abcam

ab227652

Anti-TTF1/Nkx2-1 antibody [SP141]

Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652) is a rabbit monoclonal antibody detecting TTF1/Nkx2-1 in **Flow Cytometry (Intra), IHC-P, IHC-Fr, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.6 Preservative: 0.099% Sodium azide Constituents: PBS, 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	SP141
Purification technique	Affinity purification Protein A
Concentration	0.129 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100

Notes	Primary antibody incubation for 30 minutes at 4°C.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/100
Notes	Perform heat mediated antigen retrieval with 1 mM EDTA buffer pH 8.0 before commencing with IHC staining protocol. Primary antibody incubation for 30 minutes at room temperature.

Species	Rat
Dilution info	1/100
Notes	Perform heat mediated antigen retrieval with 1 mM EDTA buffer pH 8.0 before commencing with IHC staining protocol. Primary antibody incubation for 30 minutes at room temperature.

Species	Human
Dilution info	1/100
Notes	Perform heat mediated antigen retrieval with 1 mM EDTA buffer pH 8.0 before commencing with IHC staining protocol. Primary antibody incubation for 30 minutes at room temperature.

ICC/IF

Tested

Species	Human
Dilution info	1/25
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-Fr

Tested

Species	Rat
Dilution info	1/20
Notes	-

Expected

Species	Human, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information NKX2-1

Function Transcription factor that binds and activates the promoter of thyroid specific genes such as thyroglobulin, thyroperoxidase, and thyrotropin receptor. Crucial in the maintenance of the thyroid differentiation phenotype. May play a role in lung development and surfactant homeostasis. Forms a regulatory loop with GRHL2 that coordinates lung epithelial cell morphogenesis and differentiation. Activates the transcription of GNRHR and plays a role in enhancing the circadian oscillation of its gene expression. Represses the transcription of the circadian transcriptional repressor NR1D1 (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652) is a rabbit recombinant monoclonal antibody and is validated for use in Flow Cytometry (Intra), Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P), Immunohistochemistry (IHC-Fr), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

Collaboration
Anti-TTF1/Nkx2-1 [SP141] (ab227652) is a clone from the portfolio of Spring Bioscience (Roche) SP clones which have been optimised for immunohistochemistry (IHC).

Other related products
We have a range of other formats of antibody clone [SP141] also available for your convenience: ab227652, Carrier free - ab242428, ab279633, Alexa Fluor® 488 - ab320462, Alexa Fluor® 647 - ab320463, Alexa Fluor® 555 - ab320464, Alexa Fluor® 594 - ab320465, PE - ab320466, APC - ab320467, Alexa Fluor® 750 - ab321437

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	TTF1 also known as Nkx2-1 is a transcription factor with a molecular mass of approximately 38 kDa. It plays a significant role in regulating gene expression. This target is mainly expressed in tissues such as the thyroid lung and the brain. In the thyroid it activates genes associated with thyroid hormone synthesis while in the lung it regulates genes important for lung development and function. It is also referred to by other alternate names such as anti-TTF1 and NKX2.1.
Biological function summary	TTF1/Nkx2-1 is essential for organ-specific development and maintenance. It is a critical component of transcriptional complexes that modulate the expression of genes during the development of the thyroid and lung tissues. TTF1/Nkx2-1 impacts cellular processes by controlling genes involved in differentiation. Its regulatory functions play an important role in dictating cell fate decisions and maintaining organ identity.
Pathways	The activity of TTF1/Nkx2-1 integrates into the TGF-beta signaling and Wnt pathways. These pathways are imperative for cellular proliferation and differentiation. TTF1/Nkx2-1 possesses interactions with proteins like SMADs within the TGF-beta pathway influencing cellular responses. Similarly it interacts with beta-catenin in the Wnt pathway contributing to the modulation of gene expression relevant to developmental processes.

Associated diseases and disorders	TTF1/Nkx2-1 has been associated with conditions like lung cancer and congenital hypothyroidism. Altered expression or mutations in this transcription factor can lead to these disorders. For instance in lung cancer the aberrant expression of TTF1/Nkx2-1 may involve proteins such as EGFR which contributes to tumorigenesis. In congenital hypothyroidism disruptions in TTF1/Nkx2-1 activity can affect thyroid hormone synthesis-related proteins impacting metabolic processes.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

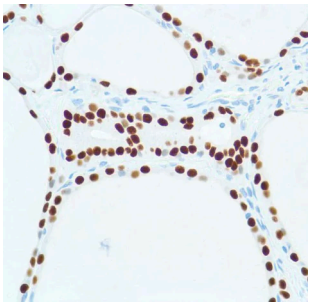
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

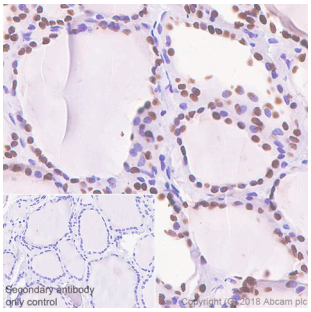
11 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652)

TTF1/Nkx2-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TTF1/Nkx2-1 antibody

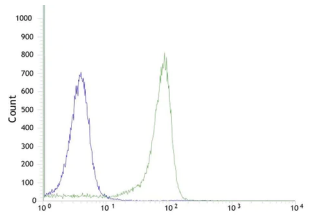
Formalin-fixed, paraffin-embedded human thyroid tissue stained for TTF1/Nkx2-1 using ab227652 at 1/100 dilution in immunohistochemical analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652)

TTF1/Nkx2-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TTF1/Nkx2-1 antibody

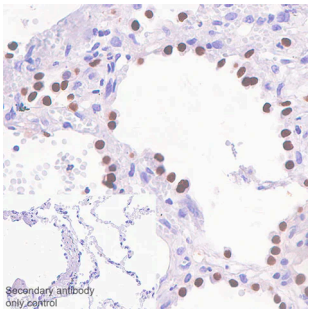
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human thyroid tissue sections labeling TTF1/Nkx2-1 with ab227652 at 1/100 dilution (1.70 µg/ml). Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 10 mins. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Flow Cytometry (Intracellular) - Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652)

TTF1/Nkx2-1 Flow Cytometry (Intracellular) staining using rabbit Anti-TTF1/Nkx2-1 antibody

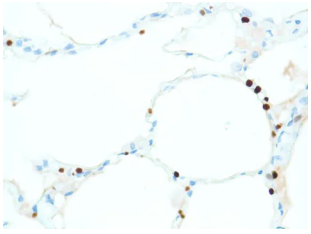
Flow cytometric analysis of HeLa (human epithelial cell line from cervix adenocarcinoma) cell line labeling TTF1/Nkx2-1 with ab227652 at 1/100 dilution (green) compared with a rabbit IgG negative control (blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652)

TTF1/Nkx2-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TTF1/Nkx2-1 antibody

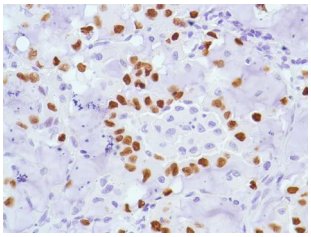
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human lung tissue sections labeling TTF1/Nkx2-1 with ab227652 at 1/100 dilution (1.70 µg/ml). Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 10 mins. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652)

TTF1/Nkx2-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TTF1/Nkx2-1 antibody

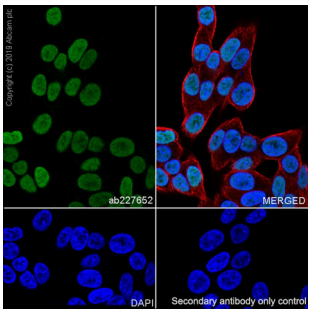
Formalin-fixed, paraffin-embedded human lung tissue stained for TTF1/Nkx2-1 using ab227652 at 1/100 dilution in immunohistochemical analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652)

TTF1/Nkx2-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TTF1/Nkx2-1 antibody

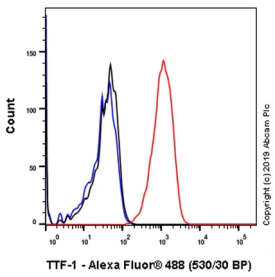
Formalin-fixed, paraffin-embedded human lung adenocarcinoma tissue stained for TTF1/Nkx2-1 using ab227652 at 1/100 dilution in immunohistochemical analysis.



Immunocytochemistry/ Immunofluorescence - Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652)

TTF1/Nkx2-1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TTF1/Nkx2-1 antibody

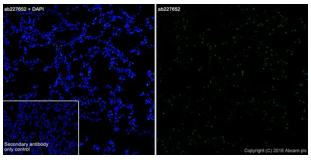
Immunocytochemistry/ Immunofluorescence analysis of TT (Human thyroid carcinoma epithelial cell) cells labeling TTF1/Nkx2-1 with purified ab227652 at 1:25 (6.8 µg/ml). Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Flow Cytometry (Intracellular) - Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652)

TTF1/Nkx2-1 Flow Cytometry (Intracellular) staining using rabbit Anti-TTF1/Nkx2-1 antibody

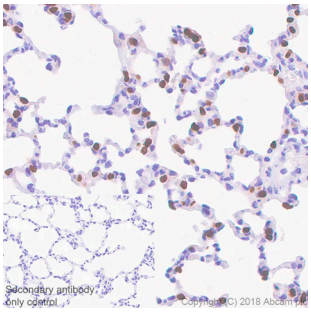
Flow Cytometry analysis of TT (Human thyroid carcinoma epithelial cell) cells labeling TTF1/Nkx2-1 with purified ab227652 at 1:170 dilution (1 µg/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1:2000 dilution. Isotype control - Rabbit monoclonal IgG (ab172730) / Black. Unlabeled control - Unlabelled cells / blue.



Immunohistochemistry (Frozen sections) - Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652)

TTF1/Nkx2-1 Immunohistochemistry (Frozen sections) staining using rabbit Anti-TTF1/Nkx2-1 antibody

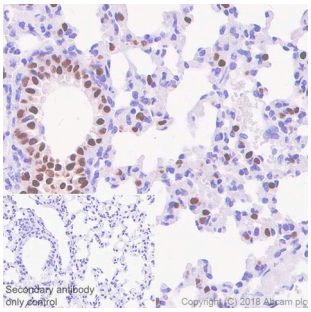
Immunohistochemistry (Frozen sections) analysis of rat lung tissue sections labeling TTF1/Nkx2-1 with purified ab227652 at 1:20 (8.5 µg/ml). Heat mediated antigen retrieval was performed using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20). Fixed with 4% paraformaldehyde and permeabilised using 0.2% Triton X-100. Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody. Negative control:PBS instead of the primary antibody. DAPI was used as a Nuclear stain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652)

TTF1/Nkx2-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TTF1/Nkx2-1 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Rat lung tissue sections labeling TTF1/Nkx2-1 with ab227652 at 1/100 dilution (1.70 µg/ml). Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 10 mins. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TTF1/Nkx2-1 antibody [SP141] (ab227652)

TTF1/Nkx2-1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TTF1/Nkx2-1 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Mouse lung tissue sections labeling TTF1/Nkx2-1 with ab227652 at 1/100 dilution (1.70 µg/ml). Heat mediated antigen retrieval was performed Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 10 mins. Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.

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