

KD-Validated Anti-SRY-Box Transcription Factor 9 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody

Catalog # AGI1752

Product Information

Application	WB, FC, ICC
Primary Accession	P48436
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	24GB2000
Calculated MW	56137
Gene Name	SOX9
Aliases	SOX9; SRY-Box Transcription Factor 9; SRA1; Transcription Factor SOX-9; SRY-Box 9; CMPD1; CMD1; Campomelic Dysplasia, Autosomal Sex-Reversal; SRY (Sex-Determining Region Y)-Box 9 Protein; SRY (Sex Determining Region Y)-Box 9; SRY (Sex Determining Region Y)-Box9; SRY-Related HMG-Box, Gene 9; SRXY10; SRXX2
Immunogen	A synthesized peptide derived from human SOX9

Additional Information

Gene ID	6662
Other Names	Transcription factor SOX-9, SOX9 {ECO:0000303 PubMed:7990924, ECO:0000312 HGNC:HGNC:11204}

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}

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