abcam

Product datasheet

Anti-CDC42 antibody [M152] ab41429

KO VALIDATED

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Overview

Product name	Anti-CDC42 antibody [M152]
Description	Mouse monoclonal [M152] to CDC42
Host species	Mouse
Specificity	The antibody detects a 21 kDa protein in human Jurkat cells and mouse brain. It does not recognize a human RhoA GST fusion protein.
Tested applications	**Suitable for:** ICC/IF, WB
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Recombinant CDC42 (Rat)
Positive control	WB: MCF7, HepG2, HAP1 and Jurkat cell lysate; Mouse brain lysate. ICC/IF: SH-SY5Y cells.
General notes	Do not aliquot. 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. Store at 4°C (up to 6 months). Store at -20°C.
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS, 50% Glycerol, 0.1% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	M152
Isotype	IgG1

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab41429 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/IF		1/50.
WB	★★★★☆ **(3)**	1/125 - 1/500. Detects a band of approximately 21 kDa (predicted molecular weight: 21 kDa).

Target

Function Plasma membrane-associated small GTPase which cycles between an active GTP-bound and an inactive GDP-bound state. In active state binds to a variety of effector proteins to regulate cellular responses. Involved in epithelial cell polarization processes. Causes the formation of thin, actin-rich surface projections called filopodia.

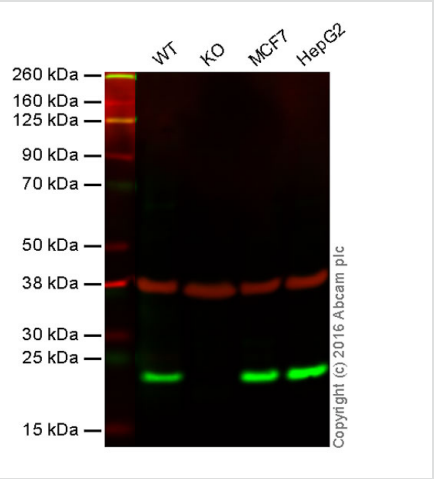
Sequence similarities Belongs to the small GTPase superfamily. Rho family. CDC42 subfamily.

Post-translational modifications AMPylation at Tyr-32 and Thr-35 are mediated by bacterial enzymes in case of infection by H.somnus and V.parahaemolyticus, respectively. AMPylation occurs in the effector region and leads to inactivation of the GTPase activity by preventing the interaction with downstream effectors, thereby inhibiting actin assembly in infected cells. It is unclear whether some human enzyme mediates AMPylation; FICD has such ability in vitro but additional experiments remain to be done to confirm results in vivo.

Cellular localization Cell membrane.

Form There are 2 isoforms produced by alternative splicing. Isoform 1 also known as: Brain; Isoform 2 also known as: Placental.

Images

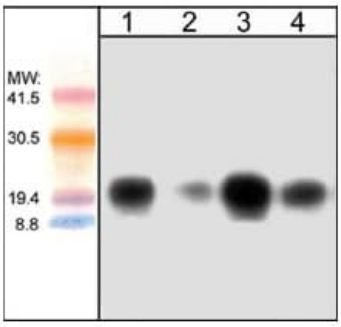


Western blot - Anti-CDC42 antibody [M152] (ab41429)

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: CDC42 knockout HAP1 cell lysate (20 µg)
Lane 3: MCF7 cell lysate (20 µg)
Lane 4: HepG2 cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab41429 observed at 20 kDa. Red - loading control, **ab181602**, observed at 37 kDa.

ab41429 was shown to specifically react with CDC42 in wild-type HAP1 cells. No band was observed when CDC42 knockout samples were examined. Wild-type and CDC42 knockout samples were subjected to SDS-PAGE. ab41429 and **ab181602** (loading control to GAPDH) were diluted at 1/125 and 1/10,000 respectively and 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 1/10,000 dilution for 1 hour at room temperature before imaging.



Western blot - Anti-CDC42 antibody [M152] (ab41429)

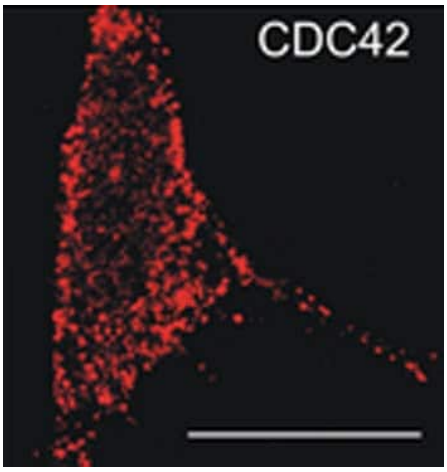
Lanes 1 & 3 : Anti-CDC42 antibody [M152] (ab41429) at 1/125 dilution
Lanes 2 & 4 : Anti-CDC42 antibody [M152] (ab41429) at 1/500 dilution

Lanes 1-2 : human jurkat cells
Lanes 3-4 : mouse brain

Lysates/proteins at 20 µg per lane.

Predicted band size: 21 kDa
Observed band size: 21 kDa

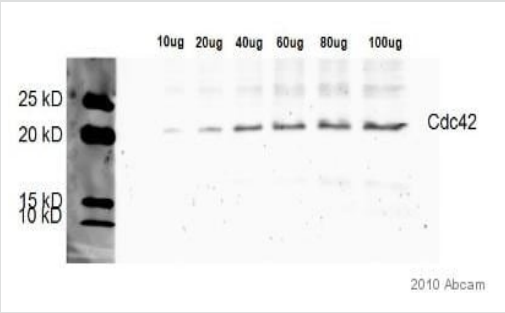
Membrane was incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween 20 for 1 hour at room temperature.



Immunocytochemistry/ Immunofluorescence - Anti-CDC42 antibody [M152] (ab41429)

Image from Haebig K et al, PLoS One. 2010 Oct 29;5(10):e13762, Fig 2. doi:10.1371/journal.pone.0013762

ab41429 staining CDC42 in SH-SY5Y cells by Immunocytochemistry/ Immunofluorescence. SH-SY5Y cells were differentiated 6 days with 10 µM retinoic acid and fixed with 4% paraformaldehyde in PBS. After 5 minutes incubation with ice-cold methanol the cells were washed twice with PBS and blocked with 10% normal donkey serum for 30 minutes. Incubation with primary antibody was performed over night at 4°C. After three-times washing with PBS, 1 hour incubation with the labeled Cy3 secondary antibody at 37°C the cells were mounted with DABCO/Mowiol.



Western blot - Anti-CDC42 antibody [M152] (ab41429)

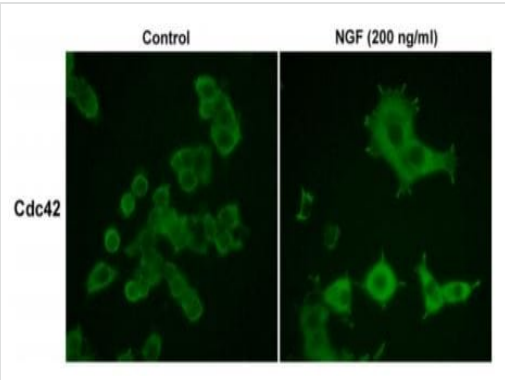
All lanes : Anti-CDC42 antibody [M152] (ab41429) at 1/500 dilution

Lane 1 : Rabbit heart tissue lysate at 10 µg
Lane 2 : Rabbit heart tissue lysate at 20 µg
Lane 3 : Rabbit heart tissue lysate at 40 µg
Lane 4 : Rabbit heart tissue lysate at 60 µg
Lane 5 : Rabbit heart tissue lysate at 80 µg
Lane 6 : Rabbit heart tissue lysate at 100 µg

Secondary
All lanes : Donkey anti-mouse IgG (HRP) at 1/50000 dilution

Developed using the ECL technique.

Predicted band size: 21 kDa



Immunocytochemistry/ Immunofluorescence - Anti-CDC42 antibody [M152] (ab41429)

PC-12 (Rat adrenal gland pheochromocytoma cell line) cells grown for 4 days on poly-D-lysine-coated plates in the rpesence (200 ng/ml) or absence (control) of Nerve Growth Factor (NGF) labeling CDC42 with ab41429 in ICC/IF. Primary antibody was used at 1/50 dilution followed by a donkey anti-mouse secondaty antibody (Cy2).

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