abcam

ab240170

Anti-SF3B1 antibody [EPR11986] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR11986
Purification technique	Affinity purification Protein A
Concentration	1.013 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	-

Expected

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

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Species	Mouse
Dilution info	1/200
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Target data

See full target information SF3B1

Function Component of the 17S U2 SnRNP complex of the spliceosome, a large ribonucleoprotein complex that removes introns from transcribed pre-mRNAs (PubMed:12234937, PubMed:27720643, PubMed:32494006, PubMed:34822310, PubMed:36104565). The 17S U2 SnRNP complex (1) directly participates in early spliceosome assembly and (2) mediates recognition of the intron branch site during pre-mRNA splicing by promoting the selection of the pre-mRNA branch-site

adenosine, the nucleophile for the first step of splicing (PubMed:32494006, PubMed:34822310, PubMed:36104565). Within the 17S U2 SnRNP complex, SF3B1 is part of the SF3B subcomplex, which is required for 'A' complex assembly formed by the stable binding of U2 snRNP to the branchpoint sequence in pre-mRNA (PubMed:12234937, PubMed:36104565). Sequence independent binding of SF3A and SF3B subcomplexes upstream of the branch site is essential, it may anchor U2 snRNP to the pre-mRNA (PubMed:12234937). May also be involved in the assembly of the 'E' complex (PubMed:10882114). Also acts as a component of the minor spliceosome, which is involved in the splicing of U12-type introns in pre-mRNAs (PubMed:15146077, PubMed:33509932). Together with other U2 snRNP complex components may also play a role in the selective processing of microRNAs (miRNAs) from the long primary miRNA transcript, pri-miR-17-92 (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab240170 is the carrier-free version of ab172634.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	SF3B1 also known as Splicing Factor 3B subunit 1 plays an important role in the mRNA splicing process. This protein participates in the splicing machinery as part of the spliceosome contributing to the removal of introns from pre-mRNA. SF3B1 has a molecular weight of approximately 160 kDa. It is ubiquitously expressed yet shows a high level of activity in tissues with rapid cell division such as the bone marrow and lymphatic tissue reflecting its central involvement in gene expression regulation.
Biological function summary	SF3B1 is an essential component of the spliceosomal complex specifically the U2 snRNP component. It helps establish the branchpoint recognition complex ensuring accurate RNA splicing necessary for producing functional mRNA molecules. This process is important for the expression of diverse protein-coding genes affecting multiple aspects of cellular function and identity. The protein interacts with other spliceosomal proteins like SF3A and U2AF to guide the precise removal of non-coding sequences enabling proper translation into proteins.
Pathways	SF3B1 is involved in the mRNA processing pathway and influences the cell cycle pathway. During mRNA processing SF3B1 aids in assembling the spliceosome facilitating the excision of introns. The protein interacts with components like SF3B2 in coordinating splicing with other RNA processing events. In the cell cycle pathway SF3B1 indirectly affects gene expression and stability influencing cell cycle progression and serving as a regulatory node by modulating the splicing of key regulators active during cell division.
Associated diseases and disorders	Several studies associate SF3B1 mutations with certain types of cancer including myelodysplastic syndrome and chronic lymphocytic leukemia. These mutations often result in aberrant splicing events leading to altered gene expression profiles that can promote tumorigenesis. Within these disease contexts SF3B1 abnormalities can influence interactions with related proteins like SRSF2 contributing to misregulated splicing patterns of genes that drive cancerous transformations and affect patient prognosis.

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.

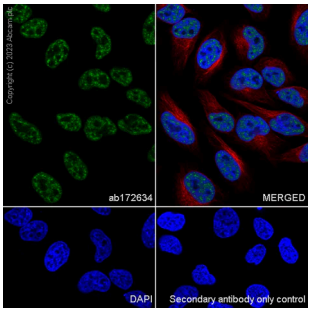
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

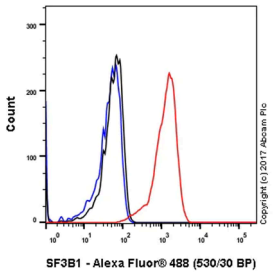
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8 product images



Immunocytochemistry/ Immunofluorescence - Anti-SF3B1 antibody [EPR11986] - BSA and Azide free (ab240170)

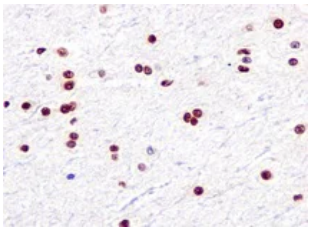
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab172634). Immunocytochemistry/ Immunofluorescence analysis of HeLa (human cervical adenocarcinoma epithelial cell) labeling SF3B1 with ab172634 at 1/200 dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution. Cells were fixed with 4% Paraformaldehyde and permeabilised with 0.1% TritonX-100. Nuclear counterstain was DAPI. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) at 1/200 was used as counterstain antibody. Confocal image showing nuclear staining in Hela cell line. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Flow Cytometry (Intracellular) - Anti-SF3B1 antibody [EPR11986] - BSA and Azide free (ab240170)

SF3B1 Flow Cytometry (Intracellular) staining using rabbit Anti-SF3B1 antibody

Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling SF3B1 (red) with ab172634 at a 1/2000 dilution. Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. A goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody at a 1/2000 dilution. Black - Rabbit monoclonal IgG (ab172730). Blue (unlabeled control) - Cells without incubation with the primary and secondary antibodies.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab172634).

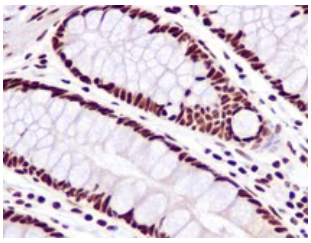


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SF3B1 antibody [EPR11986] - BSA and Azide free (ab240170)

SF3B1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SF3B1 antibody

Immunohistochemical analysis of Formalin-fixed, paraffin-embedded Human glioma tissue labeling SF3B1 with ab172634 at 1/100 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab172634).

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

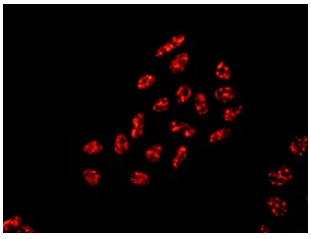


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SF3B1 antibody [EPR11986] - BSA and Azide free (ab240170)

SF3B1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SF3B1 antibody

Immunohistochemical analysis of Formalin-fixed, paraffin-embedded Human colon tissue labeling SF3B1 with ab172634 at 1/100 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab172634).

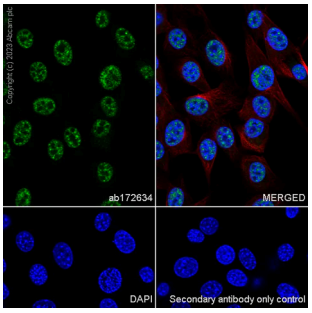
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-SF3B1 antibody [EPR11986] - BSA and Azide free (ab240170)

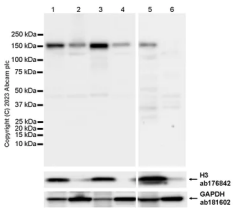
SF3B1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-SF3B1 antibody

Immunofluorescence analysis of HeLa cells labeling SF3B1 with ab172634 at 1/250 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab172634).



Immunocytochemistry/ Immunofluorescence - Anti-SF3B1 antibody [EPR11986] - BSA and Azide free (ab240170)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab172634). Immunocytochemistry/ Immunofluorescence analysis of NIH/3T3 (mouse embryonic fibroblast) labeling SF3B1 with ab172634 at 1/200 dilution followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution. Cells were fixed with 4% Paraformaldehyde and permeabilised with 0.1% TritonX-100. Nuclear counterstain was DAPI. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) at 1/200 was used as counterstain antibody. Confocal image showing nuclear staining in NIH/3T3 cell line. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Western blot - Anti-SF3B1 antibody [EPR11986] - BSA and Azide free (ab240170)

SF3B1 Western blot staining using rabbit Anti-SF3B1 antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab172634). Blocking/Diluting buffer and concentration: 5% NFDM/TBST Exposure time: Lane 1-4: 1 second Lane 5-6: 10 seconds In Western blot, anti- H3 antibody (ab176842) loading control staining at 1/100000 dilution and anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution.
All lanes:
Western blot - Anti-SF3B1 antibody [EPR11986] (ab172634) at 1/1000 dilution

Lane 1:
HeLa (human cervical adenocarcinoma epithelial cell) nuclear fraction at 20 µg

Lane 2:
HeLa (human cervical adenocarcinoma epithelial cell) cytoplasmic fraction at 20 µg

Lane 3:
PC-12 (rat adrenal gland pheochromocytoma cell) nuclear fraction at 20 µg

Lane 4:
PC-12 (rat adrenal gland pheochromocytoma cell) cytoplasmic fraction at 20 µg

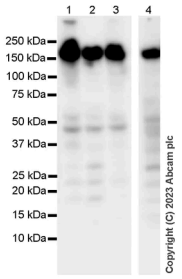
Lane 5:
RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) nuclear fraction at 20 µg

Lane 6:
RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) cytoplasmic fraction at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 145 kDa



Western blot - Anti-SF3B1 antibody [EPR11986] - BSA and Azide free (ab240170)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab172634). Blocking/Diluting buffer and concentration: 5% NFDM/TBST Exposure time: Lane 1-3: 3.25 seconds Lane 4: 15 seconds
All lanes:
Western blot - Anti-SF3B1 antibody [EPR11986] (ab172634) at 1/1000 dilution

Lane 1:
RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

Lane 2:
PC-12 (rat adrenal gland pheochromocytoma cell) whole cell lysate at 20 µg

Lane 3:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

Lane 4:
C6 (rat glial tumor glial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 146 kDa

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