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Anti-SOX9 Antibody Picoband®

Catalog Number: A00177-2

About SOX9

Transcription factor SOX-9 is a protein that in humans is encoded by the SOX9 gene. 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.

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Overview

Product Name	Anti-SOX9 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-SOX9 Antibody Picoband® catalog # A00177-2. Tested in IHC, WB applications. This antibody reacts with Human, Mouse, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	IHC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Storage Instructions	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	P48436

Technical Details

Immunogen	A synthetic peptide corresponding to a sequence in the middle region of human SOX9, identical to the related mouse and rat sequences.
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western

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	blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-15) for IHC(P).
Cross Reactivity	No cross-reactivity with other proteins.
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml

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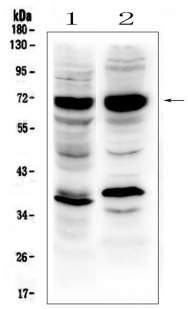
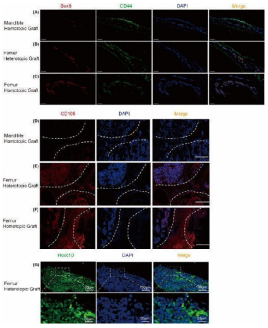
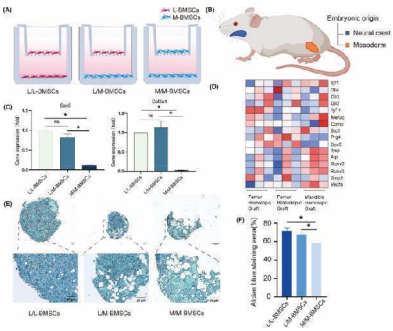
Anti-SOX9 Antibody Picoband® (A00177-2) Images



Western blot analysis of SOX9 using anti-SOX9 antibody (A00177-2). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions. Lane 1: human HepG2 whole cell lysates Lane 2: human PC-3 whole cell lysates After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-SOX9 antigen affinity purified polyclonal antibody (Catalog # A00177-2) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for SOX9 at approximately 70KD. The expected band size for SOX9 is at 56KD.



Hoxc10 exists in mesodermal derived callus. The immunofluorescence of Sox9 and CD44 in the mandible homotopic grafting (A), femoral heterotopic grafting (B) and femoral homotopic grafting(C). Sox9 represents cartilage (red), CD44 is a BMSCs marker (green), and DAPI marks the nucleus. (Scale bars, 500 um) (D–F) represent the immunofluorescence of CD105 in mandible homotopic grafting, femoral heterotopic grafting, and femoral homotopic grafting, respectively. The white dotted line shows the edge of the femoral graft and the mandibular graft, and the middle of the dotted line is the callus. (Scale bars, 200 um) (G) Localization of Hoxc10 at callus in femoral heterotopic grafting. (Scale bars, 100 um; Scale bars, 20 um) The data are presented as the mean ± SD (n = 6). * p < 0.05.Index in PubMed under a CC BY license. PMID: 39434203



Hoxc10 is retained in L/M-BMSCs in vitro. (A) Schematic of Transwell co-culture model of L-BMSCs and M-BMSCs. (B) Schematic of the limb bones and mandibles from different embryonic origins. The mandible is of neural crest origin (blue) and the limb bone is of mesodermal origin (orange) (C) qPCR verified the gene expression levels of Sox9 and Col2a1 before and after co-culture of L-BMSCs and M-BMSCs. (D) The proliferation, osteogenic and chondrogenic genes of femoral homotopic grafting, femoral heterotopic grafting and mandibles homotopic grafting. (E) After 21 days of chondrogenic induction in the upper layer cells of Transwell model before and after co cultivation with L-BMSCs and M-BMSCs, blue stained proteoglycans were observed using Alcian blue. (F) Quantitative analysis of Alizarin blue staining before and after co culture of L-BMSCs and M-BMSCs. The data are presented as the mean ± SD (n = 3). * p <

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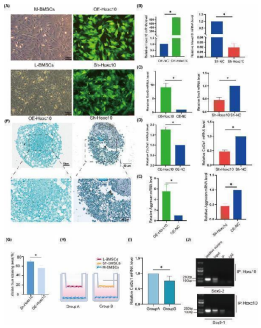
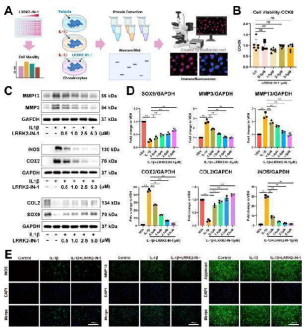
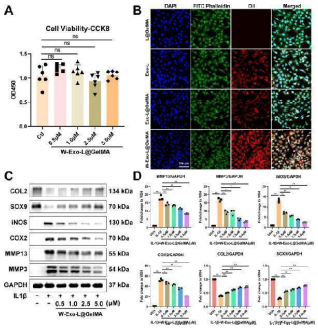


Hoxc10 is positively correlated with cartilage. n (C) q-PCR validated the expression levels of Sox9 gene after overexpression and knockout of Hoxc10. (D) q-PCR validated the expression levels of the Col2a1 gene after overexpression and knockout of Hoxc10. (E) q-PCR validated the expression levels of Aggrecan gene after overexpression and knockout of Hoxc10. (F) The proteoglycan of BMSCs after overexpression and knockdown Hoxc10 was observed by Alcian blue staining 21 days after chondrogenic induction. (G) Quantitative analysis of Alcian blue staining. (H) Schematic diagram of co-culture of L-BMSCs and M-BMSCs with and without Hoxc10 knockout. (I) Col2a1 gene expression in L-BMSCs after Hoxc10 knockout and co-culture with M-BMSCs compared to control. (J) ChIP experiment of Sox9 and Hoxc10 protein binding. The data are presented as the mean ± SD (n = 3).* p < 0.05.Index in PubMed under a CC BY license. PMID: 39434203



LRRK2-IN-1 suppresses the IL-1beta-induced inflammation and catabolism and induces anabolism without causing the inhibition of chondrocyte viability. A Schematic diagram of cell treatment and experimental procedures. B Cell viability assessed by CCK8 assay. No obvious inhibition of chondrocyte proliferation was observed when treated with 0.5, 1.0, 2.5, and 5.0 μM LRRK2-IN-1 for 24 h. Data represent mean ± SD; N = 6/group; one-way ANOVA; ns, not significant. C Western blot analyses of the protein levels of anabolic, catabolic, inflammatory factors in the IL-1beta-induced chondrocytes treated with 0.5, 1.0, 2.5, and 5.0 μM LRRK2-IN-1 for 24 h. LRRK2-IN-1 suppressed MMP3, MMP13, iNOS, and COX2 and induced COL2 and SOX9 in a dose-dependent manner. D Quantitative analyses of the western blot results. Data represent mean ± SD; N = 3/group; *P < 0.05; **P < 0.01 by one-way ANOVA. E Immunofluorescence of iNOS, MMP13, and aggrecan expression in the IL-1beta-induced chondrocytes treated with 5.0 μM LRRK2-IN-1 for 24 h. Scar bar: 400 um Index in PubMed under a CC BY license. PMID: 37605203



W-Exo-L@GelMA exhibits a strong chondrocyte-targeting effect and a pronounced action on promoting anabolism and suppressing catabolism and inflammation without causing the inhibition of chondrocyte viability. A Cell viability assessed by CCK8 assay. No obvious cytotoxicity on chondrocytes was observed when treated with W-Exo-L@GelMA loaded with 0.5, 1.0, 2.5, and 5.0 μM LRRK2-IN-1 for 48 h. Data represent mean ± SD; N = 6/group; one-way ANOVA; ns, not significant. B Immunofluorescence of DiI-labeled exosomes. The uptake of exosomes was observed in the chondrocytes when treated with Exo-L, Exo-L@GelMA or W-Exo-L@GelMA for 48 h. DiI was used for labeling exosomes (red), DAPI to label nuclei (blue), and Phalloidin to label the cytoskeleton (green). Scar bar: 200 um. C Western blot analyses of the protein levels of anabolic, catabolic, and

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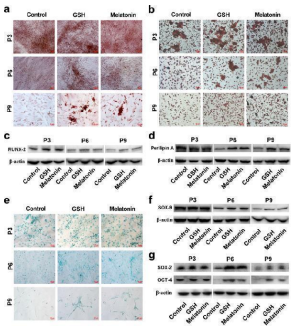
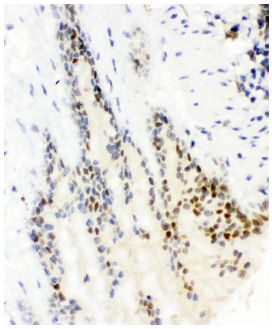
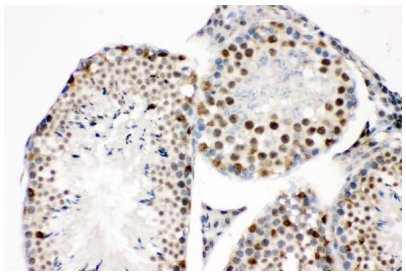
inflammatory factors in the IL-1beta-induced chondrocytes treated with W-Exo-L@GelMA loaded with 0.5, 1.0, 2.5, and 5.0 μM LRRK2-IN-1 for 48 h. W-Exo-L@GelMA promoted COL2 and SOX9 and inhibited iNOS, COX2, MMP3, and MMP13 protein levels in a dose-dependent manner. D Quantitative analysis of the western blot results. Data represent mean ± SD; N = 3/group; *P < 0.05; **P < 0.01 by one-way ANOVA Index in PubMed under a CC BY license. PMID: 37605203



Antioxidants preserve ADSC cell stemness and multidirectional differentiation potential during long-term in vitro expansion. After treatment with 10 uM GSH or melatonin, the ADSCs cultured for passage 3 (P3), passage 6 (P6), and passage 9 (P9) were used in the following analysis. a Osteogenesis differentiation of passaged ADSCs (Alizarin Red S staining; scale bar, 50 um). b Adipogenesis differentiation of passaged ADSCs (Oil Red O staining; scale bar, 50 um). c Western blot analysis for RUNX-2 in osteogenic cells. d Western blot analysis for perilipin A in adipogenic cells. e Chondrogenesis differentiation of passaged ADSCs (Alcian blue staining; scale bar, 50 um). f Western blot analysis for SOX-9 in chondrogenic cells. g Western blot analysis for SOX-2, OCT-4, and beta-actin in ADSCs. ADSCs, adipose tissue-derived stem cells; GSH, reduced glutathione Index in PubMed under a CC BY license. PMID: 31623678



IHC analysis of SOX9 using anti-SOX9 antibody (A00177-2). SOX9 was detected in paraffin-embedded section of mouse lung tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOX9 Antibody (A00177-2) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.



IHC analysis of SOX9 using anti-SOX9 antibody (A00177-2). SOX9 was detected in paraffin-embedded section of mouse testis tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOX9 Antibody (A00177-2) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.

IHC analysis of SOX9 using anti-SOX9 antibody (A00177-2). SOX9 was detected in paraffin-embedded section of rat lung tissues. Heat mediated antigen retrieval was performed in

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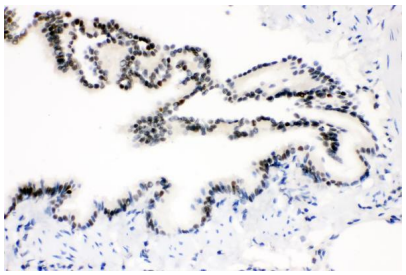
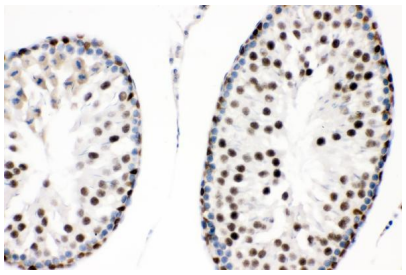
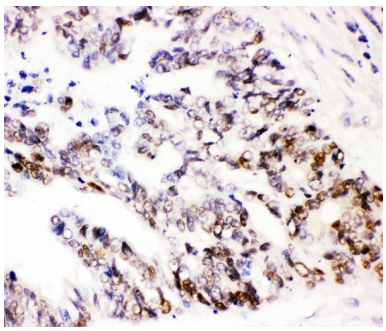


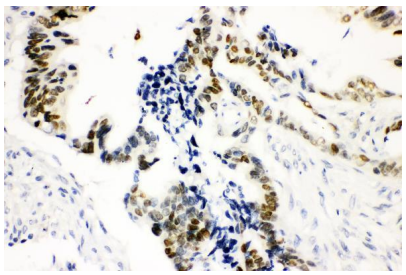
citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOX9 Antibody (A00177-2) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.



IHC analysis of SOX9 using anti-SOX9 antibody (A00177-2). SOX9 was detected in paraffin-embedded section of rat testis tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOX9 Antibody (A00177-2) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.



IHC analysis of SOX9 using anti-SOX9 antibody (A00177-2). SOX9 was detected in paraffin-embedded section of human intestinal cancer tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOX9 Antibody (A00177-2) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.



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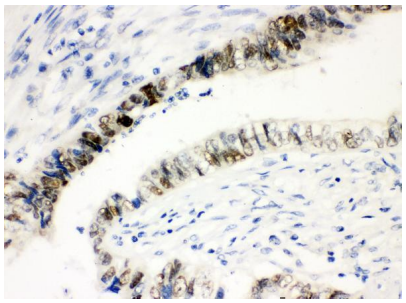

IHC analysis of SOX9 using anti-SOX9 antibody (A00177-2). SOX9 was detected in paraffin-embedded section of human intestinal cancer tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOX9 Antibody (A00177-2) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue

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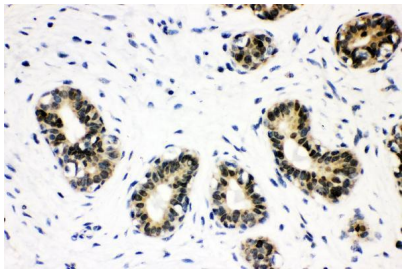
section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.



IHC analysis of SOX9 using anti-SOX9 antibody (A00177-2). SOX9 was detected in paraffin-embedded section of human mammary cancer tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-SOX9 Antibody (A00177-2) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.

Anti-SOX9 Antibody

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