abcam

ab232365

Anti-SUN2 antibody [EPR6557] - 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	EPR6557
Purification technique	Affinity purification Protein A
Concentration	1.025 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	0.2-1 µg/mL
Notes	-

Expected

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

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

IHC-P

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 SUN2

Function	As a component of the LINC (LInker of Nucleoskeleton and Cytoskeleton) complex, involved in the connection between the nuclear lamina and the cytoskeleton. The nucleocytoplasmic interactions established by the LINC complex play an important role in the transmission of mechanical forces across the nuclear envelope and in nuclear movement and positioning. Specifically, SYNE2 and SUN2 assemble in arrays of transmembrane actin-associated nuclear (TAN) lines which are bound to F-actin cables and couple the nucleus to retrograde actin flow during actin-dependent nuclear movement. Required for interkinetic nuclear migration (INM) and essential for nucleokinesis and centrosome-nucleus coupling during radial neuronal migration in the cerebral cortex and during glial migration. Required for nuclear migration in retinal photoreceptor progenitors implicating association with cytoplasmic dynein-dynactin and kinesin motor complexes, and probably B-type lamins; SUN1 and SUN2 seem to act redundantly. The SUN1/2:KASH5 LINC complex couples telomeres to microtubules during meiosis; SUN1 and SUN2 seem to act at least partial redundantly. Anchors chromosome movement in the prophase of meiosis and is involved in selective gene expression of coding and non-coding RNAs needed for gametogenesis. Required for telomere attachment to nuclear envelope and gametogenesis. May also function on endocytic vesicles as a receptor for RAB5-GDP and participate in the activation of RAB5.

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

ab232365 is the carrier-free version of ab124916.

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	SUN2 also known as Sad1 and UNC84 domain containing 2 is a protein that plays a fundamental role in the positioning of the nucleus in cells. It has a mass of approximately 89 kDa. This protein localizes to the inner nuclear membrane where it is involved in tethering the nucleus to the cytoskeleton. SUN2 is mainly expressed in tissues exhibiting high mechanical stress such as muscle and bone tissue. Its structural role anchors the nuclear lamina to the cytoskeleton helping to maintain cellular integrity.
Biological function summary	SUN2 connects the nuclear interior with the cytoskeleton through the LINC complex (Linker of Nucleoskeleton and Cytoskeleton). This complex also includes other proteins like Nesprin and Lamins helping to transmit mechanical signals across the nuclear envelope. SUN2 plays an essential role in processes like cell division nuclear migration and chromosomal positioning. Its function in the LINC complex makes it a significant player in maintaining nuclear morphology and ensuring proper cell division.
Pathways	SUN2 is involved in the mechanotransduction and cell-cycle regulation pathways. In mechanotransduction SUN2 helps translate mechanical signals into biochemical ones therefore influencing gene expression. Related proteins like Nesprin-2 interact within the LINC complex and contribute to these pathways. In cell-cycle regulation the protein helps align the mitotic spindle through connection with components of the cytoskeleton supporting accurate cell division. These pathways demonstrate SUN2's contribution to cellular responses to mechanical stimuli and cell growth regulation.

Associated diseases and disorders	Studies indicate that SUN2 mutations or abnormal expression levels are associated with muscular dystrophy and cancer. In muscular dystrophy defects in SUN2 can lead to impaired nuclear anchoring contributing to muscle weakness. It interacts with Lamin A/C and defects in these proteins are also linked to muscular dystrophies. In cancer SUN2 dysregulation may affect cellular architecture and chromosomal stability contributing to tumorigenesis. Understanding SUN2's roles and interactions offers potential pathways for therapeutic interventions.

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

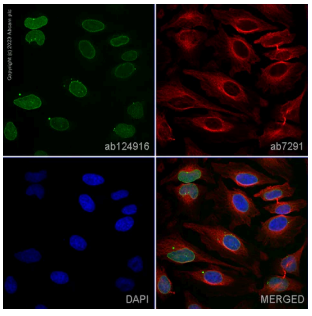
We do not recommend this combination. It is not covered by our product promise.

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.

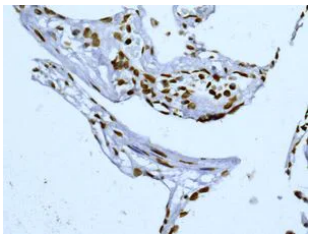
8 product images



Immunocytochemistry/ Immunofluorescence - Anti-SUN2 antibody [EPR6557] - BSA and Azide free (ab232365)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab124916). Immunofluorescence staining of SUN2 using ab124916 in HeLa cells. The cells were fixed with 4% formaldehyde (10 min), permeabilized with 0.1% Triton-X-100 (in PBS) for 5 mins and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab124916 at 0.2 µg/ml and ab7291, Mouse monoclonal [DM1A] to alpha Tubulin, at 1/1000 dilution. Cells were then incubated with ab150081, Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (shown in green) and ab150120, Goat Anti-

Mouse IgG H&L (Alexa Fluor® 594) preadsorbed at 1/1000 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue). Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown.

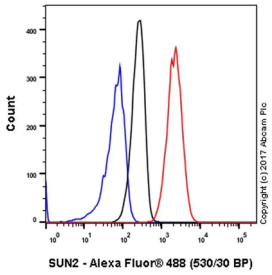


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SUN2 antibody [EPR6557] - BSA and Azide free (ab232365)

SUN2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SUN2 antibody

ab124916, unpurified, at a 1/250 dilution, staining SUN2 in paraffin embedded Human lung tissue by Immunohistochemistry.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab124916).

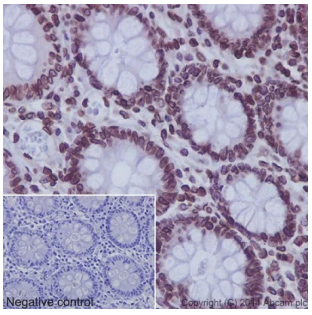
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-SUN2 antibody [EPR6557] - BSA and Azide free (ab232365)

SUN2 Flow Cytometry (Intracellular) staining using rabbit Anti-SUN2 antibody

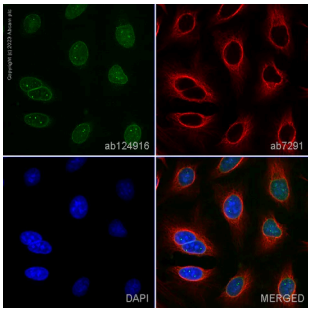
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling SUN2 (red) with ab124916 at a 1/30 dilution. Cells were fixed with 80% methanol and permeabilized with 0.1% Tween-20. A goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody at a 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 (ab124916).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SUN2 antibody [EPR6557] - BSA and Azide free (ab232365)

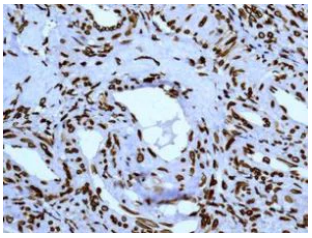
SUN2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SUN2 antibody

ab124916 staining SUN2 in Human colon tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed and paraffin-embedded, antigen retrieval was by heat mediation in Tris/EDTA buffer pH9. Samples were incubated with primary antibody (1/500). An HRP-conjugated Goat anti-rabbit IgG, ab97051 (1/500), was used as the secondary antibody. Tissue counterstained with Hematoxylin. PBS was used in the negative control rather than the Primary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab124916).



Immunocytochemistry/ Immunofluorescence - Anti-SUN2 antibody [EPR6557] - BSA and Azide free (ab232365)

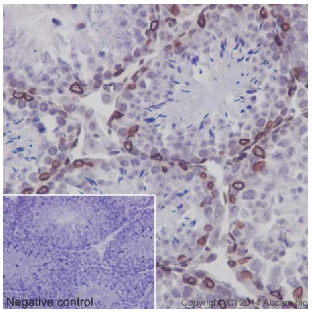
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab124916). Immunofluorescence staining of SUN2 using ab124916 in HeLa cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% Triton-X-100 (in PBS) for 5 mins and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab124916 at 1.0 µg/ml and ab7291, Mouse monoclonal [DM1A] to alpha Tubulin, at 1/1000 dilution. Cells were then incubated with ab150081, Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (shown in green) and ab150120, Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed at 1/1000 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue). Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SUN2 antibody [EPR6557] - BSA and Azide free (ab232365)

ab124916, unpurified, at a 1/250 dilution, staining SUN2 in paraffin embedded Human ovarian tissue by Immunohistochemistry.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab124916).

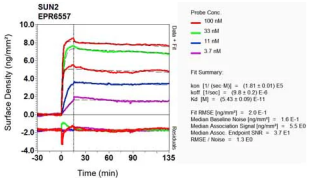
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SUN2 antibody [EPR6557] - BSA and Azide free (ab232365)

SUN2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-SUN2 antibody

ab124916 staining SUN2 in mouse testis tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed and paraffin-embedded, antigen retrieval was by heat mediation in Tris/EDTA buffer pH9. Samples were incubated with primary antibody (1/500). An HRP-conjugated goat anti-rabbit IgG, ab97051 (1/500) was used as the secondary antibody. Tissue counterstained with Hematoxylin. PBS was used in the negative control rather than the Primary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab124916).



OI-RD Scanning - Anti-SUN2 antibody [EPR6557] - BSA and Azide free (ab232365)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

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