abcam

Product datasheet

# Anti-SMN/Gemin 1 antibody [EPR4429] ab108531

Recombinant RabMAb

5 References 9 Images

## Overview

| | |
|---|---|
| **Product name** | Anti-SMN/Gemin 1 antibody [EPR4429] |
| **Description** | Rabbit monoclonal [EPR4429] to SMN/Gemin 1 |
| **Host species** | Rabbit |
| **Tested applications** | **Suitable for:** IHC-Fr, ICC/IF, WB<br>**Unsuitable for:** IP |
| **Species reactivity** | **Reacts with:** Human |
| **Immunogen** | Synthetic peptide. This information is proprietary to Abcam and/or its suppliers. |
| **Positive control** | WB: Recombinant Human SMN/Gemin 1 protein (**ab114802**), HeLa, HepG2, K562, HEK293 and 293T cell lysates. ICC/IF: SH-SY5Y cells. IHC-Fr: Human frozen cervix, prostate cancer and hippocampus tissue sections. |
| **General notes** | This product is a recombinant monoclonal antibody, which offers several advantages including:<br>- High batch-to-batch consistency and reproducibility<br>- Improved sensitivity and specificity<br>- Long-term security of supply<br>- Animal-free production<br>For more information **see here**.<br>Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.<br><br>Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information. |

## Properties

| | |
|---|---|
| **Form** | Liquid |
| **Storage instructions** | Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Stable for 12 months at -20°C. |
| **Storage buffer** | pH: 7.20<br>Preservative: 0.01% Sodium azide<br>Constituents: 40% Glycerol (glycerin, glycerine), 59% PBS, 0.05% BSA |
| **Purity** | Protein A purified |

| | |
|---|---|
| **Clonality** | Monoclonal |
| **Clone number** | EPR4429 |
| **Isotype** | IgG |

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab108531 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

| Application | Abreviews | Notes |
|---|---|---|
| **IHC-Fr** | | Use a concentration of 1 - 2.5 µg/ml. |
| **ICC/IF** | | 1/250. **For unpurified use at 1/100 - 1/250.** |
| **WB** | | 1/1000. Detects a band of approximately 38 kDa (predicted molecular weight: 32 kDa).<br>**For unpurified use at 1/1000 - 1/10000.** |

**Application notes** Is unsuitable for IP.

## Target

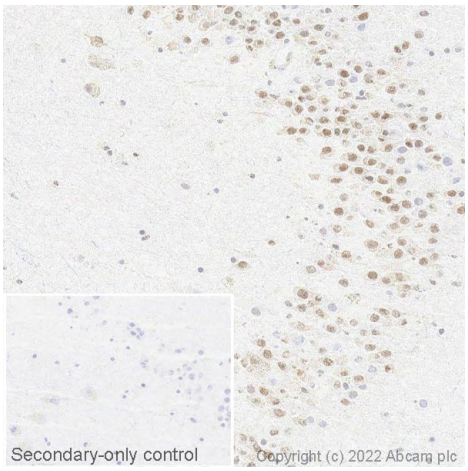
**Function** The SMN complex plays an essential role in spliceosomal snRNP assembly in the cytoplasm and is required for pre-mRNA splicing in the nucleus. It may also play a role in the metabolism of snoRNPs.

**Tissue specificity** Expressed in a wide variety of tissues. Expressed at high levels in brain, kidney and liver, moderate levels in skeletal and cardiac muscle, and low levels in fibroblasts and lymphocytes. Also seen at high levels in spinal cord. Present in osteoclasts and mononuclear cells (at protein level).

**Involvement in disease** Defects in SMN1 are the cause of spinal muscular atrophy autosomal recessive type 1 (SMA1) [MIM:253300]. Spinal muscular atrophy refers to a group of neuromuscular disorders characterized by degeneration of the anterior horn cells of the spinal cord, leading to symmetrical muscle weakness and atrophy. Autosomal recessive forms are classified according to the age of onset, the maximum muscular activity achieved, and survivorship. The severity of the disease is mainly determined by the copy number of SMN2, a copy gene which predominantly produces exon 7-skipped transcripts and only low amount of full-length transcripts that encode for a protein identical to SMN1. Only about 4% of SMA patients bear one SMN1 copy with an intragenic mutation. SMA1 is a severe form, with onset before 6 months of age. SMA1 patients never achieve the ability to sit.
Defects in SMN1 are the cause of spinal muscular atrophy autosomal recessive type 2 (SMA2) [MIM:253550]. SMA2 is an autosomal recessive spinal muscular atrophy of intermediate severity, with onset between 6 and 18 months. Patients do not reach the motor milestone of standing, and survive into adulthood.
Defects in SMN1 are the cause of spinal muscular atrophy autosomal recessive type 3 (SMA3) [MIM:253400]. SMA3 is an autosomal recessive spinal muscular atrophy with onset after 18 months. SMA3 patients develop ability to stand and walk and survive into adulthood.
Defects in SMN1 are the cause of spinal muscular atrophy autosomal recessive type 4 (SMA4)

| | |
|---|---|
| | [MIM:271150]. SMA4 is an autosomal recessive spinal muscular atrophy characterized by symmetric proximal muscle weakness with onset in adulthood and slow disease progression. SMA4 patients can stand and walk. |
| **Sequence similarities** | Belongs to the SMN family.<br>Contains 1 Tudor domain. |
| **Cellular localization** | Cytoplasm. Nucleus > gem. Localized in subnuclear structures next to coiled bodies, called Gemini of Cajal bodies. |

## Images

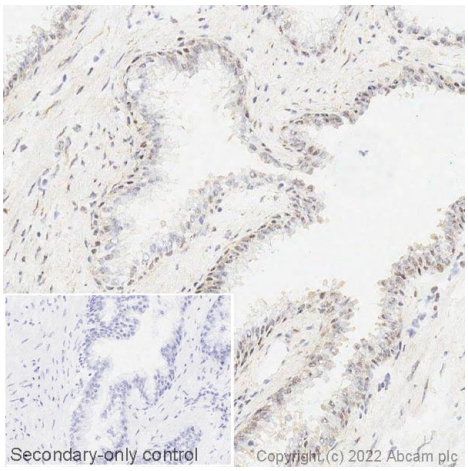



Immunohistochemistry (Frozen sections) - Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531)
Lab

IHC image of SMN/Gemin 1 staining in a section of human normal frozen hippocampus* performed on a Leica Biosystems BOND® RX instrument using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab108531, 2.5ugml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.




Immunohistochemistry (Frozen sections) - Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531)
Lab

IHC image of SMN/Gemin 1 staining in a section of human normal frozen prostate cancer* performed on a Leica Biosystems BOND® RX instrument using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab108531, 1ugml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

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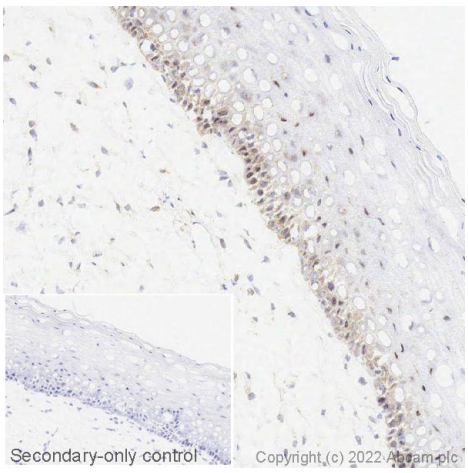
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.




Immunohistochemistry (Frozen sections) - Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531)

Lab

IHC image of SMN/Gemin 1 staining in a section of human normal frozen cervix* performed on a Leica Biosystems BOND® RX instrument using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab108531, 1ugml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

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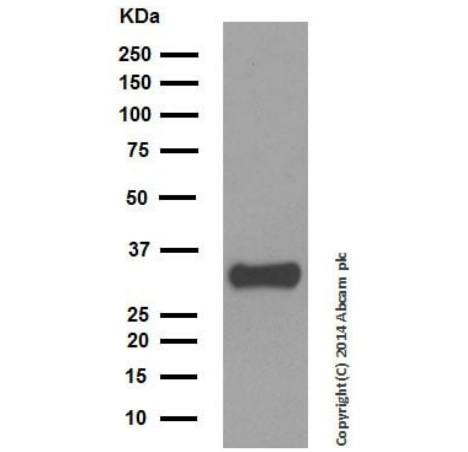



Western blot - Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531)

Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531) at 1/1000 dilution (purified) + HeLa cell lysate at 20 µg

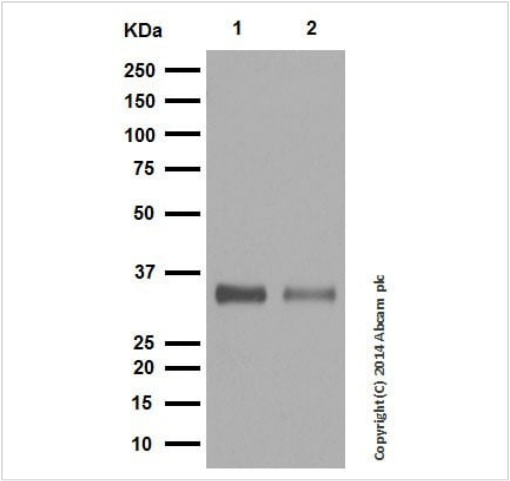
**Secondary**

Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

**Predicted band size:** 32 kDa

**Observed band size:** 35 kDa

Blocking and diluting buffer: 5% NFDM/TBST.




Western blot - Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531)

**All lanes :** Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531) at 1/1000 dilution (purified)

**Lane 1 :** K562 cell lysate

**Lane 2 :** HEK-293 cell lysate

Lysates/proteins at 20 µg per lane.

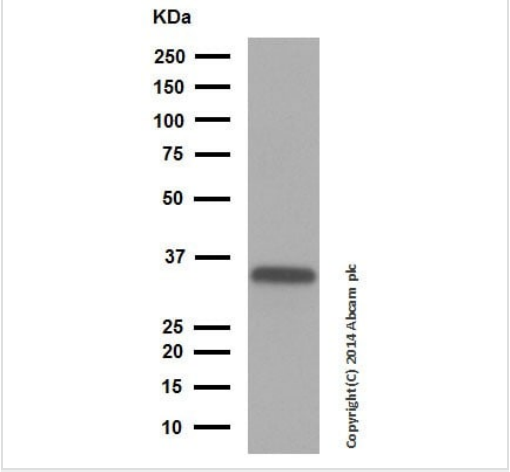
**Secondary**

**All lanes :** Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

**Predicted band size:** 32 kDa

**Observed band size:** 35 kDa

Blocking and diluting buffer: 5% NFDM/TBST.




Western blot - Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531)

Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531) at 1/5000 dilution (purified) + HepG2 cell lysate at 20 µg

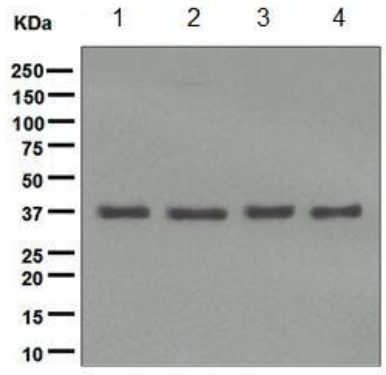
**Secondary**

Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

**Predicted band size:** 32 kDa

**Observed band size:** 35 kDa

Blocking and diluting buffer: 5% NFDM/TBST.




Western blot - Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531)

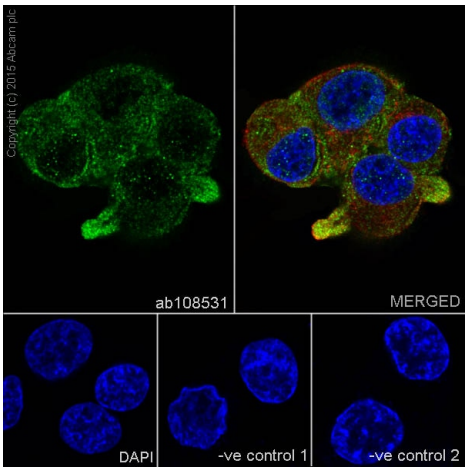
**All lanes :** Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531) at 1/1000 dilution (unpurified)

**Lane 1 :** HeLa cell lysate
**Lane 2 :** HepG2 cell lysate
**Lane 3 :** K562 cell lysate
**Lane 4 :** 293T cell lysate

Lysates/proteins at 10 µg per lane.

**Secondary**
**All lanes :** HRP-conjugated goat anti-rabbit IgG at 1/2000 dilution

**Predicted band size:** 32 kDa

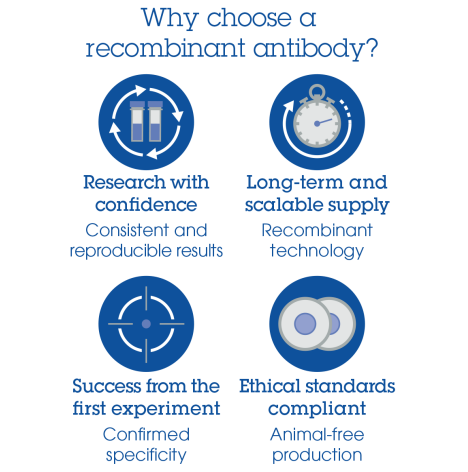



Immunocytochemistry/ Immunofluorescence - Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531)

Immunocytochemistry/Immunofluorescence analysis of SH-SY5Y cells labelling Gemin 1 with purified ab108531 at 1/250. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. **ab150077**, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain. **ab7291**, a mouse anti-tubulin (1/500) and **ab150120**, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/500) were also used.

Control 1: primary antibody (1/100) and secondary antibody, **ab150120**, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/500).

Control 2: **ab7291** (1/1000) and secondary antibody, **ab150077**, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500).




Anti-SMN/Gemin 1 antibody [EPR4429] (ab108531)

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