abcam

ab54583

Anti-Protein CASP antibody [2A10] - BSA and Azide free

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human CUX1 aa 500-650. The exact immunogen used to generate this antibody is proprietary information. Database link Q13948
Carrier free	Yes
Clone number	2A10
Purity	Tissue culture supernatant
Light chain type	kappa

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-

Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Transfected cell lysate - Human, Recombinant fragment
Dilution info	-
Notes	-

WB

Tested

Species	Transfected cell lysate - Human, Human
Dilution info	-
Notes	-

Not recommended

Species	Recombinant fragment
Dilution info	-
Notes	-

sELISA

Tested

Species	Recombinant fragment
Dilution info	-
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell lysate - Human, Recombinant fragment
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell lysate - Human, Recombinant fragment
Dilution info	-
Notes	-

Target data

See full target information CUX1

Function	May be involved in intra-Golgi retrograde transport.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

This product was changed from ascites to tissue culture supernatant on 13th Feb 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Supplementary info

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

Activity summary	Protein CASP also known as Caspase or CASP protein is an important player in the process of apoptosis. Caspases are cysteine-aspartic proteases that exist as inactive proenzymes made of a prodomain large and small subunits. Upon activation caspases cleave substrates after aspartic acid residues. The Caspase family proteins have similar structures with molecular masses around 20 kDa to 40 kDa. CASP proteins are widely expressed across different tissues in the body. Activation can happen through intrinsic and extrinsic pathways enabling them to mediate the orderly dismantling of cellular components.
Biological function summary	Protein CASP acts as an executioner enzyme in cell death. It forms part of intricate protein complexes notably the apoptosome which includes APAF1 and cytochrome c. Once activated CASP proteins initiate a cascade of proteolytic events that lead to the dismantling of the cell. This process is tightly regulated and is essential for maintaining homeostasis and tissue development. Other caspases work upstream to activate downstream executioner caspases further highlighting the protein's role in these biological functions.
Pathways	Protein CASP plays a significant role in apoptotic signaling pathways. It is pivotal in both the extrinsic and intrinsic apoptotic pathways. In the extrinsic pathway proteins such as FADD and DISC interact with CASP-8 to trigger apoptosis. The

	intrinsic pathway includes the release of cytochrome c which partners with APAF1 leading to the activation of CASP-9 and subsequently other caspases. This cascade illustrates the interconnected nature of apoptotic signaling with other molecular pathways ensuring the precise regulation of cell death.
Associated diseases and disorders	Protein CASP is associated with cancer and neurodegenerative diseases. Dysregulation of CASP activity can result in either excessive cell death or survival contributing to disease pathogenesis. In cancers often CASP activity is impaired allowing cancer cells to evade apoptosis and proliferate unchecked. In neurodegenerative disorders such as Alzheimer's abnormal CASP activation contributes to neuronal loss. The interaction between CASP proteins and BCL-2 family members highlights their role in these diseases emphasizing the therapeutic targeting potential in modulating CASP activity.

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

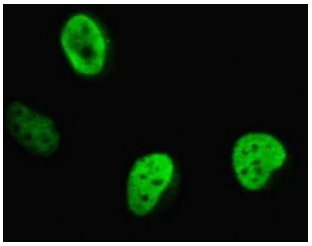
We do not recommend this combination. It is not covered by our product promise.

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.

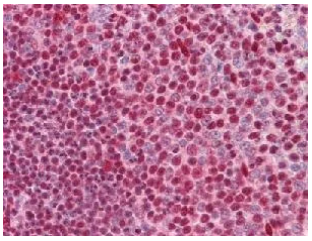
9 product images



Immunocytochemistry/ Immunofluorescence - Anti-Protein CASP antibody [2A10] - BSA and Azide free (ab54583)

Protein CASP Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Protein CASP antibody

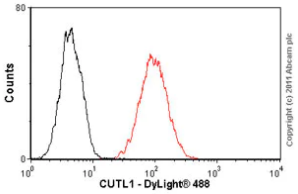
HeLa (human epithelial cell line from cervix adenocarcinoma) cells stained for Protein CASP (green) using ab54583 at 10 µg/ml in ICC/IF.
This image was generated using the ascites version of the product.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Protein CASP antibody [2A10] - BSA and Azide free (ab54583)

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

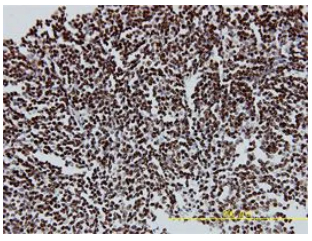
Formalin-fixed, paraffin-embedded human spleen tissue stained for Protein CASP with ab54583 at 5 µg/ml in immunohistochemical analysis.
This image was generated using the ascites version of the product.



Flow Cytometry - Anti-Protein CASP antibody [2A10] - BSA and Azide free (ab54583)

Protein CASP Flow Cytometry staining using mouse Anti-Protein CASP antibody

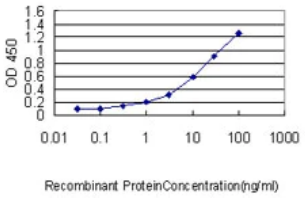
Overlay histogram showing MCF7 (human breast adenocarcinoma cell line) cells stained with ab54583 (red line). The cells were fixed with 80% methanol (5 minutes) and then permeabilized with 0.1% PBS-Tween for 20 minutes. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3 M glycine to block non-specific protein-protein interactions followed by the antibody (ab54583, 1 µg/1 x 10^6 cells) for 30 minutes at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 minutes at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2 µg/1 x 10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in MCF7 cells fixed with 4% paraformaldehyde (10 minutes)/permeabilized in 0.1% PBS-Tween used under the same conditions.
This image was generated using the ascites version of the product.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Protein CASP antibody [2A10] - BSA and Azide free (ab54583)

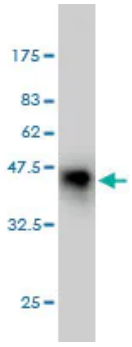
Protein CASP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Protein CASP antibody

Formalin-fixed, paraffin-embedded human malignant lymphoma, diffuse large B tissue stained for Protein CASP with ab54583 at 5 µg/ml in immunohistochemical analysis.
This image was generated using the ascites version of the product.



Sandwich ELISA - Anti-Protein CASP antibody [2A10] - BSA and Azide free (ab54583)

Detection limit of ab54583 is approximately 0.03 ng/ml as a capture antibody.
This image was generated using the ascites version of the product.



Western blot - Anti-Protein CASP antibody [2A10] - BSA and Azide free (ab54583)

This antibody has only been tested in WB against the recombinant fragment used as immunogen. We have no data on the detection of endogenous protein.
Expected MW 38 kDa.

This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-Protein CASP antibody [2A10] - BSA and Azide free (ab54583) at 5 µg/mL

All lanes:
Tagged recombinant Protein CASP protein

Predicted band size: 114 kDa, 167 kDa, 185 kDa, 217 kDa, 22 kDa, 41 kDa, 629 kDa, 70 kDa, 71 kDa, 77 kDa, 83 kDa

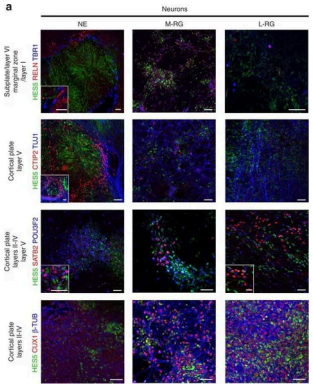


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Protein CASP Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Protein CASP antibody

Immunocytochemistry-immunofluorescence using Anti-Protein CASP antibody [2A10] - BSA and Azide free, ab54583. Publication image from Meissner, A. et al., 2015, Nat Commun, 25799239. Legend direct from paper.

Consecutive isolation of Notch active progenitors recapitulates cortical lamination and glial fates. (a) Combined HES5::eGFP reporter expression and immunostainings of cortical layer specific neuronal markers: Early born neurons expressing TBR1, RELN and CTIP2 (top two panels), and late derived neurons expressing SATB2, POU3F2 and CUX1 (bottom two panels), are shown for NE, M-RG and L-RG progenitors that were subjected to neuronal differentiation. Insets for RELN/TBR1 and SATB2/POU3F2 show magnified areas within the image. Inset for CTIP/TUJ1 shows same magnification but a different view of neuronal axons. Images of HES5+ derived neurons are shown. Scale bars: 50 µm for images, 25 µm for Insets. Images of HES5− derived neurons and percentages of all cortical subtypes derived from both HES5+ and HES5− cells are presented in Supplementary Fig. 5. (b) Distribution of relative transcript abundance based on qPCR for selected stage-specific marker gene groups for either deep or upper layer neuronal progeny. Contributions of HES5+ and HES5− populations per each respective stage are shown. Marker gene groups for each progenitor stage were created by collapsing the normalized values of TBR1/RELN, CTIP2/FEZF2 and CUX1/CUX2/SATB2 (see Methods for details). Individual qPCR analyses for all genes tested at all stages are shown in Supplementary Fig. 4. (c) Same as in b. Here, cumulative neuronal marker levels based on relative transcript levels are shown (top). Note the decrease in total neuronal progeny shown in the lower panel, as the glial marker GFAP is upregulated in panel e. (d) Distribution of relative transcript abundance based on qPCR for selected stage-specific marker genes for indicated progenitor or neuronal cell markers. Contributions of HES5+ and HES5− populations per each respective stage from either untreated or DAPT treated cells are shown. Expression levels relative to HPRT of all four conditions (colour coded) were summed per each

gene and plotted as a single bar. (e) Top: Combined HES5::eGFP reporter expression and immunostaining of the glial marker GFAP following differentiation of the L-RG stage. Scale bar: 50 µm. Bottom: GFAP transcript level for distinct progenitor stages as assessed by qPCR. Values were obtained from three technical replicates. Statistical analysis: mean±s.e.m.

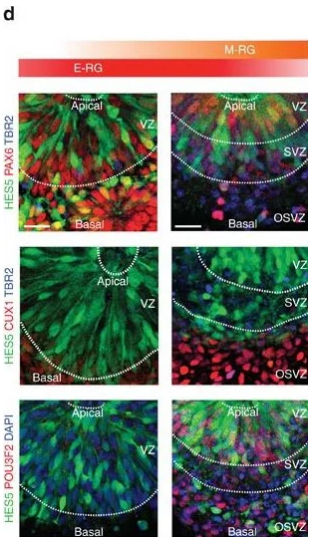


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Transition through progenitor cell stages demarcates developing rosettes as VZ and SVZ equivalents.(a) Differential expression levels for selected genes that are most differentially expressed between HES5+ and HES5− cells in a stage-specific manner. Selected gene members are indicated on the left, developmental stages are indicated on the bottom, and gene categories classified by stage are indicated on the right. Values plotted on the heatmap represent ratios of expression levels relative to ES cells. (b) Relative expression levels (z-scores) based on microarray expression data for the entire differentiation time course for selected germinal zone marker genes. Relative expression levels are shown for HES5+ (top) and HES5− (bottom) samples separately. Genes are ordered from VZ to SVZ and from neurogenic to gliogenic markers. Individual qPCR analyses for all genes tested at all stages are shown in Supplementary Fig. 6c. Note that the apparently high GFAP expression in HES5+ cells at the L-RG stage has in fact low absolute expression values, and only appear high relatively to expression in other stages (all stages per each gene are normalized to 1; that is, highest red intensity). To compare GFAP transcript levels during proliferation and serum induced astrocytic differentiation, see Figs 5d and 3e, respectively. (c) Combined HES5::eGFP reporter expression and immunostainings of neural stem/progenitor markers, RG markers, and proliferation markers throughout the progression period. From top: PAX6 marking the VZ and TBR2 marking the SVZ are shown. Middle: CUX1 marking SVZ is shown. Bottom: the (mainly) SVZ marker POU3F2 is shown. Scale bar: 50 µm (valid for all images in c). (d) High-power magnification of E-RG and M-RG images shown in c. Dashed lines demarcate proposed VZ, SVZ and OSVZ regions, containing apical RG, INPs and basal RG, respectively. Scale bar: 25 µm (valid for all images in d).

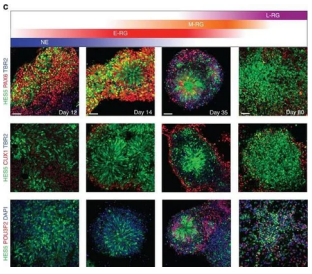


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