

Goat Anti-MSX1 Antibody - References

Genetic variants in COL2A1, COL11A2, and IRF6 contribute risk to nonsyndromic cleft palate. Nikopensius T, et al. Birth Defects Res A Clin Mol Teratol, 2010 Jul 29. PMID 20672350.
The c.469+46_56del mutation in the homeobox MSX1 gene-A novel risk factor in breast cancer? Sliwinski T, et al. Cancer Epidemiol, 2010 Jul 16. PMID 20638926.
Parent-of-origin effects for MSX1 in a Chilean population with nonsyndromic cleft lip/palate. Suazo J, et al. Am J Med Genet A, 2010 Aug. PMID 20635363.
Maternal genes and facial clefts in offspring: a comprehensive search for genetic associations in two population-based cleft studies from Scandinavia. Jugessur A, et al. PLoS One, 2010 Jul 9. PMID 20634891.

MTHFR and MSX1 contribute to the risk of nonsyndromic cleft lip/palate. Jagom□gi T, et al. Eur J Oral Sci, 2010 Jun. PMID 20572854.