abcam

ab126627

Anti-RALA antibody [EPR6468]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR6468
Purification technique	Affinity purification Protein A
Concentration	0.892 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100 - 1/250
Notes	-

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Target data

See full target information RALA

Function	Multifunctional GTPase involved in a variety of cellular processes including gene expression, cell migration, cell proliferation, oncogenic transformation and membrane trafficking. Accomplishes its multiple functions by interacting with

distinct downstream effectors (PubMed:18756269, PubMed:19306925, PubMed:20005108, PubMed:21822277, PubMed:30500825). Acts as a GTP sensor for GTP-dependent exocytosis of dense core vesicles. The RALA-exocyst complex regulates integrin-dependent membrane raft exocytosis and growth signaling (PubMed:20005108). Key regulator of LPAR1 signaling and competes with GRK2 for binding to LPAR1 thus affecting the signaling properties of the receptor. Required for anchorage-independent proliferation of transformed cells (PubMed:19306925). During mitosis, supports the stabilization and elongation of the intracellular bridge between dividing cells. Cooperates with EXOC2 to recruit other components of the exocyst to the early midbody (PubMed:18756269). During mitosis, also controls mitochondrial fission by recruiting to the mitochondrion RALBP1, which mediates the phosphorylation and activation of DNM1L by the mitotic kinase cyclin B-CDK1 (PubMed:21822277).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

Species reactivity
Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	RALA also known as Ras-related protein Ral-A or RalA is a small GTPase involved in a variety of cellular processes. It has a molecular mass of approximately 23 kDa. RALA switches between inactive GDP-bound and active GTP-bound states facilitating the transduction of signals within the cell. This protein is found in a range of tissues with expression in the brain lung and kidney being notable. The ability of RALA to shuttle between membrane compartments highlights its mechanical versatility in cellular signaling.
Biological function summary	The interaction of RALA with effector proteins drives key processes like vesicle trafficking cytoskeletal dynamics and gene expression. RALA forms part of a signaling complex in its active state that mediates these functions. This protein is vital in the neurotransmitter release ensuring efficient communication between neurons. Additionally RALA impacts cell movement by influencing actin filament organization showing its role in cell motility.
Pathways	The engagement of RALA in Ral signaling and the phosphatidylinositol 3-kinase (PI3K) pathway showcases its importance. In Ral signaling RALA interacts closely with proteins like RalBP1 influencing endocytosis and exocytosis activities. In the PI3K pathway RALA helps regulate cell proliferation and survival showing interactions with proteins such as AKT1. These pathways highlight the integration of RALA into broad signal transduction networks important for cellular homeostasis.
Associated diseases and disorders	The altered regulation of RALA links it to cancer and neuronal disorders. In cancer the dysregulation of RALA can drive tumorigenesis often acting alongside proteins like KRAS in promoting oncogenic signaling. In neuronal disorders improper functioning of RALA has been associated with synaptic dysfunctions potentially affecting proteins like Synapsin I which are important to synaptic vesicle trafficking. Understanding RALA's role in these contexts helps in developing targeted therapeutic strategies.

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

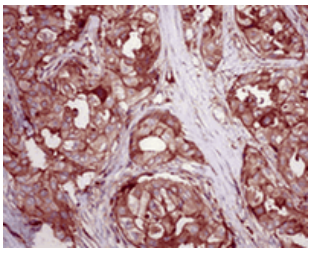
We do not recommend this combination. It is not covered by our product promise.

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.

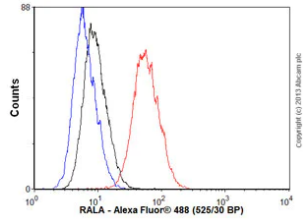
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RALA antibody [EPR6468] (ab126627)

RALA Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RALA antibody

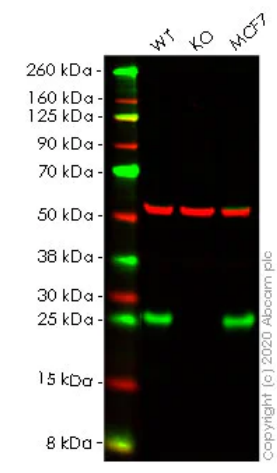
ab126627, at 1/100, staining RALA in formalin fixed, paraffin embedded Human breast carcinoma tissue by Immunohistochemistry.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-RALA antibody [EPR6468] (ab126627)

RALA Flow Cytometry (Intracellular) staining using rabbit Anti-RALA antibody

Overlay histogram showing MCF7 cells stained with ab126627 (red line). The cells were fixed with 4% paraformaldehyde (10 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 (ab126627, 1/10000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H&L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter. This antibody gave a positive signal in MCF7 cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Western blot - Anti-RALA antibody [EPR6468] (ab126627)

RALA Western blot staining using rabbit Anti-RALA antibody

Lanes 1-3: Merged signal (red and green). Green - ab126627 observed at 25 kDa. Red - loading control ab7291 observed at 50 kDa.
ab126627 Anti-RALA antibody [EPR6468] was shown to specifically react with RALA in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab265092 (knockout cell lysate ab258165) was used. Wild-type and RALA knockout samples were subjected to SDS-PAGE. ab126627 and Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-RALA antibody [EPR6468] (ab126627) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

Lane 2:
RALA knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human RALA knockout HeLa cell line (ab265092)

Lane 3:
MCF7 cell lysate at 20 µg

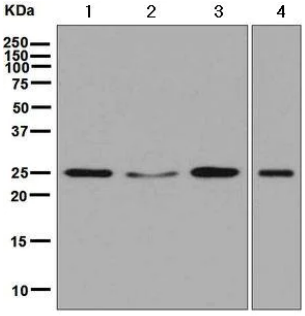
Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 24 kDa

Observed band size: 25 kDa



Western blot - Anti-RALA antibody [EPR6468] (ab126627)

All lanes:
Western blot - Anti-RALA antibody [EPR6468] (ab126627) at 1/1000 dilution

Lane 1:
MCF7 cell lysate at 10 µg

Lane 2:
MOLT4 cell lysate at 10 µg

Lane 3:
BxPC3 cell lysate at 10 µg

Lane 4:
HepG2 cell lysate at 10 µg

Secondary

All lanes:
Goat anti-rabbit HRP conjugated antibody at 1/2000 dilution

Predicted band size: 24 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.