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Product datasheet

Anti-Gemin 3 antibody [12H12] ab10305

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Overview

Product name	Anti-Gemin 3 antibody [12H12]
Description	Mouse monoclonal [12H12] to Gemin 3
Host species	Mouse
Tested applications	**Suitable for:** Flow Cyt
Species reactivity	**Reacts with:** Human
Immunogen	Recombinant 6His-tag C-terminal domain of Gemin 3 (amino acids 368-548).

General notes

The survival of motor neurons (SMN) gene is the disease gene of spinal muscular atrophy (SMA), a common motor neuron degenerative disease. The SMN protein is part of a complex containing several proteins, of which one, SIP1 (SMN interacting protein 1), has been characterized so far. The SMN complex is found in both the cytoplasm and in the nucleus, where it is concentrated in bodies called gems. In the cytoplasm, SMN and SIP1 interact with the Sm core proteins of spliceosomal small nuclear ribonucleoproteins (snRNPs), and they play a critical role in snRNP assembly. In the nucleus, SMN is required for pre-mRNA splicing, likely by serving in the regeneration of snRNPs. A DEAD box putative RNA helicase, named Gemin 3 which is another component of the SMN complex, has been identified. Gemin 3 interacts directly with SMN, as well as with SmB, SmD2 and SmD3. Immunolocalization studies using mAbs to Gemin 3 show that it colocalizes with SMN in gems. Gemin 3 binds SMN via its unique COOH-terminal domain, and SMN mutations found in some SMA patients strongly reduce this interaction. The presence of a DEAD box motif in Gemin 3 suggests that it may provide the catalytic activity that plays a critical role in the function of the SMN complex on RNPs.

The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.

If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid

Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
Storage buffer	Preservative: 0.1% Sodium azide Constituent: PBS
Purity	Protein A purified
Purification notes	Protein A purified from tissue culture supernatant.
Primary antibody notes	The survival of motor neurons (SMN) gene is the disease gene of spinal muscular atrophy (SMA), a common motor neuron degenerative disease. The SMN protein is part of a complex containing several proteins, of which one, SIP1 (SMN interacting protein 1), has been characterized so far. The SMN complex is found in both the cytoplasm and in the nucleus, where it is concentrated in bodies called gems. In the cytoplasm, SMN and SIP1 interact with the Sm core proteins of spliceosomal small nuclear ribonucleoproteins (snRNPs), and they play a critical role in snRNP assembly. In the nucleus, SMN is required for pre-mRNA splicing, likely by serving in the regeneration of snRNPs. A DEAD box putative RNA helicase, named Gemin 3 which is another component of the SMN complex, has been identified. Gemin 3 interacts directly with SMN, as well as with SmB, SmD2 and SmD3. Immunolocalization studies using mAbs to Gemin 3 show that it colocalizes with SMN in gems. Gemin 3 binds SMN via its unique COOH-terminal domain, and SMN mutations found in some SMA patients strongly reduce this interaction. The presence of a DEAD box motif in Gemin 3 suggests that it may provide the catalytic activity that plays a critical role in the function of the SMN complex on RNPs.
Clonality	Monoclonal
Clone number	12H12
Myeloma	Sp2/0
Isotype	IgG1

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab10305 in the following tested applications.

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

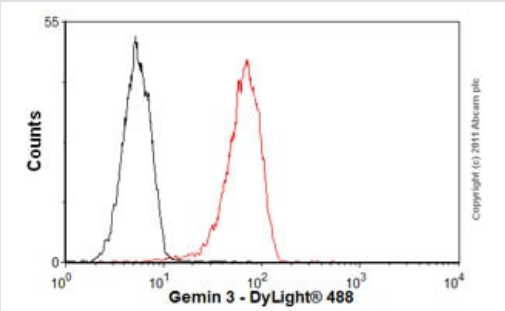
Application	Abreviews	Notes
Flow Cyt		Use 1µg for 10^6 cells. **ab170190** - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

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	Ubiquitous.
Sequence similarities	Belongs to the DEAD box helicase family. DDX20 subfamily. Contains 1 helicase ATP-binding domain. Contains 1 helicase C-terminal domain.

Cellular localization	Cytoplasm. Nucleus > gem. Localized in subnuclear structures next to coiled bodies, called Gemini of Cajal bodies.

Images



Flow Cytometry - Anti-Gemin 3 antibody [12H12] (ab10305)

Overlay histogram showing HeLa cells stained with ab10305 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab10305, 1µg/1x10^6 cells) for 30 min at 22ºC. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (**ab96879**) at 1/500 dilution for 30 min at 22ºC. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (**ab91353**, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.

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