abcam

ab213725

Anti-NeuroD1 antibody [EPR20766]

Anti-NeuroD1 antibody [EPR20766] (ab213725) is a rabbit monoclonal antibody detecting NeuroD1 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 20 publications

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR20766
Purification technique	Affinity purification Protein A
Concentration	0.582 - 0.587 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human

Dilution info	1/30
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

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

Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Human
Dilution info	-
Notes	-

ICC

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information NEUROD1

Function	Acts as a transcriptional activator: mediates transcriptional activation by binding to E box-containing promoter consensus core sequences 5'-CANNTG-3'. Associates with the p300/CBP transcription coactivator complex to stimulate transcription of the secretin gene as well as the gene encoding the cyclin-dependent kinase inhibitor CDKN1A. Contributes to the regulation of several cell differentiation pathways, like those that promote the formation of early retinal ganglion cells, inner ear sensory neurons, granule cells forming either the cerebellum or the dentate gyrus cell layer of the hippocampus, endocrine islet cells of the pancreas and enteroendocrine cells of the small intestine. Together with PAX6 or SIX3, is required for the regulation of amacrine cell fate specification. Also required for dendrite morphogenesis and maintenance in the cerebellar cortex. Associates with chromatin to enhancer regulatory elements in genes encoding key transcriptional regulators of neurogenesis (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-NeuroD1 antibody [EPR20766] (ab213725) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P) in Human, Mouse, Rat samples.

What is the molecular weight of NeuroD1?
Anti-NeuroD1 [EPR20766] (ab213725) specifically detects a band for NeuroD1 (UniProt: Q13562) at a molecular weight of 40kDa.

Trusted by the scientific community
Anti-NeuroD1 [EPR20766] (ab213725) was first used in a scientific publication in 2017 and has been cited over 20 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [EPR20766] also available for your convenience: ab213725, Carrier free - ab226489

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	NeuroD1 also referred to as Neurogenic Differentiation 1 is a basic helix-loop-helix transcription factor with a molecular mass of approximately 40 kDa. This protein is expressed mainly in the central nervous system as well as in the pancreas. NeuroD1 plays a role in activating transcription by binding to DNA sequences in specific target genes. This process involves dimerization with E proteins facilitating its function as a transcriptional activator.
Biological function summary	NeuroD1 influences neural development and differentiation. It is vital in converting undifferentiated neural precursors into mature neurons ensuring proper brain formation. NeuroD1 forms part of a transcriptional complex with other neural transcription factors which coordinates the expression of genes needed for neuron specification. Apart from neurogenesis it regulates insulin gene expression in pancreatic beta cells linking neural functions to endocrine regulation.
Pathways	NeuroD1 functions in the neurogenesis pathway and interacts closely with the Notch signaling pathway. It plays a role by influencing the expression of genes essential for neuronal lineage commitment. In the insulin signaling pathway NeuroD1 cooperates with other transcription factors like Pdx1 and MafA managing the expression of insulin and other important beta-cell genes. Interactions with proteins like E47 increase its regulatory effects on these pathways.
Associated diseases and disorders	Defects in NeuroD1 function connect to conditions such as diabetes mellitus and medulloblastoma. In diabetes mellitus NeuroD1 mutations can disturb insulin gene regulation impacting glucose metabolism severely. The connection with Pdx1

further magnifies its involvement in pancreatic beta-cell function. In medulloblastoma aberrant expression or mutations in NeuroD1 affect neuronal differentiation leading to tumor development. NeuroD1 influences cellular pathways interacting with proteins such as Sox9 which contributes to oncogenic processes in neural tissues.

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

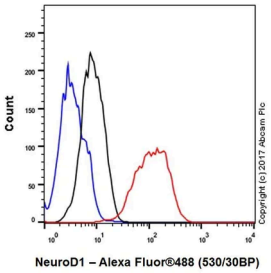
We do not recommend this combination. It is not covered by our product promise.

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.

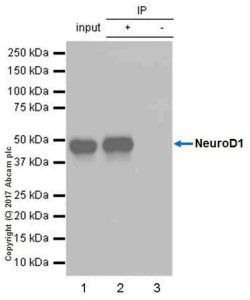
6 product images



Flow Cytometry (Intracellular) - Anti-NeuroD1 antibody [EPR20766] (ab213725)

NeuroD1 Flow Cytometry (Intracellular) staining using rabbit Anti-NeuroD1 antibody

Intracellular flow cytometric analysis of4% paraformaldehyde-fixed, 90% methanol-permeabilized Y79 (human retinoblastoma cell line) cell line labeling NeuroD1 with ab213725 at 1/50 (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype control details (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue).
Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077), at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-NeuroD1 antibody [EPR20766] (ab213725)

NeuroD1 was immunoprecipitated from 0.35 mg of Y79 (human retinoblastoma cell line) whole cell lysate with ab213725 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab213725 at 1/500 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/1,000 dilution
Lane 1: Y79 whole cell lysate 10 µg (Input).
Lane 2: ab213725 IP in Y79 whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab213725 in Y79 whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

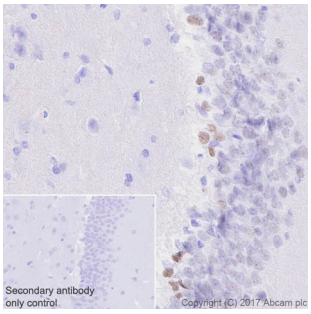
Exposure time: 1 second.

All lanes:
Immunoprecipitation - Anti-NeuroD1 antibody [EPR20766] (ab213725)

Developed using the ECL technique.

Predicted band size: 40 kDa

Observed band size: 39 kDa

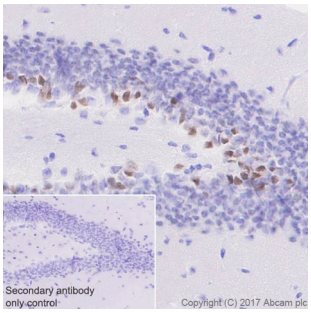


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuroD1 antibody [EPR20766] (ab213725)

NeuroD1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NeuroD1 antibody

Immunohistochemical analysis of paraffin-embedded rat hippocampus tissue labeling NeuroD1 with ab213725 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Nuclear staining on subgranular zone of the rat hippocampus (PMID: 19701197, PMID: 25825708) is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

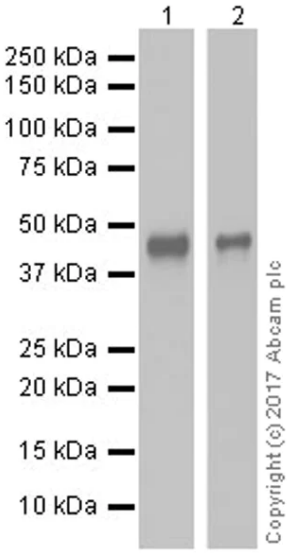


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NeuroD1 antibody [EPR20766] (ab213725)

NeuroD1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NeuroD1 antibody

Immunohistochemical analysis of paraffin-embedded mouse hippocampus tissue labeling NeuroD1 with ab213725 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) Ready to use. Nuclear staining on subgranular zone of the mouse hippocampus dentate gyrus (PMID: 19701197, PMID: 25825708) is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) Ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-NeuroD1 antibody [EPR20766] (ab213725)

NeuroD1 Western blot staining using rabbit Anti-NeuroD1 antibody

Blocking/dilution buffer: 5% NFDM/TBST
Exposure times.

Lane 1: 10 seconds

Lane 2: 30 seconds

All lanes:
Western blot - Anti-NeuroD1 antibody [EPR20766] (ab213725) at 1/1000 dilution

Lane 1:
Y79 (human retinoblastoma cell line) whole cell lysate at 20 µg

Lane 2:
Mouse P3 (postnatal day 3) retina lysate at 20 µg

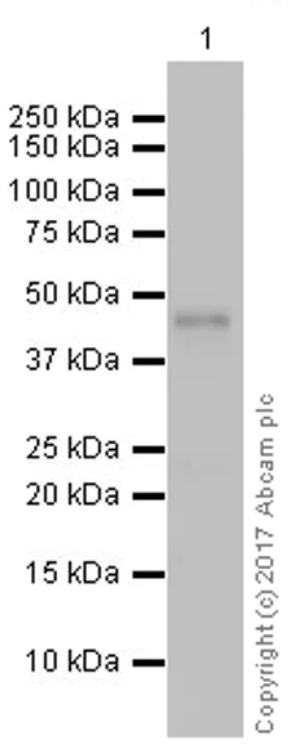
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 40 kDa

Observed band size: 39 kDa



Western blot - Anti-NeuroD1 antibody [EPR20766] (ab213725)

Blocking/dilution buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-NeuroD1 antibody [EPR20766] (ab213725) at 1000 Cells

All lanes:
Rat retina tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 40 kDa

Observed band size: 39 kDa

Exposure time: 3min

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.