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MSX1 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP19261C

Product Information

Application	WB, IF, E
Primary Accession	P28360
Other Accession	O02786, NP_002439.2
Reactivity	Human, Rat, Mouse
Predicted	Bovine, Canine, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB30384
Calculated MW	31496
Antigen Region	111-138

Additional Information

Gene ID	4487
Other Names	Homeobox protein MSX-1, Homeobox protein Hox-7, Msh homeobox 1-like protein, MSX1, HOX7
Target/Specificity	This MSX1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 111-138 amino acids from the Central region of human MSX1.
Dilution	WB~~1:1000 IF~~1:200 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MSX1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

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}

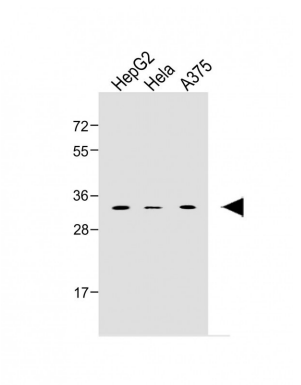
Background

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.

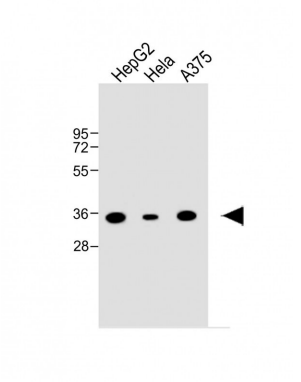
References

References for protein:
1.Sliwinski, T., et al. Cancer Epidemiol 34(5):652-655(2010)
2.Nikopensius, T., et al. Birth Defects Res. Part A Clin. Mol. Teratol. 88(9):748-756(2010)
3.Suazo, J., et al. Am. J. Med. Genet. A 152A (8), 2011-2016 (2010) :
4.Doi, T., et al. J. Pediatr. Surg. 45(6):1187-1191(2010)
5.Jugessur, A., et al. PLoS ONE 5 (7), E11493 (2010)
References for SY5Y (SH-SY5Y; ATCC#CRL-2266): 1. Ross RA, et al. Coordinate morphological and biochemical interconversion of human neuroblastoma cells. J. Natl. Cancer Inst. 71: 741-749, 1983. [PubMed: 6137586]; 2. Biedler JL, et al. Multiple neurotransmitter synthesis by human neuroblastoma cell lines and clones. Cancer Res. 38: 3751-3757, 1978. [PubMed: 29704].

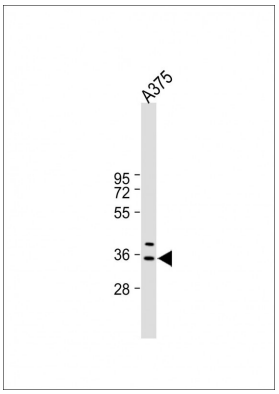
Images



All lanes : Anti-MSX1 Antibody (Center) at 1:1000 dilution Lane 1: HepG2 MG whole cell lysate Lane 2: Hela whole cell lysate Lane 3: A375 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Observed band size : 32kDa Blocking/Dilution buffer: 5% NFDM/TBST.



All lanes : Anti-MSX1 Antibody (Center) at 1:1000 dilution Lane 1: HepG2 whole cell lysate Lane 2: Hela whole cell lysate Lane 3: A375 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Observed band size : 34kDa Blocking/Dilution buffer: 5% NFDM/TBST.

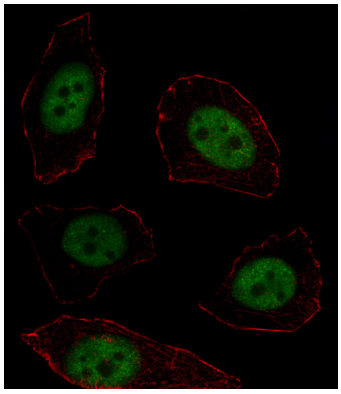


All lanes : Anti-MSX1 Antibody (Center) at 1:1000 dilution Lane 1:A375 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Observed band size : 34kDa Blocking/Dilution buffer: 5% NFDM/TBST.

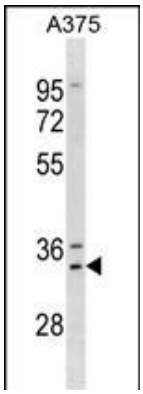


Anti-MSX1 Antibody (Center)at 1:2000 dilution + mouse spleen lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution Predicted band size : 31 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

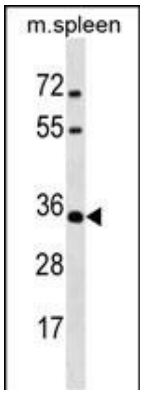
Fluorescent image of U251 cell stained with MSX1 Antibody (Center)(Cat#AP19261c).U251 cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with MSX1 primary antibody (1:25, 1 h at 37℃). For secondary antibody,



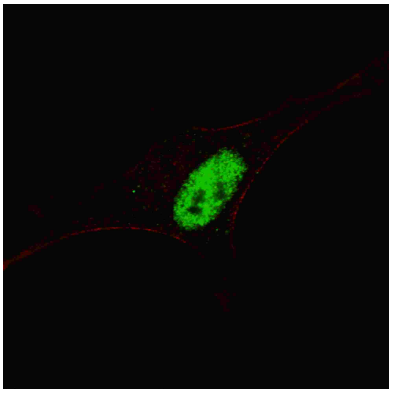
Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37℃).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37℃).MSX1 immunoreactivity is localized to Nucleus significantly.



MSX1 Antibody (Center)(Cat. #AP19261c) western blot analysis in A375 cell line lysates (35ug/lane).This demonstrates the MSX1 antibody detected the MSX1 protein (arrow).



MSX1 Antibody (Center) (Cat. #AP19261c) western blot analysis in mouse spleen tissue lysates (35ug/lane).This demonstrates the MSX1 antibody detected the MSX1 protein (arrow).



Fluorescent confocal image of SY5Y cells stained with MSX1 (Center) antibody. SY5Y cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.2%, 30 min). Cells were then incubated with AP19261c MSX1 (Center) primary antibody (1:200, 2 h at room temperature). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:1000, 1h). Nuclei were counterstained with Hoechst 33342 (blue) (10 µg/ml, 5 min). Note the highly specific localization of the MSX1 mainly to the nucleus.

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