abcam

Product datasheet

Anti-CD133 antibody - Stem Cell Marker ab19898

27 Abreviews 245 References 6 Images

Overview

Product name	Anti-CD133 antibody - Stem Cell Marker
Description	Rabbit polyclonal to CD133 - Stem Cell Marker
Host species	Rabbit
Specificity	From Jan 2024, QC testing of replenishment batches of this polyclonal changed. All tested and expected application and reactive species combinations are still covered by our Abcam product promise. However, we no longer test all applications. For more information on a specific batch, please contact our Scientific Support who will be happy to help. You may also be interested in our alternative recombinant antibody, **ab284389**.
Tested applications	**Suitable for:** ICC, ICC/IF, Flow Cyt, IHC-P, IHC-Fr, IP, WB
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Synthetic peptide corresponding to Human CD133 (C terminal) conjugated to keyhole limpet haemocyanin. Database link: **O43490**
Positive control	WB: Caco 2, HeLa and human embryonic stem cell lysates. ICC/IF: Caco-2 cells
General notes	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	Store at +4°C short term (1-2 weeks). Aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
Storage buffer	pH: 7.40 Preservative: 0.02% Sodium azide Constituents: PBS, 1% BSA
Purity	Immunogen affinity purified

Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab19898 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
ICC	★★★★☆ (1)	Use at an assay dependent concentration.
ICC/IF	★★★★★ (6)	Use at an assay dependent concentration.
Flow Cyt	★★★★★ (3)	Use at an assay dependent concentration.
IHC-P	★★★★☆ (11)	Use at an assay dependent concentration.
IHC-Fr	★★★★☆ (4)	Use at an assay dependent concentration. PubMed: 23769181
IP		1/30.
WB	★★★★☆ (2)	Use a concentration of 1 - 2 µg/ml. Detects a band of approximately 110 kDa (predicted molecular weight: 97 kDa).

Target

Function May play a role in cell differentiation, proliferation and apoptosis (PubMed:24556617). Binds cholesterol in cholesterol-containing plasma membrane microdomains and may play a role in the organization of the apical plasma membrane in epithelial cells. During early retinal development acts as a key regulator of disk morphogenesis. Involved in regulation of MAPK and Akt signaling pathways. In neuroblastoma cells suppresses cell differentiation such as neurite outgrowth in a RET-dependent manner (PubMed:20818439).

Tissue specificity Isoform 1 is selectively expressed on CD34 hematopoietic stem and progenitor cells in adult and fetal bone marrow, fetal liver, cord blood and adult peripheral blood. Isoform 1 is not detected on other blood cells. Isoform 1 is also expressed in a number of non-lymphoid tissues including retina, pancreas, placenta, kidney, liver, lung, brain and heart. Found in saliva within small membrane particles. Isoform 2 is predominantly expressed in fetal liver, skeletal muscle, kidney, and heart as well as adult pancreas, kidney, liver, lung, and placenta. Isoform 2 is highly expressed in fetal liver, low in bone marrow, and barely detectable in peripheral blood. Isoform 2 is expressed on hematopoietic stem cells and in epidermal basal cells (at protein level). Expressed in adult retina by rod and cone photoreceptor cells (at protein level).

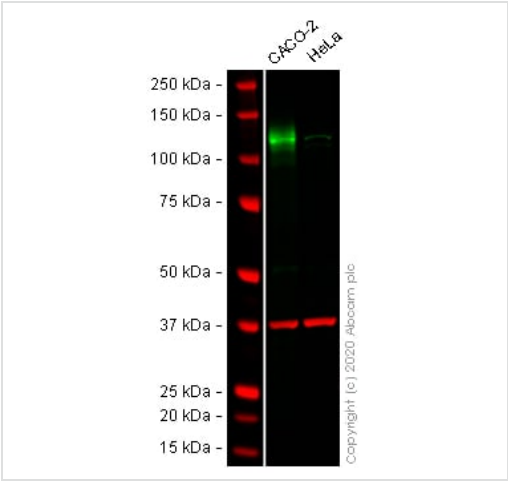
Involvement in disease Retinitis pigmentosa 41
Cone-rod dystrophy 12
Stargardt disease 4
Retinal macular dystrophy 2

Sequence similarities Belongs to the prominin family.

Post-translational Isoform 1 and isoform 2 are glycosylated.

modifications	Acetylation at Lys-225, Lys-257 and Lys-264 by NAT8 and NAT8B may control PROM1 protein expression and its function in cell apoptosis.
Cellular localization	Apical cell membrane. Cell projection, microvillus membrane. Cell projection, cilium, photoreceptor outer segment. Endoplasmic reticulum. Endoplasmic reticulum-Golgi intermediate compartment. Found in extracellular membrane particles in various body fluids such as cerebrospinal fluid, saliva, seminal fluid and urine.

Images



Western blot - Anti-CD133 antibody - Stem Cell Marker (ab19898)

All lanes : Anti-CD133 antibody - Stem Cell Marker (ab19898) at 1 µg/ml

Lane 1 : Caco 2 cell lysate
Lane 2 : HeLa cell lysate

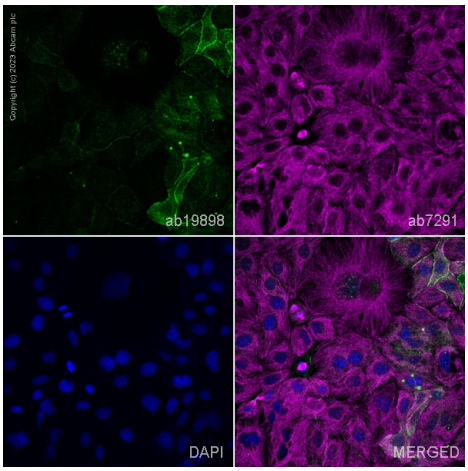
Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

Predicted band size: 97 kDa
Observed band size: 97 kDa

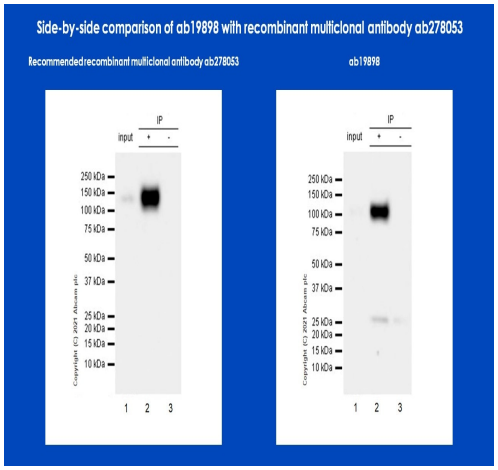
Lanes 1 - 2: Merged signal (red and green). Green - ab19898 observed at 97 kDa. Red - loading control, **ab8245** (Mouse anti-GAPDH antibody [6C5]) observed at 37kDa.

ab19898 was shown to react with CD133 in western blot. Membranes were blocked in 3% milk in TBS-T (0.1% Tween®) before incubation with ab19898 and **ab8245** (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at 1 µg/ml and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



Immunocytochemistry/ Immunofluorescence - Anti-CD133 antibody - Stem Cell Marker (ab19898)

ab19898 staining CD133 in Caco-2 cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% PBS-Tween for 5 minutes 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 ab19898 at 1µg/ml and **ab7291**, Mouse monoclonal [DM1A] to alpha Tubulin - Loading Control. Cells were then incubated with **ab150081**, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 488), pre-adsorbed at 1/1000 dilution (shown in green) and **ab150120**, Goat polyclonal Secondary Antibody to Mouse IgG - H&L (Alexa Fluor®594), pre-adsorbed at 1/1000 dilution (shown in pseudocolour magenta). 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.



Immunoprecipitation - Anti-CD133 antibody - Stem Cell Marker (ab19898)

Immunoprecipitation side-by-side comparison with the recombinant multiclonal antibody **ab278053**

This immunoprecipitation image is a comparison between ab19898 and the alternative recombinant multiclonal antibody **ab278053**.

Left side - Recombinant multiclonal to CD133 - **ab278053**

CD133 was immunoprecipitated from 0.35 mg Caco-2 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate with **ab278053** at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using **ab278053** at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (**ab131366**) was used at 1/5000 dilution.

Lane 1: Caco-2 whole cell lysate 10 µg.

Lane 2: **ab278053** IP in Caco-2 whole cell lysate.

Lane 3: Rabbit monoclonal IgG (**ab172730**) instead of **ab278053** in Caco-2 whole cell lysate.

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

Exposure time: 3 seconds.

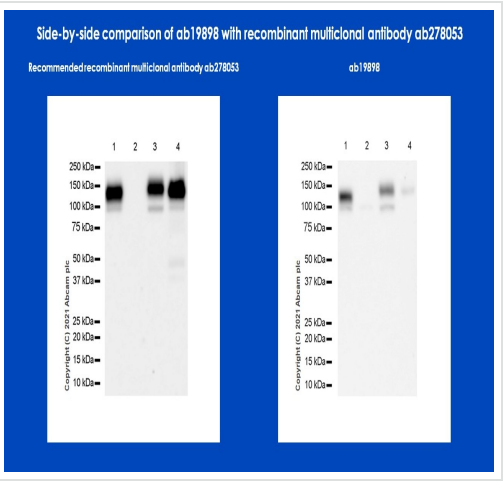
Right side - Polyclonal antibody to [CD133] - ab19898

Same testing conditions as **ab278053**.

Why choose a recombinant antibody?

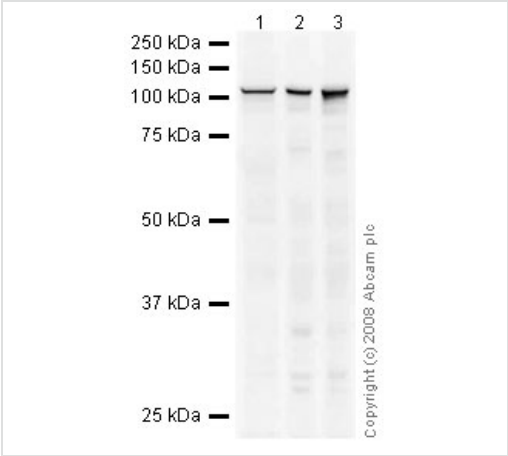
Research with confidence - consistent and reproducible results with

every batch
Long-term and scalable supply - powered by recombinant technology for fast production
Success from the first experiment - confirmed specificity through extensive validation
Ethical standards compliant - production is animal-free



Western blot - Anti-CD133 antibody - Stem Cell Marker (ab19898)

Western blot side-by-side comparison with the recombinant multiclonal antibody **ab278053**
This Western blot image is a comparison between ab19898 and the alternative recombinant multiclonal antibody **ab278053**.
Left side - Recombinant multiclonal to CD133 - **ab278053**
All lanes : Anti-CD133 antibody [RM1002] (**ab278053**) at 1/1000 dilution
Lane 1 : Caco-2 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate
Lane 2 : HEK-293T (Human embryonic kidney epithelial cell) whole cell lysate
Lane 3 : NCCIT (Human pluripotent embryonic carcinoma epithelial cell) whole cell lysate
Lane 4 : HT-29 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate
Lysates/proteins at 20 µg per lane.
Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution
Predicted band size: 97 kDa
Observed band size: 120 kDa
Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 26 seconds.
Right side - Polyclonal antibody to [CD133] - ab19898
Same testing conditions as **ab278053**.
Why choose a recombinant antibody?
Research with confidence - consistent and reproducible results with every batch
Long-term and scalable supply - powered by recombinant technology for fast production
Success from the first experiment - confirmed specificity through extensive validation
Ethical standards compliant - production is animal-free



Western blot - Anti-CD133 antibody (ab19898)

All lanes : Anti-CD133 antibody - Stem Cell Marker (ab19898) at 1 µg/ml

Lane 1 : MEL-1 (Human embryonic stem cell, male cell line) Whole Cell Lysate (**ab27198**)
Lane 2 : HT-29 whole cell lysate (**ab3952**)
Lane 3 : Caco-2 whole cell lysate (**ab3950**)

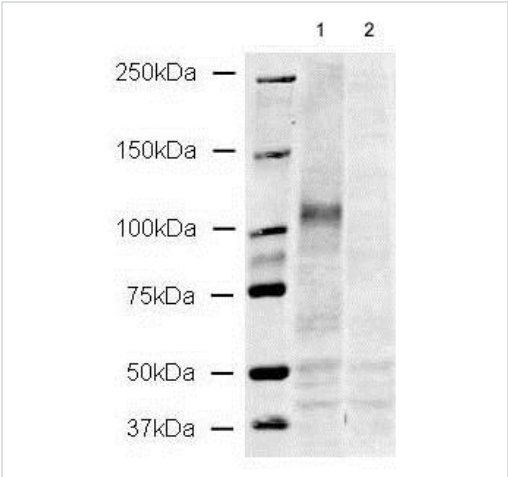
Lysates/proteins at 10 µg per lane.

Secondary
All lanes : Goat polyclonal to Rabbit IgG - H&L - Pre-Adsorbed (HRP) at 1/3000 dilution

Performed under reducing conditions.

Predicted band size: 97 kDa
Observed band size: 110 kDa

ab19898 contains a number of potential glycosylation sites (SwissProt) which may explain its migration at a higher molecular weight than predicted.



Western blot - Anti-CD133 antibody (ab19898)

All lanes : Anti-CD133 antibody - Stem Cell Marker (ab19898) at 1 µg/ml

Lane 1 : Human Embryonic Stem Cell Lysate
Lane 2 : Human Embryonic Stem Cell Lysate with CD133 peptide (**ab20651**) at 1 µg/ml

Lysates/proteins at 20 µg per lane.

Predicted band size: 97 kDa

Anti-CD133 antibody ab19898 detects a band corresponding to the expected size of CD133 in Human Embryonic Stem Cell Lysate using Western Blotting. It is likely that the band runs higher than the

predicted MW of CD133 due to glycosylation of CD133. In mouse neural stem cell and mouse embryonic stem cell lysate this ~110 kDa band was not detected but a reproducible band of ~30 kDa was seen. This could represent a cleavage product but it may also be that the ~30 kDa band represents non-specific binding by ab19898. However, ab19898 has been shown to recognise mouse neural stem cells using ICC. Blocking using the immunising peptide removed both of these bands.

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