abcam

ab109379

Anti-RCC1 antibody [EPR5857]

Recombinant | RabMAb

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	EPR5857
Purification technique	Affinity purification Protein A
Concentration	0.11 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	Heat up to 98 degrees C, below boiling, and then let cool for 10-20 min.

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

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

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/2000
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information RCC1

Function	Guanine-nucleotide releasing factor that promotes the exchange of Ran-bound GDP by GTP, and thereby plays an important role in RAN-mediated functions in nuclear import and mitosis (PubMed:11336674, PubMed:17435751, PubMed:1944575, PubMed:20668449, PubMed:22215983, PubMed:29042532). Contributes to the generation of high levels of chromosome-associated, GTP-bound RAN, which is important for mitotic spindle assembly and normal progress through mitosis (PubMed:12194828, PubMed:17435751, PubMed:22215983). Via its role in maintaining high levels of GTP-bound RAN in the nucleus, contributes to the release of cargo proteins from importins after nuclear import (PubMed:22215983). Involved in the regulation of onset of chromosome condensation in the S phase (PubMed:3678831). Binds both to the nucleosomes and double-stranded DNA (PubMed:17435751, PubMed:18762580).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Stable for 12 months at -20°C

Notes

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	Regulator of Chromosome Condensation 1 (RCC1) also known as Ran guanine nucleotide exchange factor is a highly conserved protein. With a molecular mass of approximately 45 kDa RCC1 localizes mainly in the nucleus. This protein functions as a guanine nucleotide exchange factor (GEF) for the small GTPase Ran facilitating the conversion of RanGDP to RanGTP. RCC1 is abundant in cells showing expression in various tissue types reflecting its mechanical role in nuclear transport.
Biological function summary	The protein RCC1 acts as an important player in the regulation of nucleocytoplasmic transport mitosis and other cellular processes. It forms a complex with chromatin and its substrate Ran particularly binding to DNA in a sequence-specific manner. RCC1's activity modifies the Ran gradient across the nuclear envelope which is essential for directing the import and export of proteins and RNA molecules. This gradient is also vital during mitosis for proper chromosomal segregation.
Pathways	RCC1 integrates into the Ran pathway a mechanism significant for cell cycle progression and nucleocytoplasmic transport. Within this pathway RCC1 influences the Ran cycle in partnership with proteins such as RanBP1 and RanGAP. It also plays a part in mitotic spindle assembly through its interactions with spindle assembly factors interlinking with microtubule dynamics. RCC1's function in these pathways highlights its critical involvement in maintaining cellular division and transport activities.
Associated diseases and disorders	Defects in RCC1 expression or function have connections to tumorigenesis and certain neurological disorders. Aberrations in the Ran signaling pathway mediated by RCC1 can disturb genomic stability linking it to cancer progression. Additionally improper regulation of RCC1 might implicate its association with neurodegenerative conditions where proteins like RanGAP1 and importin beta are also involved. Understanding these relationships may lead to potential therapeutic targets for treating such diseases.

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

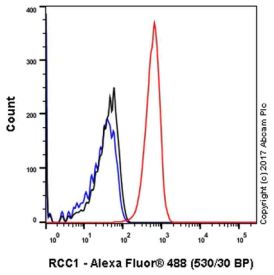
We do not recommend this combination. It is not covered by our product promise.

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.

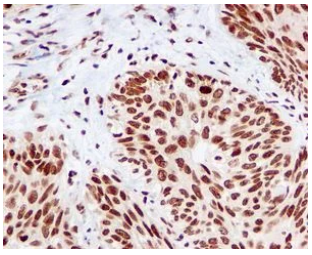
5 product images



Flow Cytometry (Intracellular) - Anti-RCC1 antibody [EPR5857] (ab109379)

RCC1 Flow Cytometry (Intracellular) staining using rabbit Anti-RCC1 antibody

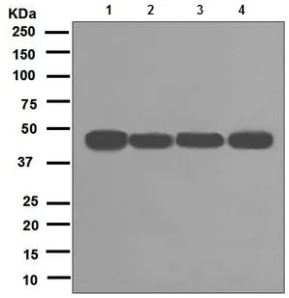
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling RCC1 (red) with ab109379 at a 1/2000 dilution. Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. A goat anti-rabbit IgG (Alexa Fluorr® 488) (ab150077) was used as the secondary antibody at a 1/2000 dilution. Black - Rabbit monoclonal IgG (ab172730). Blue (unlabeled control) - Cells without incubation with primary and secondary antibodies.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RCC1 antibody [EPR5857] (ab109379)

RCC1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RCC1 antibody

ab109379, at a 1/100 dilution, staining RCC1 in paraffin-embedded Human bladder carcinoma tissue
Perform heat mediated antigen retrieval before commencing with IHC staining protocol.



Western blot - Anti-RCC1 antibody [EPR5857] (ab109379)

All lanes:
Western blot - Anti-RCC1 antibody [EPR5857] (ab109379) at 1/1000 dilution

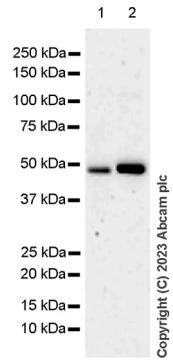
Lane 1:
A431 cell lysate at 10 µg

Lane 2:
HeLa cell lysate at 10 µg

Lane 3:
Jurkat cell lysate at 10 µg

Lane 4:
293T cell lysate at 10 µg

Predicted band size: 45 kDa



Western blot - Anti-RCC1 antibody [EPR5857] (ab109379)

RCC1 Western blot staining using rabbit Anti-RCC1 antibody

Diluting and blocking buffer: 5% NFDM/TBST 5% NFDM/TBST

All lanes:
Western blot - Anti-RCC1 antibody [EPR5857] (ab109379) at 1/1000 dilution

Lane 1:
Mouse kidney tissue lysate at 20 µg

Lane 2:
Mouse spleen tissue lysate at 20 µg

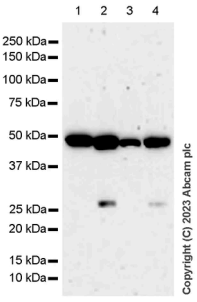
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 45 kDa

Observed band size: 44 kDa

Exposure time: 180s



Western blot - Anti-RCC1 antibody [EPR5857] (ab109379)

RCC1 Western blot staining using rabbit Anti-RCC1 antibody

Diluting and blocking buffer: 5% NFDM/TBST 5% NFDM/TBST

All lanes:
Western blot - Anti-RCC1 antibody [EPR5857] (ab109379) at 1/1000 dilution

Lane 1:
C6 (rat glial tumor glial cell) whole cell lysate at 20 µg

Lane 2:
RAW 264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate at 20 µg

Lane 3:
PC-12 (rat adrenal gland pheochromocytoma cell) whole cell lysate at 20 µg

Lane 4:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 45 kDa

Observed band size: 44 kDa

Exposure time: 180s

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