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SOX9 Antibody (Ascites)

Mouse Monoclonal Antibody (Mab)
Catalog # AM1964a

Product Information

Application	WB, E
Primary Accession	P48436
Other Accession	O18896, Q04887, NP_000337.1
Reactivity	Human
Predicted	Mouse, Pig
Host	Mouse
Clonality	Monoclonal
Isotype	IgM
Clone Names	334CT39.1.4
Calculated MW	56137
Antigen Region	41-70

Additional Information

Gene ID	6662
Other Names	Transcription factor SOX-9, SOX9
Target/Specificity	This SOX9 antibody is generated from mice immunized with a KLH conjugated synthetic peptide between 41-70 amino acids from human SOX9.
Dilution	WB~~1:1000~16000 E~~Use at an assay dependent concentration.
Format	Mouse monoclonal antibody supplied in crude ascites with 0.09% (W/V) sodium azide.
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	SOX9 Antibody (Ascites) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SOX9 {ECO:0000303|PubMed:7990924, ECO:0000312|HGNC:HGNC:11204}
Function	Transcription factor that plays a key role in chondrocytes differentiation and skeletal development (PubMed:24038782). Specifically binds the 5'-ACAAAG-3' DNA motif present in enhancers and super-enhancers and promotes expression of genes important for chondrogenesis, including cartilage matrix protein-coding genes COL2A1, COL4A2, COL9A1, COL11A2 and ACAN, SOX5

and SOX6 (PubMed:8640233). Also binds to some promoter regions (By similarity). Plays a central role in successive steps of chondrocyte differentiation (By similarity). Absolutely required for precartilaginous condensation, the first step in chondrogenesis during which skeletal progenitors differentiate into prechondrocytes (By similarity). Together with SOX5 and SOX6, required for overt chondrogenesis when condensed prechondrocytes differentiate into early stage chondrocytes, the second step in chondrogenesis (By similarity). Later, required to direct hypertrophic maturation and block osteoblast differentiation of growth plate chondrocytes: maintains chondrocyte columnar proliferation, delays prehypertrophy and then prevents osteoblastic differentiation of chondrocytes by lowering beta-catenin (CTNNB1) signaling and RUNX2 expression (By similarity). Also required for chondrocyte hypertrophy, both indirectly, by keeping the lineage fate of chondrocytes, and directly, by remaining present in upper hypertrophic cells and transactivating COL10A1 along with MEF2C (By similarity). Low lipid levels are the main nutritional determinant for chondrogenic commitment of skeletal progenitor cells: when lipids levels are low, FOXO (FOXO1 and FOXO3) transcription factors promote expression of SOX9, which induces chondrogenic commitment and suppresses fatty acid oxidation (By similarity). Mechanistically, helps, but is not required, to remove epigenetic signatures of transcriptional repression and deposit active promoter and enhancer marks at chondrocyte-specific genes (By similarity). Acts in cooperation with the Hedgehog pathway-dependent GLI (GLI1 and GLI3) transcription factors (By similarity). In addition to cartilage development, also acts as a regulator of proliferation and differentiation in epithelial stem/progenitor cells: involved in the lung epithelium during branching morphogenesis, by balancing proliferation and differentiation and regulating the extracellular matrix (By similarity). Controls epithelial branching during kidney development (By similarity).

Cellular Location Nucleus {ECO:0000255|PROSITE-ProRule:PRU00267, ECO:0000269|PubMed:8640233}

Background

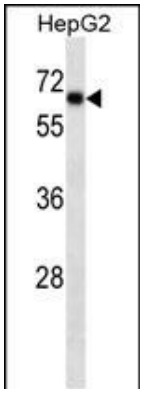
The protein encoded by this gene recognizes the sequence CCTTGAG along with other members of the HMG-box class DNA-binding proteins. It acts during chondrocyte differentiation and, with steroidogenic factor 1, regulates transcription of the anti-Muellerian hormone (AMH) gene. Deficiencies lead to the skeletal malformation syndrome campomelic dysplasia, frequently with sex reversal.

References

Masuda, T., et al. J. Biol. Chem. 285(35):26933-26944(2010)
Staffler, A., et al. Hum. Mutat. 31 (6), E1436-E1444 (2010) :
Jugessur, A., et al. PLoS ONE 5 (7), E11493 (2010) :
Johnatty, S.E., et al. PLoS Genet. 6 (7), E1001016 (2010) :
Huang, W., et al. Mol. Cell. Biol. 20(11):4149-4158(2000)

Images

SOX9 Antibody (Cat. #AM1964a) western blot analysis in HepG2 cell line lysates (35µg/lane).This demonstrates the SOX9 antibody detected the SOX9 protein (arrow).



Citations

- Anti-epileptic drug topiramate upregulates TGFβ1 and SOX9 expression in primary embryonic palatal mesenchyme cells: Implications for teratogenicity