# Product Datasheet

## MMP-13 Antibody (OTI2D8)
## NBP2-45887

Unit Size: 0.1 ml

Store at -20C. Avoid freeze-thaw cycles.

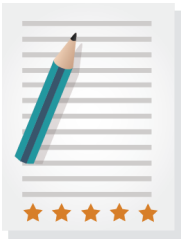
www.novusbio.com technical@novusbio.com

**Reviews: 1 Publications: 7**

Protocols, Publications, Related Products, Reviews, Research Tools and Images at:
www.novusbio.com/NBP2-45887

Updated 9/9/2025 v.20.1





# NBP2-45887

MMP-13 Antibody (OTI2D8)

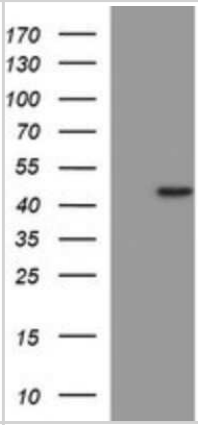
| Product Information | |
|---|---|
| **Unit Size** | 0.1 ml |
| **Concentration** | 1 mg/ml |
| **Storage** | Store at -20C. Avoid freeze-thaw cycles. |
| **Clonality** | Monoclonal |
| **Clone** | OTI2D8 |
| **Preservative** | 0.02% Sodium Azide |
| **Isotype** | IgG2a |
| **Purity** | Immunogen affinity purified |
| **Buffer** | PBS (pH 7.3), 1.0% BSA and 50% Glycerol |
| **Target Molecular Weight** | 42.2 kDa |

| Product Description | |
|---|---|
| **Description** | Novus Biologicals Mouse MMP-13 Antibody (OTI2D8) (NBP2-45887) is a monoclonal antibody validated for use in IHC, WB and ICC/IF. Anti-MMP-13 Antibody: Cited in 7 publications. All Novus Biologicals antibodies are covered by our 100% guarantee. |
| **Host** | Mouse |
| **Gene ID** | 4322 |
| **Gene Symbol** | MMP13 |
| **Species** | Human, Mouse, Rat |
| **Reactivity Notes** | Use in Rat reported in scientific literature (PMID:34512868), (PMID: 28265573). Please note that this antibody is reactive to Mouse and derived from the same host, Mouse. Mouse-On-Mouse blocking reagent may be needed for IHC and ICC experiments to reduce high background signal. You can find these reagents under catalog numbers PK-2200-NB and MP-2400-NB. Please contact Technical Support if you have any questions. |
| **Immunogen** | Human recombinant protein fragment corresponding to amino acids 104-471 of human MMP13 (NP_002418) produced in HEK293T cell. |

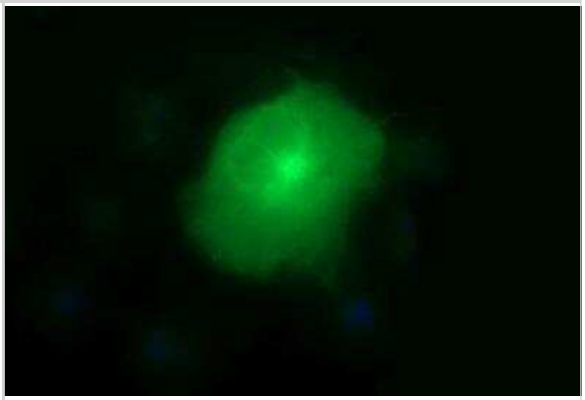
| Product Application Details | |
|---|---|
| **Applications** | Western Blot, Immunohistochemistry-Paraffin, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Knockdown Validated |
| **Recommended Dilutions** | Western Blot 1:4000, Immunohistochemistry 1:150, Immunocytochemistry/ Immunofluorescence 1:100, Immunohistochemistry-Paraffin 1:150, Knockdown Validated Reported in (PMID:31439546) |

## Images

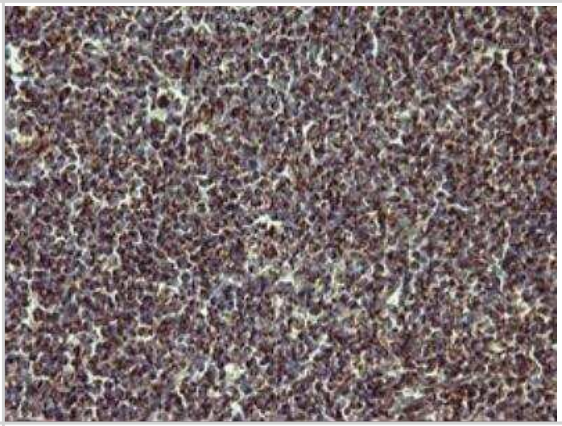
Western Blot: MMP-13 Antibody (2D8) [NBP2-45887] - Analysis of HEK293T cells were transfected with the pCMV6-ENTRY control (Left lane) or pCMV6-ENTRY MMP-13.



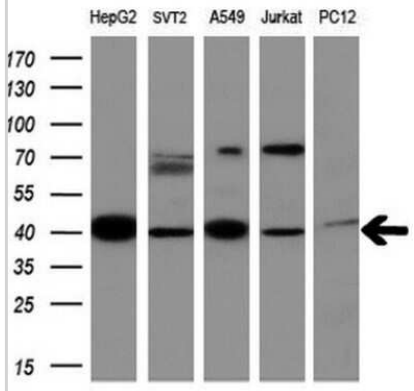

Immunocytochemistry/Immunofluorescence: MMP-13 Antibody (2D8) [NBP2-45887] - Analysis of COS7 cells transiently transfected by pCMV6-ENTRY MMP13.



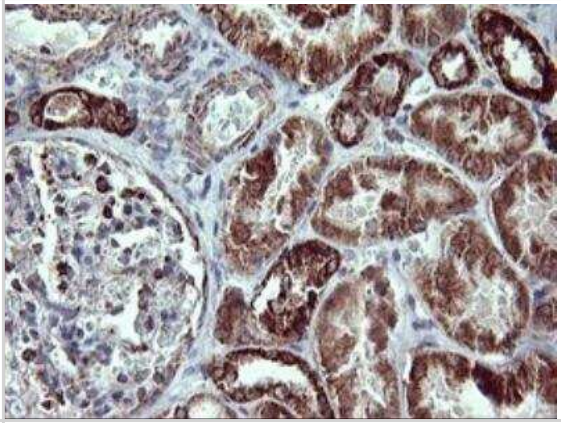
Immunohistochemistry-Paraffin: MMP-13 Antibody (2D8) [NBP2-45887] - Analysis of Human lymph node tissue. (Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min)



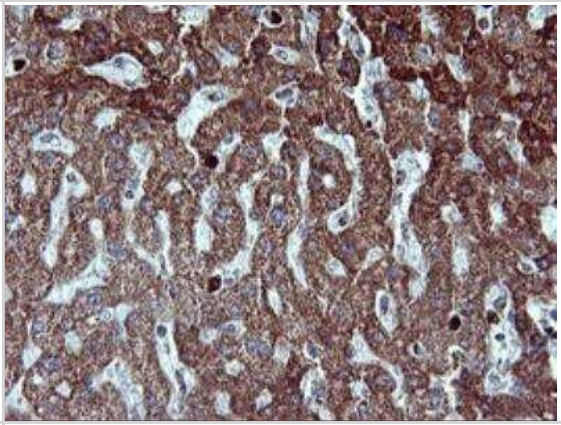
Western Blot: MMP-13 Antibody (2D8) [NBP2-45887] - Analysis of extracts (10ug) from 5 different cell lines.



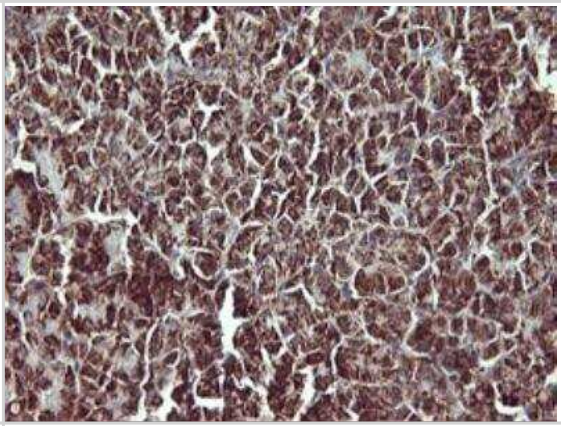
Immunohistochemistry-Paraffin: MMP-13 Antibody (2D8) [NBP2-45887] - Analysis of Human Kidney tissue. (Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min)



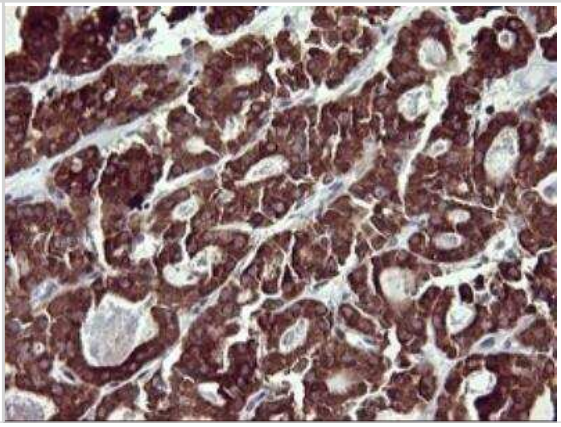
Immunohistochemistry-Paraffin: MMP-13 Antibody (2D8) [NBP2-45887] - Analysis of Human liver tissue. (Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min)

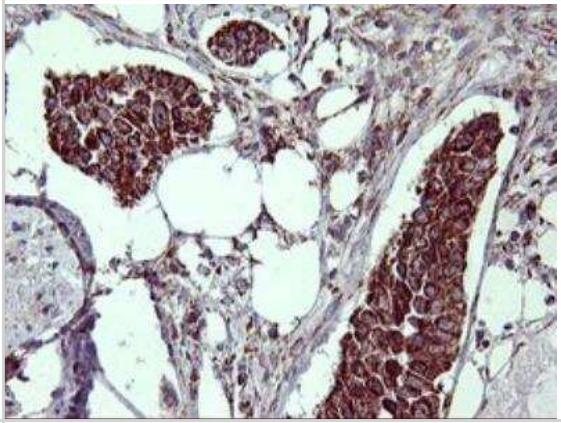
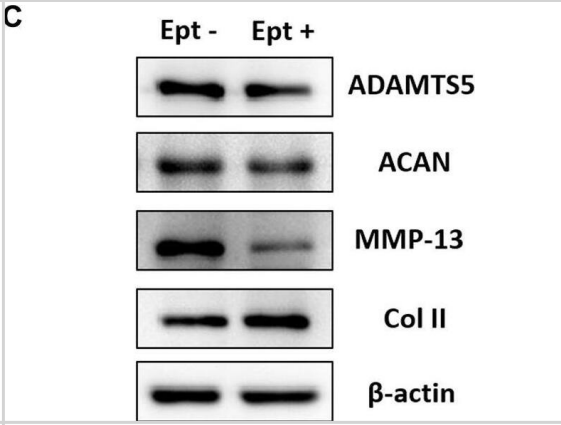


Immunohistochemistry-Paraffin: MMP-13 Antibody (2D8) [NBP2-45887] - Analysis of Human pancreas tissue. (Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min)



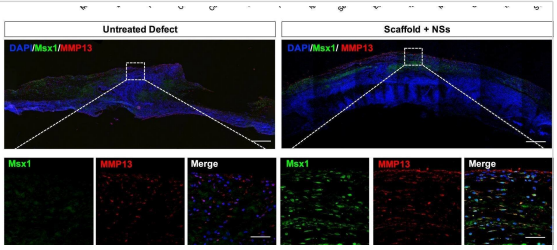
Immunohistochemistry-Paraffin: MMP-13 Antibody (2D8) [NBP2-45887] - Analysis of Carcinoma of Human thyroid tissue. (Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min)



| | |
|---|---|
| Immunohistochemistry-Paraffin: MMP-13 Antibody (2D8) [NBP2-45887] - Analysis of Carcinoma of Human bladder tissue. (Heat-induced epitope retrieval by 10mM citric buffer, pH6.0, 120C for 3min) |  |
| Regulatory effects of Ept on catabolic and anabolic dynamics in hOACs. (A) Immunofluorescent staining against Col II and aggrecan (ACAN) in Ept or vehicle treated hOACs. (B) PCR results of Col II, ACAN, MMP-13, and ADAMTS5 (n = 3). (C) Representative western blot detection of ADAMTS5, ACAN, MMP-13, Col II, and β-actin (n = 3). (D) Normalized quantitative data from western blot assay in Ept or vehicle treated hOACs. (E and F) Elisa detection of ADAMTS5 and MMP-13 levels in culture medium (n = 3). Mean +/- SD, p* < 0.05, p** < 0.01. Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/36568290), licensed under a CC-BY license. Not internally tested by Novus Biologicals. |  |
| 3 mT PEMFs inhibited inflammation and promoted chondrogenic differentiation of BMSCs under inflammation condition. (A) For day 7 pellets: the protein levels of p65, p-p65, STAT3 and p-STAT3, which showed the level of inflammation, were investigated by western blotting. In addition, the catabolic-related proteins of chondrocytes (MMP3 and MMP13) were also displayed. Quantification of relative expression of these proteins were performed. (B) For day 14 pellets: the protein levels of the p65, p-p65, STAT3, p-STAT3, MMP3 and MMP13 and quantification of relative expression of these proteins. ns, p>0.05; * p<0.05; ** p<0.01; *** p<0.001. Student's t test and one-way ANOVA were used for comparison between two groups and multiple groups, respectively Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/39107784), licensed under a CC-BY license. Not internally tested by Novus Biologicals. | |

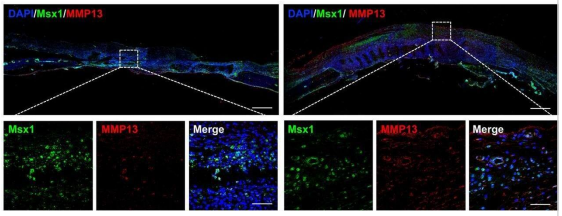
Msx1+ SSCs subset was locally expanded by the in situ culture system with NSs.a Visualization of SSC2 differentiation lineage cells in osteo-lineage cells with UMAP plot, highlighting four specific subsets. b UMAP plot of the four specific subsets. c Relative proportion of cell subsets between Defect 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.

g

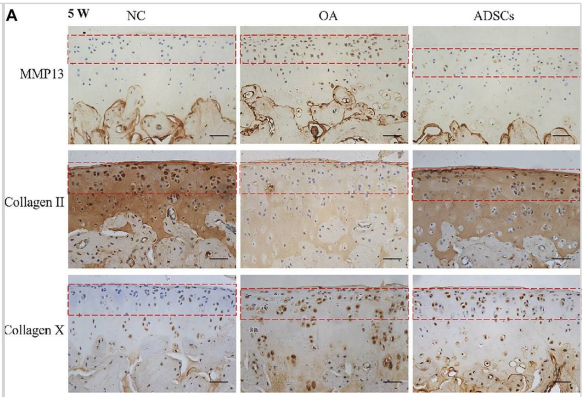



In situ expansion of Msx1+ SSCs subset promoted efficient bone regeneration partially through endochondral ossification.a Trajectory of differentiation from cycling MSCs to both SSC1 and SSC2 lineages predicted by Monocle 2. b Heatmap of gene expressions in subsets ordered by pseudotime of two differentiation 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 μm at low magnification and bar=30μm 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 μm at low magnification and bar = 30 μm 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 μm at low magnification and bar=50μm 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.

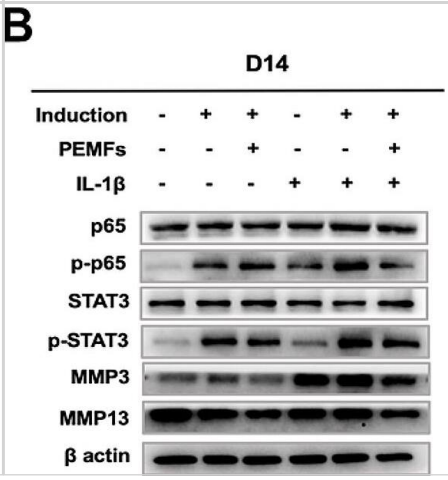
h



Effects of ADSCs on expressions of Collagen II, Collagen X and MMP13 on rat cartilage. (A) Representative immunohistochemical staining of Collagen II, Collagen X and MMP13 on cartilage at the fifth week of the experiment (5 W). Red dash box indicates region of interest where the MMP13, Collagen II and Collagen X positive cells were counted. Scale bars = 50 μm. (B) Positive cell percentages of MMP13 and quantitative measurement of positive area percentage of Collagen II and Collagen X. Values were presented as mean +/- SD. N = 6. ##p < 0.01 versus NC group; *p < 0.05 and **p < 0.01 versus model group. Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/35387326), licensed under a CC-BY license. Not internally tested by Novus Biologicals.




3 mT PEMFs inhibited inflammation and promoted chondrogenic differentiation of BMSCs under inflammation condition. (A) For day 7 pellets: the protein levels of p65, p-p65, STAT3 and p-STAT3, which showed the level of inflammation, were investigated by western blotting. In addition, the catabolic-related proteins of chondrocytes (MMP3 and MMP13) were also displayed. Quantification of relative expression of these proteins were performed. (B) For day 14 pellets: the protein levels of the p65, p-p65, STAT3, p-STAT3, MMP3 and MMP13 and quantification of relative expression of these proteins. ns, p>0.05; * p<0.05; ** p<0.01; *** p<0.001. Student's t test and one-way ANOVA were used for comparison between two groups and multiple groups, respectively Image collected and cropped by CiteAb from the following open publication (https://pubmed.ncbi.nlm.nih.gov/39107784), licensed under a CC-BY license. Not internally tested by Novus Biologicals.




## Publications

Dexing Xu, Ruozhu Dai, Hao Chi, Wen Ge, Jingfeng Rong Long Non-Coding RNA MEG8 Suppresses Hypoxia-Induced Excessive Proliferation, Migration and Inflammation of Vascular Smooth Muscle Cells by Regulation of the miR-195-5p/RECK Axis Frontiers in Molecular Biosciences 2021-11-01 [PMID: 34790697] (Western Blot, Rat)

Huang Y, Huang L, Li L et al. MicroRNA-25-3p therapy for intervertebral disc degeneration by targeting the IL-1?/ZIP8/MTF1 signaling pathway with a novel thermo-responsive vector Annals of Translational Medicine 2020-12-14 [PMID: 33313245] (Western Blot, Rat)

Song K, Hu J, Yang M et Al. Pulsed electromagnetic fields potentiate bone marrow mesenchymal stem cell chondrogenesis by regulating the Wnt/?-catenin signaling pathway J Transl Med 2024-08-07 [PMID: 39107784]

Bai H, Zhang Z, Liu L et al. Activation of adenosine A3 receptor attenuates progression of osteoarthritis through inhibiting the NLRP3/caspase-1/GSDMD induced signalling Journal of cellular and molecular medicine 2022-08-01 [PMID: 35775127] (IHC-P, Rat)

Bai H, Yuan R, Zhang Z et al. Intra-articular Injection of Baicalein Inhibits Cartilage Catabolism and NLRP3 Inflammasome Signaling in a Posttraumatic OA Model Oxidative medicine and cellular longevity 2021-09-02 [PMID: 34512868] (IF/IHC, Rat)

Shang S, Ji X, Zhang L et al. Macrophage ABHD5 suppresses NF-kappa B-dependent matrix metalloproteinase expression and cancer metastasis Cancer Res. 2019-08-22 [PMID: 31439546] (KD, Mouse)

Huang W, Ao P, Li J et al. Autophagy protects advanced glycation end product-induced apoptosis and. BioMed Research International. 2017-01-16 [PMID: 28265573] (WB, Rat)

**Novus Biologicals USA**
10730 E. Briarwood Avenue
Centennial, CO 80112
USA
Phone: 303.730.1950
Toll Free: 1.888.506.6887
Fax: 303.730.1966
nb-customerservice@bio-techne.com

**Bio-Techne Canada**
21 Canmotor Ave
Toronto, ON M8Z 4E6
Canada
Phone: 905.827.6400
Toll Free: 855.668.8722
Fax: 905.827.6402
canada.inquires@bio-techne.com

**Bio-Techne Ltd**
19 Barton Lane
Abingdon Science Park
Abingdon, OX14 3NB, United Kingdom
Phone: (44) (0) 1235 529449
Free Phone: 0800 37 34 15
Fax: (44) (0) 1235 533420
info.EMEA@bio-techne.com

**General Contact Information**
www.novusbio.com
Technical Support: nb-technical@bio-techne.com
Orders: nb-customerservice@bio-techne.com
General: novus@novusbio.com

## Products Related to NBP2-45887

| | |
|---|---|
| NBP2-33376H | Blue Marker Antibody (6F4-F6) [HRP] |
| HAF007 | Goat anti-Mouse IgG Secondary Antibody [HRP] |
| NB7539 | Goat anti-Mouse IgG (H+L) Secondary Antibody [HRP] |
| NBP1-96778 | Mouse IgG2a Isotype Control (M2A) |

### Limitations

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.

**For more information on our 100% guarantee, please visit www.novusbio.com/guarantee**

**Earn gift cards/discounts by submitting a review: www.novusbio.com/reviews/submit/NBP2-45887**

**Earn gift cards/discounts by submitting a publication using this product: www.novusbio.com/publications**