abcam

ab112995

Anti-Calnexin antibody [6F12BE10]

Anti-Calnexin antibody [6F12BE10] (ab112995) is a mouse monoclonal antibody detecting Calnexin in **Western Blot, Flow Cytometry, IP, IHC-P, ICC/IF**. Suitable for **Human**.

- KO validated for confirmed specificity
- Over 10 publications

KO Validated

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.5 Preservative: 0.02% Sodium azide Constituents: 99.98% HEPES buffered saline
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	6F12BE10
Purification technique	Proprietary technique
Specificity	Shotgun immunization of human HeLa cell lysates into mice. Targets were determined by mass spectrometry and validated by WB, ICC, ELISA pair and other techniques.
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab112995 was produced in vitro using hybridomas grown in serum-free medium, and then purified by biochemical fractionation. Monoclonal purity was near homogeneity as judged by SDS-PAGE (>95%).

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Not recommended

Species	Mouse
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human

Dilution info	1 µg/mL
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	0.5 µg/mL
Notes	-

Not recommended

Species	Mouse
Dilution info	-

Notes	-

Target data

See full target information CANX

Function	Calcium-binding protein that interacts with newly synthesized monoglucosylated glycoproteins in the endoplasmic reticulum. It may act in assisting protein assembly and/or in the retention within the ER of unassembled protein subunits. It seems to play a major role in the quality control apparatus of the ER by the retention of incorrectly folded proteins. Associated with partial T-cell antigen receptor complexes that escape the ER of immature thymocytes, it may function as a signaling complex regulating thymocyte maturation. Additionally it may play a role in receptor-mediated endocytosis at the synapse.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Notes

What is this antibody validated in?
Anti-Calnexin antibody [6F12BE10] (ab112995) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

What is the molecular weight of Calnexin?
Anti-Calnexin [6F12BE10] (ab112995) specifically detects a band for Calnexin (UniProt: P27824) at a molecular weight of 68kDa.

Trusted by the scientific community
Anti-Calnexin [6F12BE10] (ab112995) was first used in a scientific publication in 2011 and has been cited over 10 times in peer-reviewed journals.

Specificity confirmed
The specificity of Anti-Calnexin antibody [6F12BE10] (ab112995) has been confirmed by Western blot testing in CANX Knockout HAP1 cells.

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

Supplementary info

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

Activity summary	Calnexin also known as Canx is a type I integral membrane protein of the endoplasmic reticulum (ER) involved in the process of protein folding. This chaperone protein has an approximate molecular weight of 90 kDa and is known for its role in the quality control of glycoproteins. Calnexin is expressed in the ER of cells where it interacts with nascent polypeptides to ensure proper folding and assembly contributing to cellular homeostasis. It exhibits its function through its lectin-like domain that binds to sugar moieties on glycoproteins.
Biological function summary	Calnexin facilitates the proper folding of newly synthesized proteins by forming a complex with another chaperone protein called ERp57. This interaction helps in creating the correct disulfide bonds in glycoproteins which is essential for their stability and functionality. The complex often referred to as the calnexin cycle is critical in preventing the aggregation and misfolding of proteins within the ER. This process ensures that only correctly folded proteins proceed to the Golgi apparatus for further processing and transport.
Pathways	Calnexin plays an important role in the ER-associated degradation (ERAD) pathway and the unfolded protein response (UPR). In these pathways calnexin ensures that misfolded proteins are retained in the ER or targeted for degradation preventing cellular stress. Calnexin is associated with proteins such as calreticulin another chaperone protein with a similar function in the ER. Together they maintain proteostasis within cells and protect against the accumulation of improperly folded proteins.
Associated diseases and disorders	Calnexin is linked to several conditions including cystic fibrosis and certain neurodegenerative diseases. In cystic fibrosis the misfolding and subsequent degradation of the CFTR protein are associated with calnexin's role in the ERAD pathway. Similarly in neurodegenerative diseases such as Alzheimer's disrupted protein folding and aggregation are linked to ER stress where calnexin and other chaperone proteins like BiP play a pivotal role in managing protein misfolding. Understanding calnexin's role in these disorders can contribute to developing strategies to mitigate faulty protein folding and its pathological consequences.

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.

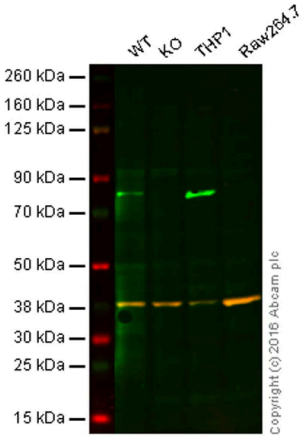
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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:
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6 product images



Western blot - Anti-Calnexin antibody [6F12BE10] (ab112995)

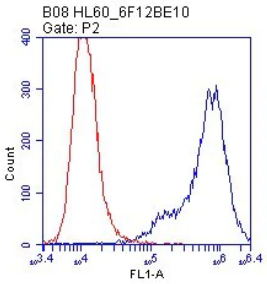
Calnexin Western blot staining using mouse Anti-Calnexin antibody

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: Calnexin knockout HAP1 cell lysate (20 µg)
Lane 3: THP1 cell lysate (20 µg)
Lane 4: Raw264.7 cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab112995 observed at 80 kDa. Red - loading control, ab181602, observed at 37 kDa.

ab112995 was shown to specifically react with Calnexin. Wild-type and Calnexin knockout samples were subjected to SDS-PAGE. ab112995 at a concentration of 1 µg/mL and ab181602 (loading control to GAPDH) diluted to 1/1000 were incubated overnight at 4°C. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed (ab216772) and Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed (ab216777) secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-Calnexin antibody [6F12BE10] (ab112995)

Predicted band size: 68 kDa

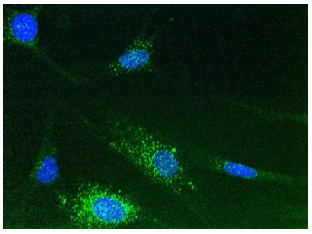
Observed band size: 80 kDa



Flow Cytometry - Anti-Calnexin antibody [6F12BE10] (ab112995)

Calnexin Flow Cytometry staining using mouse Anti-Calnexin antibody

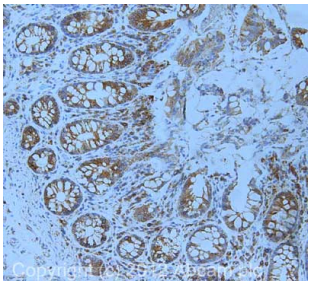
ab112995 at 1µg/ml staining Calnexin - ER membrane marker in HL60 cells fixed with MeOH by Flow Cytometry (blue). Isotype control antibody (red).



Immunocytochemistry/ Immunofluorescence - Anti-Calnexin antibody [6F12BE10] (ab112995)

Calnexin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Calnexin antibody

ab112995 at 5µg/ml staining Calnexin - ER membrane marker in Human fibroblasts cells by Immunocytochemistry (4% paraformaldehyde fixed and 0.1% Triton X-100 permeabilized) followed by Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h (green).

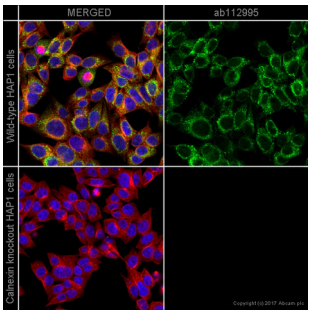


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Calnexin antibody [6F12BE10] (ab112995)

Calnexin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Calnexin antibody

IHC image of ab112995 staining in human colon formalin fixed paraffin embedded tissue section, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab112995, 1µg/ml, 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.

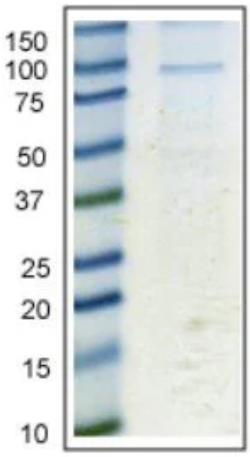
For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Immunocytochemistry/ Immunofluorescence - Anti-Calnexin antibody [6F12BE10] (ab112995)

Calnexin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Calnexin antibody

ab112995 staining Calnexin (shown in green) in wild-type HAP1 cells (top panel) and CANX knockout HAP1 cells (bottom panel). The cells were fixed with 4% formaldehyde (10 min), permeabilized with 0.1% Triton X-100 for 5 min and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1 hour. The cells were then incubated with ab112995 at 0.5 µg/ml and ab202272 at 1/250 dilution (alpha tubulin shown in red) overnight at +4°C, followed by a further incubation at room temperature for 1 hour with a goat secondary antibody to Mouse IgG (Alexa Fluor® 488) (ab150117) at 2 µg/ml (shown in green). Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunoprecipitation - Anti-Calnexin antibody [6F12BE10] (ab112995)

Immunoprecipitation with ab112995.
Immunoprecipitation of Calnexin - ER membrane marker from HeLa cell lysate. The protein band runs around 90 kDa (predicted 68kDa) in tris-glycine SDS-PAGE. The identity of this protein was confirmed by mass spectrometry. This gel was stained with colloidal Coomassie blue G.
All lanes:
Immunoprecipitation - Anti-Calnexin antibody [6F12BE10] (ab112995)

Predicted band size: 68 kDa

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