

MSX1 Rabbit pAb

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Catalog # AP52178

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	P28360
Reactivity	Human, Mouse
Predicted	Rat, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	31496
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human MSX1
Epitope Specificity	151-297/297
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Nucleus
DISEASE	Defects in MSX1 are the cause of tooth agenesis selective type 1 (STHAG1) [MIM:106600]. A form of selective tooth agenesis, a common anomaly characterized by the congenital absence of one or more teeth. Selective tooth agenesis without associated systemic disorders has sometimes been divided into 2 types: oligodontia, defined as agenesis of 6 or more permanent teeth, and hypodontia, defined as agenesis of less than 6 teeth. The number in both cases does not include absence of third molars (wisdom teeth). Tooth agenesis selective type 1 can be associated with orofacial cleft in some patients. Note=MSX1 is deleted in some patients with Wolf-Hirschhorn syndrome (WHS). WHS results from sub-telomeric deletions in the short arm of chromosome 4. Defects in MSX1 are the cause of Witkop syndrome (WITS) [MIM:189500]. WITS is a form of ectodermal dysplasia also called tooth-and-nail syndrome or dysplasia of nails with hypodontia. Ectodermal dysplasias (EDs) constitute a heterogeneous group of developmental disorders affecting tissues of ectodermal origin. EDs are characterized by abnormal development of two or more ectodermal structures such as hair, teeth, nails and sweat glands, with or without any additional clinical sign. Each combination of clinical features represents a different type of ectodermal dysplasia. Witkop syndrome is characterized by abnormalities largely limited largely to teeth (some of which are missing) and nails (which are poorly formed early in life, especially toenails). This condition is distinguished from anhidrotic ectodermal dysplasia by autosomal dominant inheritance and little involvement of hair and sweat glands. The teeth are not as severely affected. Defects in MSX1 are the cause of non-syndromic orofacial cleft type 5 (OFC5) [MIM:608874]; also called non-syndromic cleft lip with or without cleft palate 5. Non-syndromic orofacial cleft is a common birth defect consisting of cleft lips with or without cleft palate. Cleft lips are associated with cleft palate in two-third of cases. A cleft lip can occur on one or both sides and range in severity from a simple notch in the upper lip to a complete opening in the lip

Important Note	extending into the floor of the nostril and involving the upper gum. This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Acts as a transcriptional repressor. May play a role in limb-pattern formation. Acts in cranofacial development and specifically in odontogenesis. Expression in the developing nail bed mesenchyme is important for nail plate thickness and integrity.

Additional Information

Gene ID	4487
Other Names	Homeobox protein MSX-1, Homeobox protein Hox-7, Msh homeobox 1-like protein, MSX1 (HGNC:7391)
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,Flow-Cyt=5 μ g /Test
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

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). 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}

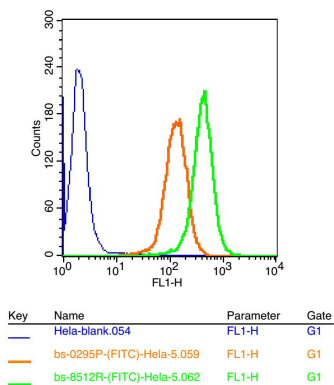
Background

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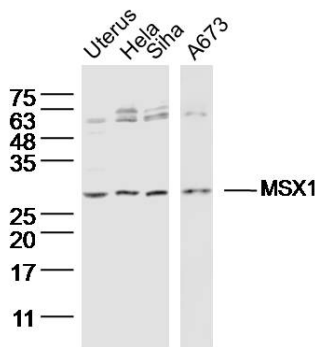
References

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Images

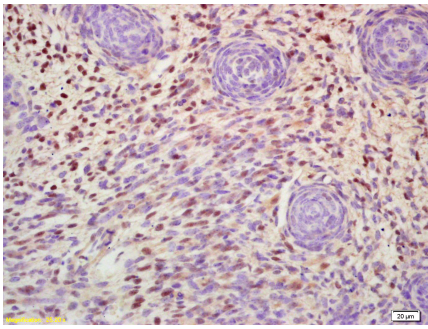


Positive control: Hela cells
Concentration: 5 µg/10⁶ cells
Incubation conditions: Avoid light , 30 minutes on the ice.



Sample:
Utreus (Mouse) Lysate at 40 ug
Hela Cell (Human) Lysate at 40 ug
Siha Cell (Human) Lysate at 40 ug
A673 Cell (Human) Lysate at 40 ug
Primary: Anti- MSX1 (AP52178) at 1/300 dilution
Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution
Predicted band size: 31 kD
Observed band size: 31 kD

Tissue/cell: mouse embryo tissue; 4%
Paraformaldehyde-fixed and paraffin-embedded;
Antigen retrieval: citrate buffer (0.01M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37℃ for 20 min;
Incubation: Anti-MSX1 Polyclonal Antibody, Unconjugated(AP52178) 1:200, overnight at 4℃, followed by conjugation to the secondary



antibody(SP-0023) and DAB(C-0010) staining

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.