abcam

ab246509

Anti-Geminin antibody [EPR23754-87]

Recombinant | RabMAb | 20ul selling size

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	EPR23754-87
Purification technique	Affinity purification Protein A
Concentration	0.432 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/400
Notes	-

Species	Human
Dilution info	1/400
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/100
Notes	Use at 1/500 for mouse and rat.

Species	Rat
Dilution info	1/100
Notes	Use at 1/500 for mouse and rat.

Species	Human
Dilution info	1/100
Notes	Use at 1/500 for mouse and rat.

Target data

See full target information GMNN

Function	Inhibits DNA replication by preventing the incorporation of MCM complex into pre-replication complex (pre-RC) (PubMed:14993212, PubMed:20129055, PubMed:24064211, PubMed:9635433). It is degraded during the mitotic phase of the cell cycle (PubMed:14993212, PubMed:24064211, PubMed:9635433). Its destruction at the metaphase-anaphase transition permits replication in the succeeding cell cycle (PubMed:14993212, PubMed:24064211, PubMed:9635433). Inhibits histone acetyltransferase activity of KAT7/HBO1 in a CDT1-dependent manner, inhibiting histone H4 acetylation and DNA replication licensing

(PubMed:20129055). Inhibits the transcriptional activity of a subset of Hox proteins, enrolling them in cell proliferative control (PubMed:22615398).

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	Avoid freeze / thaw cycle

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	Geminin also referred to as GMNN is a protein that regulates DNA replication. It has approximately 25 kDa mass. Geminin inhibits DNA replication by preventing the loading of the mini-chromosome maintenance complex onto DNA during the cell cycle. This function ensures that DNA replication takes place only once per cell cycle. Geminin expresses mainly in tissues with high proliferative activity such as the developing nervous system and hematopoietic cells. Its interaction with other proteins plays a significant role in controlling cell cycle progression.

Biological function summary	In a cellular context Geminin forms part of a complex with the nuclear protein Cdt1. This complex is essential in the regulation of the cell cycle's S phase. Geminin's function restricts DNA replication by binding to Cdt1 and stopping its activity which is necessary during the G1/S phase transition. By doing so it preserves the integrity of genetic information and prevents re-replication. Geminin's inhibition remains strict until it is degraded during mitosis allowing Cdt1 to resume its function in the following cell cycle.
Pathways	The regulation of Geminin is important to maintaining proper DNA replication and cell cycle integrity. Geminin plays a role in the cell cycle control pathway particularly during the G1 to S phase transition. Additionally it interfaces with other proteins like Paxillin which is involved in cell adhesion and movement. Although not directly linked in a pathway Paxillin's role in regulating cellular dynamics can influence cell cycle processes in which Geminin is involved. Geminin also serves as a K blocker relevant in maintaining genetic stability.
Associated diseases and disorders	Aberrations in Geminin activity can lead to severe conditions such as cancer. Its overexpression or misregulation has a link to various tumor types due to its effect on uncontrolled cell proliferation. Geminin's interaction with proteins like Paxillin and Cyclin-dependent kinases also relates to cancer progression as these interactions may involve changes in cellular adhesion and cycle checkpoints. Therefore understanding Geminin's role offers valuable insight for potential therapeutic targets in oncology.

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

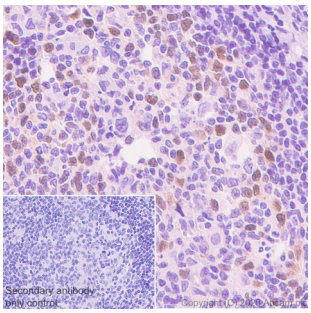
We do not recommend this combination. It is not covered by our product promise.

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.

10 product images

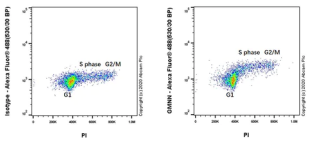


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Geminin antibody [EPR23754-87] (ab246509)

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

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling Geminin with ab246509 at 1/100 dilution followed by ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on human tonsil (PMID: 12107111). The section was incubated with ab246509 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

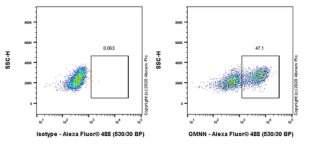
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Flow Cytometry (Intracellular) - Anti-Geminin antibody [EPR23754-87] (ab246509)

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

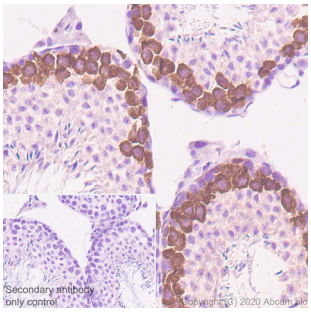
Intracellular flow cytometric analysis of 80% methanol fixed, 0.1% Tween-20 permeabilized HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling Geminin with ab246509 at 1/400 dilution (0.1µg) (Right panel) compared with a Rabbit monoclonal IgG (ab172730) isotype control (Left panel). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.
Cells were pre-treated with 20ug/ml RNaseA for 30 mins to minimize the binding between PI and RNA. Then intracellular stained with ab246509 and PI. Increase expression in S phase and G2/M phase was reported in literature (PMID: 28179914).



Flow Cytometry (Intracellular) - Anti-Geminin antibody [EPR23754-87] (ab246509)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized HEK-293 (Human embryonic kidney epithelial cell) cells labelling Geminin with ab246509 at 1/400 dilution (0.1µg) (Right panel) compared with a Rabbit monoclonal IgG (ab172730) isotype control (Left panel). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.

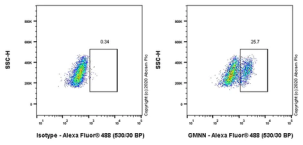


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Geminin antibody [EPR23754-87] (ab246509)

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

Immunohistochemical analysis of paraffin-embedded mouse testis tissue labeling Geminin with ab246509 at 1/500 followed by ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on mouse testis (PMID: 22898305, PMID: 28690291). The section was incubated with ab246509 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

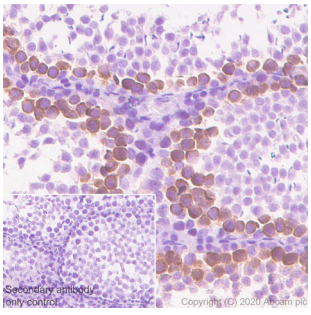
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Flow Cytometry (Intracellular) - Anti-Geminin antibody [EPR23754-87] (ab246509)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde fixed, 90% methanol permeabilized MEF (Mouse embryonic fibroblast (immortalized)) cells labelling Geminin with ab246509 at 1/400 dilution (0.1µg) (Right panel) compared with a Rabbit monoclonal IgG (ab172730) isotype control (Left panel). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.

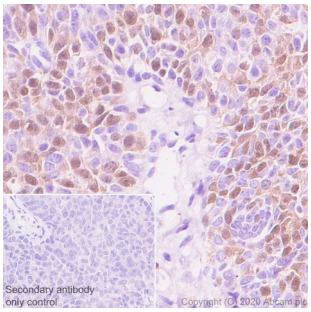


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Geminin antibody [EPR23754-87] (ab246509)

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

Immunohistochemical analysis of paraffin-embedded rat testis tissue labeling Geminin with ab246509 at 1/500 dilution followed by ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on rat testis (PMID: 22898305, PMID: 28690291). The section was incubated with ab246509 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

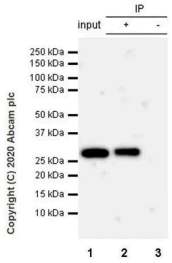


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Geminin antibody [EPR23754-87] (ab246509)

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

Immunohistochemical analysis of paraffin-embedded mouse breast carcinoma tissue labeling Geminin with ab246509 at 1/500 dilution followed by ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on mouse breast carcinoma (PMID: 12107111). The section was incubated with ab246509 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Immunoprecipitation - Anti-Geminin antibody [EPR23754-87] (ab246509)

Geminin was immunoprecipitated from 0.35 mg mouse testis tissue lysate with ab246509 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab246509 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP)(ab131366) was used at 1/5000 dilution.
Lane 1: Mouse testis tissue lysate 10µg

Lane 2: ab246509 IP in mouse testis tissue lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab246509 in mouse testis tissue lysate

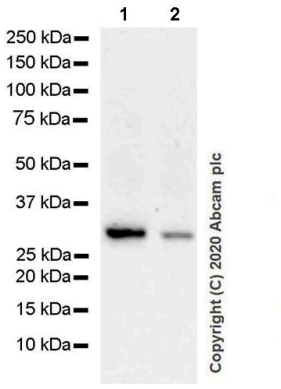
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 minutes.

All lanes:
Immunoprecipitation - Anti-Geminin antibody [EPR23754-87] (ab246509)

Predicted band size: 24 kDa

Observed band size: 26 kDa



Western blot - Anti-Geminin antibody [EPR23754-87] (ab246509)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 18798731).

Exposure time: 3 minutes.

All lanes:
Western blot - Anti-Geminin antibody [EPR23754-87] (ab246509) at 1/1000 dilution

Lane 1:
HEK-293 (human embryonic kidney epithelial cell), whole cell lysate at 20 µg

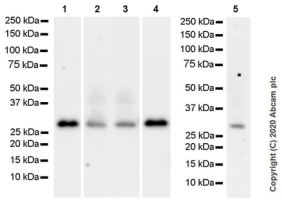
Lane 2:
HeLa (human cervix adenocarcinoma epithelial cell), whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 24 kDa

Observed band size: 26 kDa



Western blot - Anti-Geminin antibody [EPR23754-87] (ab246509)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 18798731).

Exposure times. Lane 1, 4: 15 seconds; Lane 2, 3: 37 seconds; Lane 5: 3 minutes.

All lanes:
Western blot - Anti-Geminin antibody [EPR23754-87] (ab246509) at 1/1000 dilution

Lane 1:
Mouse testis tissue lysate at 20 µg

Lane 2:
MEF (mouse embryonic fibroblast (immortalized)), whole cell lysate at 20 µg

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

Lane 4:
Rat testis tissue lysate at 20 µg

Lane 5:
PC-12 (rat adrenal gland pheochromocytoma), whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 24 kDa

Observed band size: 26 kDa

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