

Product Datasheet

NKX6.1 Antibody - BSA Free NBP1-49672

Unit Size: 0.1 ml

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

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Updated 3/2/2026 v.20.1

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NBP1-49672

NKX6.1 Antibody - BSA Free

Product Information	
Unit Size	0.1 ml
Concentration	1.0 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.05% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS

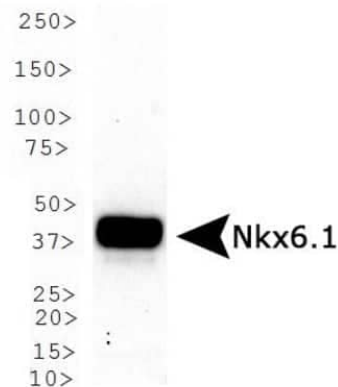
Product Description	
Description	Novus Biologicals Rabbit NKX6.1 Antibody - BSA Free (NBP1-49672) is a polyclonal antibody validated for use in IHC, WB, ICC/IF and Simple Western. Anti-NKX6.1 Antibody: Cited in 17 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Rabbit
Gene ID	4825
Gene Symbol	NKX6-1
Species	Human, Mouse, Rat
Reactivity Notes	Rat reactivity reported from a verified customer review.
Immunogen	Partial recombinant human Nkx6.1 protein made to a region within residues 50-200 [Swiss-Prot P78426]

Product Application Details	
Applications	Western Blot, Simple Western, Immunohistochemistry-Paraffin, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, In vitro assay
Recommended Dilutions	Western Blot 1:100 - 1:2000, Simple Western 1:100, Immunohistochemistry 1:100 - 1:200, Immunocytochemistry/ Immunofluorescence 1 - 2 ug/ml, Immunohistochemistry-Paraffin 1:100 - 1:200, Immunohistochemistry-Frozen, In vitro assay reported in scientific literature (PMID 30471425)
Application Notes	<p>Prior to immunostaining paraffin tissues, antigen retrieval with sodium citrate buffer (pH 6.0) is recommended.</p> <p>In Simple Western only 10 - 15 uL of the recommended dilution is used per data point.</p> <p>See Simple Western Antibody Database for Simple Western validation: Tested in BTC-6 lysate 0.5 mg/mL, separated by Size, antibody dilution of 1:100. Separated by Size-Wes, Sally Sue/Peggy Sue.</p>

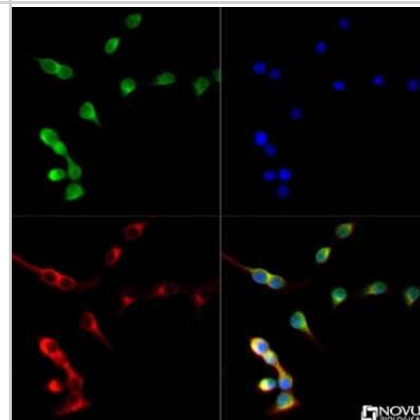


Images

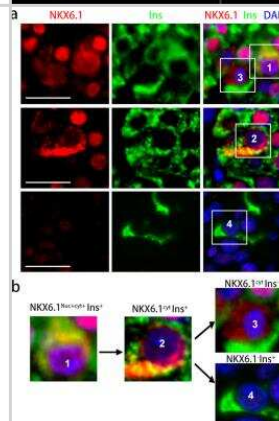
Western Blot: NKX6.1 Antibody [NBP1-49672] - Analysis of Nkx6.1 in human skeletal muscle.



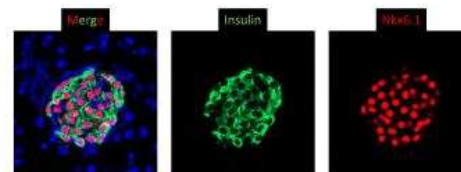
Immunocytochemistry/Immunofluorescence: NKX6.1 Antibody [NBP1-49672] - Nkx6.1 antibody was tested at 1:250 in INS-1 cells with DyLight 488 (green). Nuclei and alpha-tubulin were counterstained with DAPI (blue) and DyLight 550 (red). Image objective 40X.



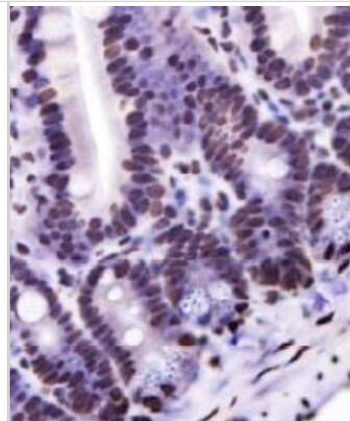
Immunohistochemistry: NKX6.1 Antibody - BSA Free [NBP1-49672] - A) Representative immunofluorescence images of pancreatic sections with NKX6.1 and Insulin (Ins). B) Relationships among different dedifferentiated beta cell labeled by white boxes in (a). Scale bars: 20 μm, Red: NKX6.1, Green: Ins, Blue: DAPI. Image collected and cropped by CiteAb from the following publication ([//pubmed.ncbi.nlm.nih.gov/33711989/](https://pubmed.ncbi.nlm.nih.gov/33711989/)) licensed under a CC-BY license.



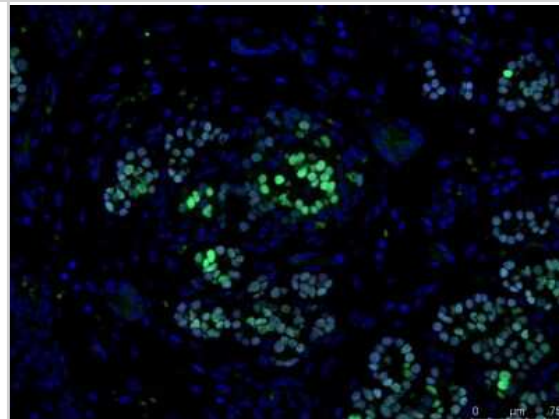
Immunohistochemistry-Frozen: NKX6.1 Antibody [NBP1-49672] - Analysis of NKX6.1 in mouse pancreas frozen tissue section using anti-NKX6.1 antibody. IHC-Fr image submitted by a verified customer review.



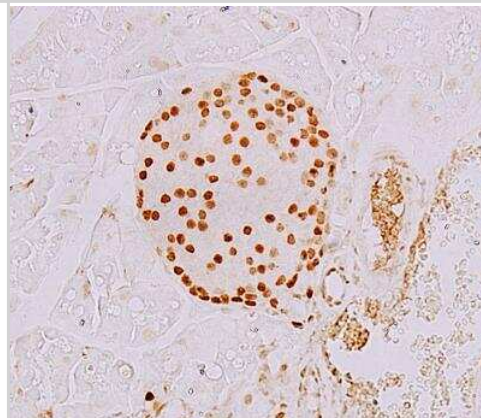
Immunohistochemistry: NKX6.1 Antibody [NBP1-49672] - Staining of Nkx6.1 in mouse intestine using DAB with hematoxylin counterstain.



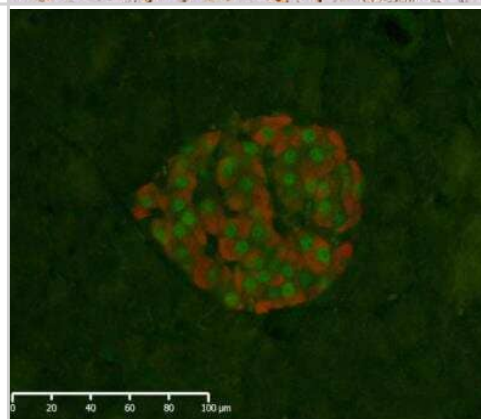
Immunohistochemistry-Paraffin: NKX6.1 Antibody [NBP1-49672] - Human fetal pancreas stained for Nkx6.1, green, and PDX1, grey. IHC-P image submitted by a verified customer review.



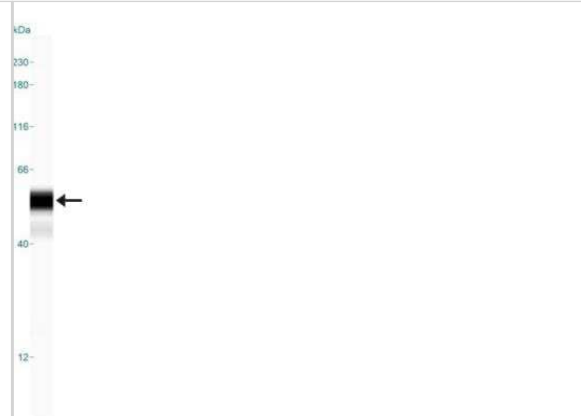
Immunohistochemistry-Paraffin: NKX6.1 Antibody [NBP1-49672] - Mouse pancreas tissue. IHC-P image submitted by a verified customer review.



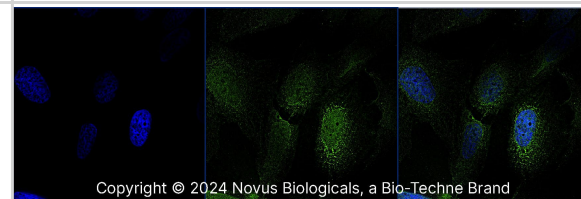
Immunohistochemistry-Paraffin: NKX6.1 Antibody [NBP1-49672] - Paraffin embedded rat pancreatic tissue at 40x resolution stained for insulin (red) and NKX6.1 (NBP1-49672, green). IHC-P image submitted by a verified customer review.



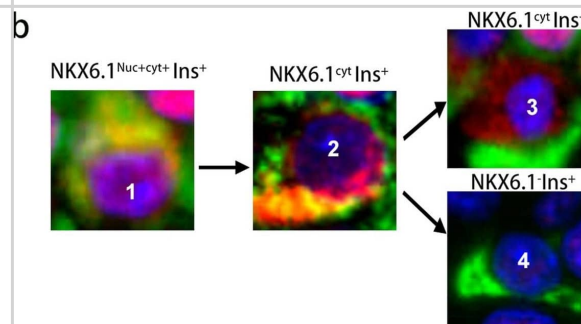
Simple Western: NKX6.1 Antibody [NBP1-49672] - Image shows a specific band for NKX6.1 in 0.5 mg/mL of BTC-6 lysate. This experiment was performed under reducing conditions using the 12-230 kDa separation system.



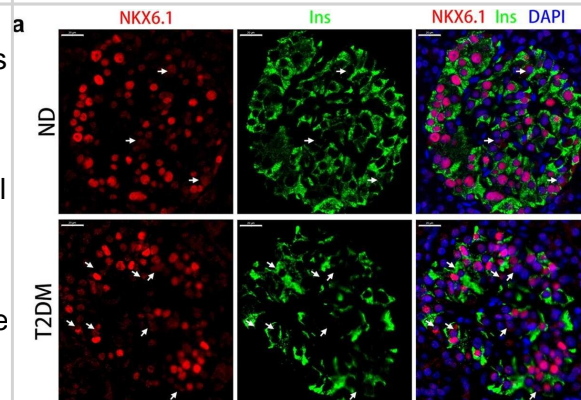
NKX6.1 was detected in immersion fixed U-2 OS human osteosarcoma cell line using Rabbit anti-NKX6.1 Antigen Affinity Purified Polyclonal Antibody conjugated to Alexa Fluor® 488 (Catalog # NBP1-49672AF488) (green) at 10 µg/mL overnight at 4C. Cells were counterstained with DAPI (blue). Cells were imaged using a 100X objective and digitally deconvolved.



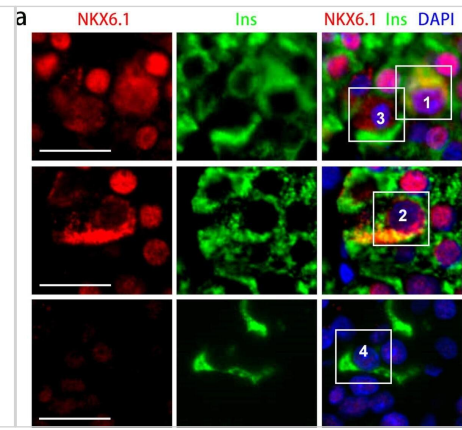
Characteristics of dedifferentiated β cells identified by NKX6.1. a Representative immunofluorescence images of pancreatic sections with NKX6.1 and Insulin (Ins). b Relationships among different dedifferentiated β cell labeled by white boxes in (a). Scale bars: 20 µm, Red: NKX6.1, Green: Ins, Blue: DAPI Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/33711989>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Representative immunofluorescence images of pancreatic sections of non-diabetic (ND) subjects and T2DM subjects. a Representative images of immunostaining with Insulin and NKX6.1 in the pancreatic sections of non-diabetic (ND) subjects and T2DM subjects. White arrows marked dedifferentiated β cells with NKX6.1 dislocation. Scale bar: 20 µm, Red: NKX6.1, Green: Ins, Blue: DAPI. b Quantification of NKX6.1^{Nuc}-Ins⁺ cell count and percentage in β cells. c Quantification of NKX6.1^{cyt}Ins⁻ cell count and percentage per islet. d Correlation between NKX6.1^{Nuc}-Ins⁺ cells per islet with HbA1c in T2DM subjects (Simple linear regression). n = 40 for non-diabetic (ND) subjects; n = 20 for T2DM subjects. Data were shown as mean \pm SEM. *P < 0.05. ***P < 0.001 Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/33711989>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Characteristics of dedifferentiated β cells identified by NKX6.1. a Representative immunofluorescence images of pancreatic sections with NKX6.1 and Insulin (Ins). b Relationships among different dedifferentiated β cell labeled by white boxes in (a). Scale bars: 20 μ m, Red: NKX6.1, Green: Ins, Blue: DAPI Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/33711989>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Lavecchia AM, Mantzouratou P, Cerullo D et al. Thyroid hormone treatment counteracts cellular phenotypical remodeling in diabetic organs iScience 2023-10-20 [PMID: 37752946] (Immunocytochemistry/ Immunofluorescence, Mouse)

Mahaddalkar PU, Scheibner K, Pfluger S et al. Generation of pancreatic β cells from CD177(+) anterior definitive endoderm Nature Biotechnology 2020-09-01 [PMID: 32341565] (Immunocytochemistry/ Immunofluorescence, Mouse)

Xi Y, Song B, Ngan I et al. Glucagon-receptor-antagonism-mediated beta-cell regeneration as an effective anti-diabetic therapy Cell reports 2022-05-31 [PMID: 35649369]

Hu X, White K, Olroyd AG et al. Hypoimmune induced pluripotent stem cells survive long term in fully immunocompetent, allogeneic rhesus macaques Nature biotechnology 2023-05-08 [PMID: 37156915] (ICC/IF, Human)

Details:

Dilution: 1:20

McDonald S, Ray P, Bunn RC et al. Heterogeneity and altered beta-cell identity in the TallyHo model of early-onset type 2 diabetes Acta histochemica 2022-08-12 [PMID: 35969910] (IHC-P, Mouse)

Details:

Dilution used for IHC 1:100

Liu, T, Sun, P Et al. Increased frequency of beta cells with abnormal NKX6.1 expression in type 2 diabetes but not in subjects with higher risk for type 2 diabetes. BMC Endocr Disord 2021-03-12 [PMID: 33711989] (ICC/IF, IHC-P, Zebrafish)

Zhu X, Oguh A, Gingerich MA et al. Cell Cycle Regulation of the Pdx1 Transcription Factor in Developing Pancreas and Insulin-Producing beta Cells Diabetes 2021-02-01 [PMID: 33526589]

Morello F, Borshagovski D, Survila M et al. Molecular Fingerprint and Developmental Regulation of the Tegmental GABAergic and Glutamatergic Neurons Derived from the Anterior Hindbrain Cell Rep 2020-10-13 [PMID: 33053343]

Deng H, Yang F, Ma X et al. Long-Term Liraglutide Administration Induces Pancreas Neogenesis in Adult T2DM Mice Cell Transplant 2020-06-26 [PMID: 32584149] (ICC/IF, Mouse)

Spaeth JM, Liu JH, Peters D et al. The Pdx1 Bound Swi/Snf Chromatin Remodeling Complex Regulates Pancreatic Progenitor Cell Proliferation and Mature Islet beta Cell Function Diabetes 2019-06-14 [PMID: 31201281] (IF/IHC, IHC-Fr, Mouse)

Wilson, CS;Spaeth, JM;Karp, J;Stocks, BT;Hoopes, EM;Stein, RW;Moore, DJ; B lymphocytes protect islet beta cells in diabetes prone NOD mice treated with imatinib JCI Insight 2019-04-09 [PMID: 30964447] (IF/IHC, Mouse)

Griffiths WJ, Crick PJ, Meljon A et al. Additional pathways of sterol metabolism: Evidence from analysis of Cyp27a1^{-/-} mouse brain and plasma. Molecular Therapy - Nucleic Acids. 2018-11-01 [PMID: 30471425] (In vitro, Mouse)

More publications at <http://www.novusbio.com/NBP1-49672>

Procedures

Immunohistochemistry-Paraffin protocol for NKX6.1 Antibody (NBP1-49672)

Immunohistochemistry-Paraffin Embedded Sections

Antigen Unmasking:

Bring slides to a boil in 10 mM sodium citrate buffer (pH 6.0) then maintain at a sub-boiling temperature for 10 minutes. Cool slides on bench-top for 30 minutes (keep slides in the sodium citrate buffer at all times).

Staining:

1. Wash sections in deionized water three times for 5 minutes each.
2. Wash sections in PBS for 5 minutes.
3. Block each section with 100-400 ul blocking solution (1% BSA in PBS) for 1 hour at room temperature.
4. Remove blocking solution and add 100-400 ul diluted primary antibody. Incubate overnight at 4 C.
5. Remove antibody solution and wash sections in wash buffer three times for 5 minutes each.
6. Add 100-400 ul HRP polymer conjugated secondary antibody. Incubate 30 minutes at room temperature.
7. Wash sections three times in wash buffer for 5 minutes each.
8. Add 100-400 ul DAB substrate to each section and monitor staining closely.
9. As soon as the sections develop, immerse slides in deionized water.
10. Counterstain sections in hematoxylin.
11. Wash sections in deionized water two times for 5 minutes each.
12. Dehydrate sections.
13. Mount coverslips.

Western Blot Protocol for NKX6.1 Antibody (NBP1-49672)

Western Blot Protocol

1. Perform SDS-PAGE on samples to be analyzed, loading 10-25 ug of total protein per lane.
2. Transfer proteins to PVDF membrane according to the instructions provided by the manufacturer of the membrane and transfer apparatus.
3. Stain the membrane with Ponceau S (or similar product) to assess transfer success, and mark molecular weight standards where appropriate.
4. Rinse the blot TBS -0.05% Tween 20 (TBST).
5. Block the membrane in 5% Non-fat milk in TBST (blocking buffer) for at least 1 hour.
6. Wash the membrane in TBST three times for 10 minutes each.
7. Dilute primary antibody in 1% Non-fat milk and incubate overnight at 4C with gentle rocking.
8. Wash the membrane in TBST three times for 10 minutes each.
9. Incubate the membrane in diluted HRP conjugated secondary antibody in blocking buffer (as per manufacturer's instructions) for 1 hour at room temperature.
10. Wash the blot in TBST three times for 10 minutes each (this step can be repeated as required to reduce background).
11. Apply the detection reagent of choice in accordance with the manufacturer's instructions.

Immunocytochemistry/ Immunofluorescence Protocol for NKX6.1 Antibody (NBP1-49672)**Immunocytochemistry Protocol**

Culture cells to appropriate density in 35 mm culture dishes or 6-well plates.

1. Remove culture medium and wash the cells briefly in PBS. Add 4% paraformaldehyde to the dish and fix at room temperature for 10 minutes.
2. Remove the paraformaldehyde and wash the cells in PBS.
3. Permeabilize the cells with 0.1% Triton X100 or other suitable detergent for 2 min.
4. Remove the permeabilization buffer and wash three times for 5 minutes each in PBS. Be sure to not let the specimen dry out.
5. To block nonspecific antibody binding, incubate in 10% normal goat serum from 1 hour to overnight at room temperature.
6. Add primary antibody at appropriate dilution and incubate overnight at 4C.
7. Remove primary antibody and replace with PBS. Wash three times for 5 minutes each.
8. Add secondary antibody at appropriate dilution. Incubate for 1 hour at room temperature.
9. Remove secondary antibody and replace with PBS. Wash three times for 5 minutes each.
10. Counter stain DNA with DAPI if required.





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Products Related to NBP1-49672

NBP2-33376H	Blue Marker Antibody (6F4-F6) [HRP]
HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control

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.

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