

Product Datasheet

MSX1 Antibody - BSA Free NBP2-57969

Unit Size: 100 ul

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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NBP2-57969

MSX1 Antibody - BSA Free

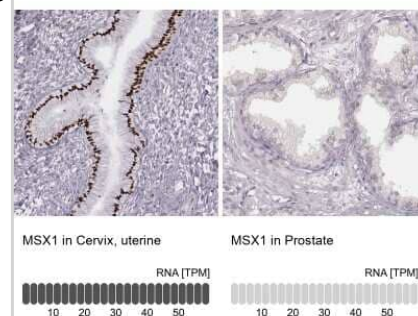
Product Information	
Unit Size	100 ul
Concentration	Concentrations vary lot to lot. See vial label for concentration. If unlisted please contact technical services.
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgG
Purity	Affinity purified
Buffer	PBS (pH 7.2) and 40% Glycerol

Product Description	
Description	Novus Biologicals Rabbit MSX1 Antibody - BSA Free (NBP2-57969) is a polyclonal antibody validated for use in IHC. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Rabbit
Gene ID	4487
Gene Symbol	MSX1
Species	Human
Immunogen	This antibody was developed against a recombinant protein corresponding to the following amino acid sequence: LGHFSVGGLLKLPEALVKAESPEKPERT

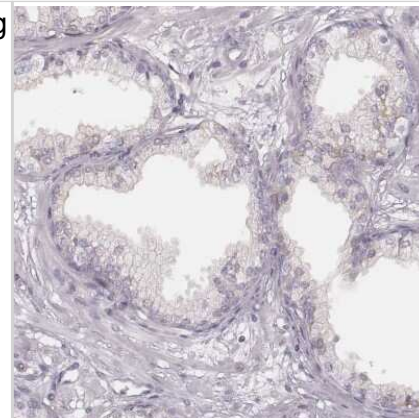
Product Application Details	
Applications	Immunohistochemistry-Paraffin, Immunohistochemistry
Recommended Dilutions	Immunohistochemistry 1:200 - 1:500, Immunohistochemistry-Paraffin 1:200 - 1:500
Application Notes	For IHC-Paraffin, HIER pH 6 retrieval is recommended.

Images

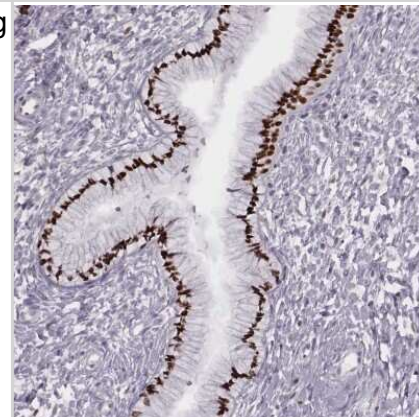
Immunohistochemistry-Paraffin: MSX1 Antibody [NBP2-57969] - Staining in human cervix, uterine and prostate tissues using anti-MSX1 antibody. Corresponding MSX1 RNA-seq data are presented for the same tissues.



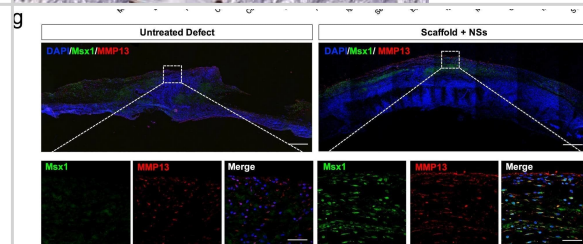
Immunohistochemistry-Paraffin: MSX1 Antibody [NBP2-57969] - Staining of human prostate shows low expression as expected.



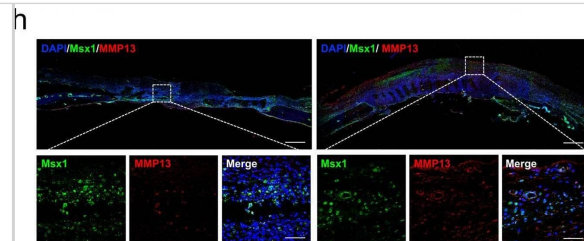
Immunohistochemistry-Paraffin: MSX1 Antibody [NBP2-57969] - Staining of human cervix, uterine shows high expression.



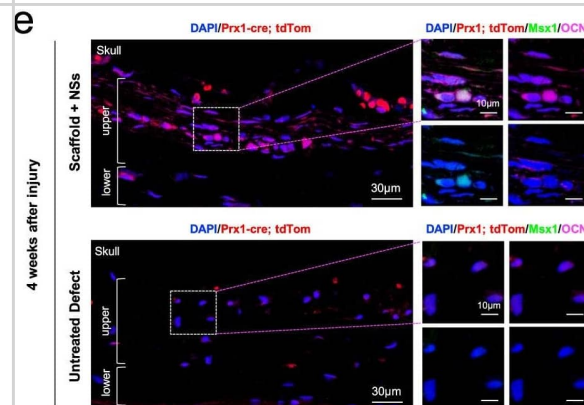
Msx1+ SSCs subset was locally expanded by the in situ culture system with NSs. a Visualization of SSC2 differentiation lineage cells in osteo-lineage cells with UMAP plot, highlighting four specific subsets. b UMAP plot of the four specific subsets. c Relative proportion of cell subsets between Defect and NSs group. d Heatmap and the expression of marker genes of 8 osteo-lineage sub-clusters. Marker genes are provided in source data. e Barplot showing the GO enrichment in SSC2 subset. Markers used for enrichment analysis were selected according to p value ($*p < 0.05$, Wilcoxon Rank Sum test) and fold change (>1). Color bar represented the adjusted p values performed by R package clusterProfiler (Benjamini–Hochberg). f Violin plot showing the SSC2 top marker gene expression levels across the whole 8 different subsets. g Co-immunostaining of Msx1 and Mmp13 expression of paraffin sections in Untreated Defect group and Scaffold + NSs group at 2 weeks after defect surgery (bar = 200 μm at low magnification and bar = 30 μm at high magnification), at least three times of experiments were repeated independently. Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/36064711>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



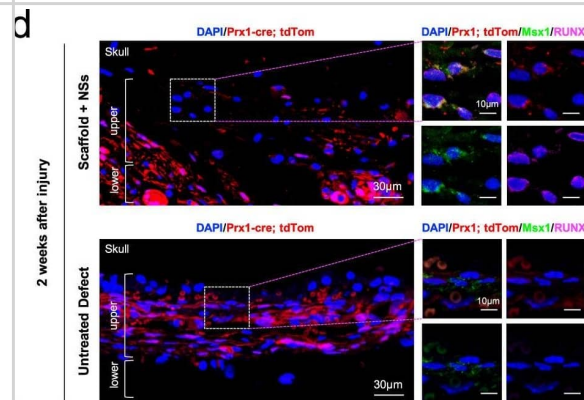
In situ expansion of Msx1+ SSCs subset promoted efficient bone regeneration partially through endochondral ossification. a Trajectory of differentiation from cycling MSCs to both SSC1 and SSC2 lineages predicted by Monocle 2. b Heatmap of gene expressions in subsets ordered by pseudotime of two differentiation trajectories in a. c Distribution of cells on both the differentiation trajectories from Defect and NSs groups showing a featured change dominated at 1 week and 2 weeks after surgery, respectively. d Relative expression level of anabolic and metabolic genes (Acan, Col6a5, Mmp13) of cartilage and Msx1 gene along the whole pseudotime. e Expression of the above chondrocyte-specific genes (Acan, Col6a5, Mmp13) and SSC2 marker gene (Msx1) visualized on differentiation trajectory. f Co-immunostaining of Msx1 and Acan expression of paraffin sections in Scaffold + NSs group at 1 week and 2 weeks after defect surgery, respectively (bar = 200 μ m at low magnification and bar=30 μ m at high magnification). g Co-immunostaining of Msx1 and Mmp13 expression of paraffin sections in Scaffold + NSs group at 1 week and 2 weeks after defect surgery, respectively (bar = 200 μ m at low magnification and bar = 30 μ m at high magnification). h, i Safranin-O staining of paraffin sections in Untreated Defect group and Scaffold + NSs group at 1 week and 2 weeks after defect surgery, respectively (bar = 500 μ m at low magnification and bar=50 μ m at high magnification). At least three times of experiments were repeated independently. Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/36064711>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Msx1+ SSCs subset is a source of osteogenesis and closely correlates with endochondral ossification. a Schematic of the assessment of Msx1+ SSCs subset in differentiation hierarchy by Prx1-lineage tracing mice. b, c HE staining of newly formed calvarium tissues in skull bone injury at 2 weeks and 4 weeks after surgery, respectively. d–g Coronal sections of the calvarium tissues from Prx1Cre; RosatdTomato mice co-immunostained with Msx1 and Runx2 (d); Msx1 and OCN (e); Msx1 and ACAN (f); Msx1 and COL2 (g); Scale bars: low magnification: 30 μ m, high magnification: 10 μ m. At least three times of experiments were repeated independently. Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/36064711>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



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NBP2-57969PEP	MSX1 Recombinant Protein Antigen
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NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control

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