

**SOX9 Antibody**  
**Mouse Monoclonal Antibody (Mab)**  
**Catalog # AM1964b**

**Specification**

**SOX9 Antibody - Product Information**

Application	WB,E
Primary Accession	<a href="#">P48436</a>
Other Accession	<a href="#">Q18896</a> , <a href="#">Q04887</a> , <a href="#">NP_000337.1</a> , <a href="#">F1LYL9</a>
Reactivity	Human
Predicted	Mouse, Pig, Rat
Host	Mouse
Clonality	Monoclonal
Isotype	IgM,k
Calculated MW	56137
Antigen Region	41-70

**SOX9 Antibody - 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~~1:500~1000

E~~Use at an assay dependent concentration.

**Format**

Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Euglobin precipitation followed by dialysis against PBS.

**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 is for research use only and not for use in diagnostic or therapeutic procedures.

**SOX9 Antibody - 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

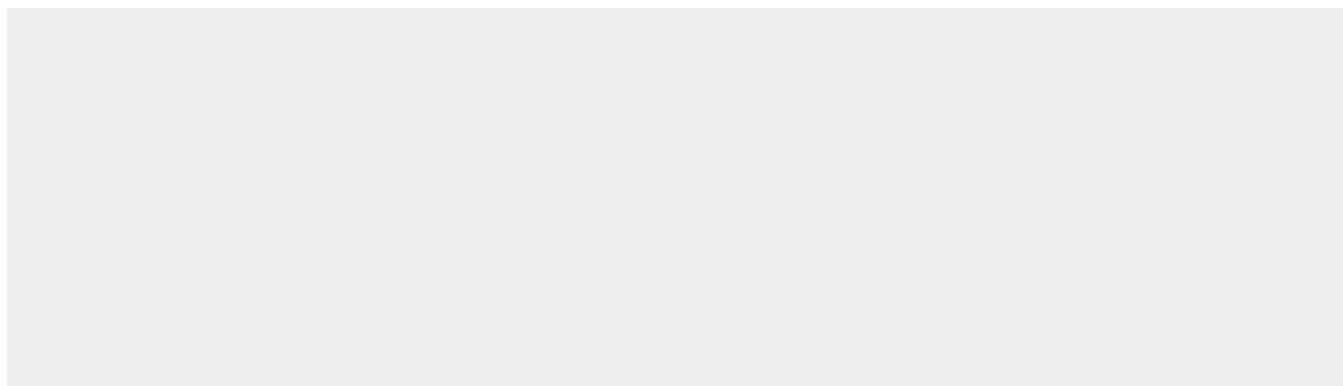
Nucleus {ECO:0000255|PROSITE-ProRule:PRU00267, ECO:0000269|PubMed:8640233}

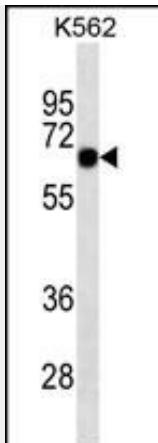
#### SOX9 Antibody - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### SOX9 Antibody - Images





SOX9 Antibody (Cat. #AM1964b) western blot analysis in K562 cell line lysates (35 $\mu$ g/lane). This demonstrates the SOX9 antibody detected the SOX9 protein (arrow).

### **SOX9 Antibody - 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.

### **SOX9 Antibody - 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)