abcam

ab223138

Anti-Glucocorticoid Receptor antibody [EPR19621] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR19621
Purification technique	Affinity purification Protein A
Concentration	1.066 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human, Transfected cell lysate - Human
Dilution info	-

Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

Target data

See full target information NR3C1

Function Receptor for glucocorticoids (GC) (PubMed:27120390, PubMed:37478846). Has a dual mode of action: as a transcription factor that binds to glucocorticoid response elements (GRE), both for nuclear and mitochondrial DNA, and as a modulator of other transcription factors (PubMed:28139699). Affects inflammatory responses, cellular proliferation and differentiation in target tissues. Involved in chromatin remodeling (PubMed:9590696). Plays a role in rapid mRNA degradation by binding to the 5' UTR of target mRNAs and interacting with PNRC2 in a ligand-dependent manner which recruits the RNA helicase UPF1 and the mRNA-decapping enzyme DCP1A, leading to RNA decay (PubMed:25775514). Could act as a coactivator for STAT5-dependent transcription upon growth hormone (GH) stimulation and could

reveal an essential role of hepatic GR in the control of body growth (By similarity). Isoform Alpha. Has transcriptional activation and repression activity (PubMed:11435610, PubMed:15769988, PubMed:15866175, PubMed:17635946, PubMed:19141540, PubMed:19248771, PubMed:20484466, PubMed:21664385, PubMed:23820903). Mediates glucocorticoid-induced apoptosis (PubMed:23303127). Promotes accurate chromosome segregation during mitosis (PubMed:25847991). May act as a tumor suppressor (PubMed:25847991). May play a negative role in adipogenesis through the regulation of lipolytic and antilipogenic gene expression (By similarity). Isoform Beta. Acts as a dominant negative inhibitor of isoform Alpha (PubMed:20484466, PubMed:7769088, PubMed:8621628). Has intrinsic transcriptional activity independent of isoform Alpha when both isoforms are coexpressed (PubMed:19248771, PubMed:26711253). Loses this transcription modulator function on its own (PubMed:20484466). Has no hormone-binding activity (PubMed:8621628). May play a role in controlling glucose metabolism by maintaining insulin sensitivity (By similarity). Reduces hepatic gluconeogenesis through down-regulation of PEPCK in an isoform Alpha-dependent manner (PubMed:26711253). Directly regulates STAT1 expression in isoform Alpha-independent manner (PubMed:26711253). Isoform Alpha-2. Has lower transcriptional activation activity than isoform Alpha. Exerts a dominant negative effect on isoform Alpha trans-repression mechanism (PubMed:20484466). Isoform GR-P. Increases activity of isoform Alpha. Isoform Alpha-B. More effective than isoform Alpha in transcriptional activation, but not repression activity. Isoform 10. Has transcriptional activation activity. Isoform Alpha-C1. Has transcriptional activation activity. Isoform Alpha-C2. Has transcriptional activation activity. Isoform Alpha-C3. Has highest transcriptional activation activity of all isoforms created by alternative initiation (PubMed:15866175, PubMed:23820903). Has transcriptional repression activity (PubMed:23303127). Mediates glucocorticoid-induced apoptosis (PubMed:23303127, PubMed:23820903). Isoform Alpha-D1. Has transcriptional activation activity. Isoform Alpha-D2. Has transcriptional activation activity. Isoform Alpha-D3. Has lowest transcriptional activation activity of all isoforms created by alternative initiation (PubMed:15866175, PubMed:23820903). Has transcriptional repression activity (PubMed:23303127).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab223138 is the carrier-free version of ab183127.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	The glucocorticoid receptor (GR) also known as the cortisol receptor is a type of nuclear receptor that functions as a transcription factor. This receptor has a molecular mass of approximately 97 kDa. GR is expressed in various tissues including the liver lung and immune cells. Its mechanical action involves binding to glucocorticoids—hormones like cortisol—which can regulate DNA transcription. When activated the receptor translocates into the cell nucleus where it can directly interact with DNA to regulate gene expression.
Biological function summary	The glucocorticoid receptor plays a significant role in mediating the physiological effects of glucocorticoids. It controls processes like inflammation and immune response. The receptor is part of a larger receptor complex enhancing its effectiveness in gene regulation. It modulates expression levels of diverse genes involved in metabolism immune functionality and cellular growth. GR's regulatory actions make it contextual within various biological processes impacting cellular behavior extensively.
Pathways	The glucocorticoid receptor integrates into significant signaling networks like the hypothalamic-pituitary-adrenal (HPA) axis and the inflammatory response pathway. This receptor coordinates with other proteins to control stress responses and inflammatory signals. In the HPA axis GR helps regulate cortisol levels and counteracts inflammatory cytokines. Its interaction with other receptors and transcription factors exemplifies its role in essential pathways that maintain homeostasis and stress adaptation within the organism.
Associated diseases and disorders	Abnormal glucocorticoid receptor function links to conditions like Cushing's syndrome and glucocorticoid resistance. Cushing's syndrome characterized by excessive cortisol levels shows altered GR signaling. Similarly glucocorticoid resistance involves mutations or dysfunctions in GR that lead to improper hormone action affecting inflammation and immune responses. These diseases often involve other proteins such as various cytokines in the inflammatory response showing the broad impact of GR in disease processes.

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

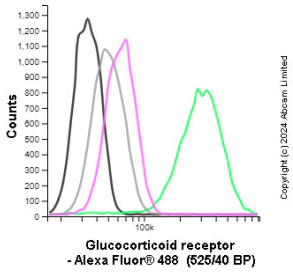
We do not recommend this combination. It is not covered by our product promise.

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



Flow Cytometry (Intracellular) - Anti-Glucocorticoid Receptor antibody [EPR19621] - BSA and Azide free (ab223138)

Glucocorticoid Receptor Flow Cytometry (Intracellular) staining using rabbit Anti-Glucocorticoid Receptor antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183127).

Flow cytometry overlay histogram showing wild-type (WT) HeLa (green line) and NR3C1 knockout (KO) HeLa stained with ab183127 (magenta line). The cells were fixed with 80% methanol (5 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 mins. The cells were then incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody ab183127 (1x 10^6 in 100µl at 0.04 µg/ml (1/54,850 dilution) for 30 mins at 22°C.

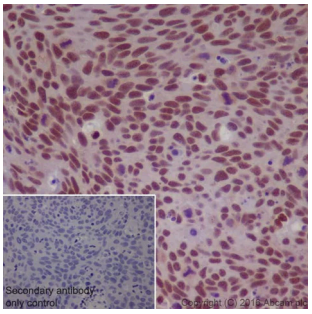
The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at 1/4000 dilution for 30 mins at 22°C

Isotype control antibody Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control was used at the same concentration and conditions as the primary antibody (HeLa WT - black line,

NR3C1 KO HeLa - grey line). Unlabelled sample was also used as a control (this line is not shown for the purpose of simplicity).

Acquisition of >5000 events were collected using a 50 mW Blue laser (488nm) and 525/40 bandpass filter.

This antibody gave a positive signal in HeLa WT Fixed with 4% formaldehyde (10 min) / permeabilised with 0.1% PBS-Triton X-100 for 15 mins under the same conditions.



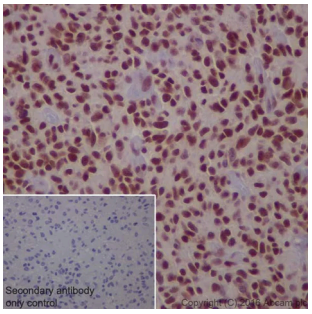
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucocorticoid Receptor antibody [EPR19621] - BSA and Azide free (ab223138)

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

Immunohistochemical analysis of paraffin-embedded Human cervix carcinoma tissue labeling Glucocorticoid Receptor with ab183127 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nucleus staining on tumor cells of the cervix carcinoma is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab97051 at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183127).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



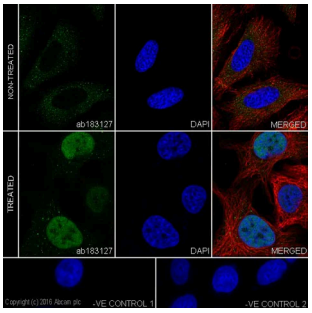
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucocorticoid Receptor antibody [EPR19621] - BSA and Azide free (ab223138)

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

Immunohistochemical analysis of paraffin-embedded Human glioma tissue labeling Glucocorticoid Receptor with ab183127 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nucleus staining on tumor cells of the Human glioma is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab97051 at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183127).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-Glucocorticoid Receptor antibody [EPR19621] - BSA and Azide free (ab223138)

Glucocorticoid Receptor Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Glucocorticoid Receptor antibody

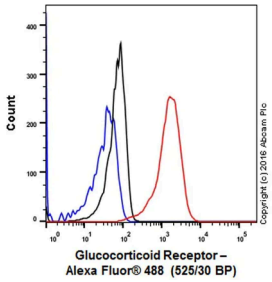
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling Glucocorticoid Receptor with ab183127 at 1/500 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
The results show signal translocation after dexamethasone (100 nM for 2 hours) treatment on Hela cells. PMID: 24291004.

The nuclear counter stain is DAPI (blue).

Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed (ab150120) at 1/1000 dilution (red).

The negative controls are as follows:
-ve control 1: ab183127 at 1/500 dilution followed by ab150120 at 1/1000 dilution.
-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.

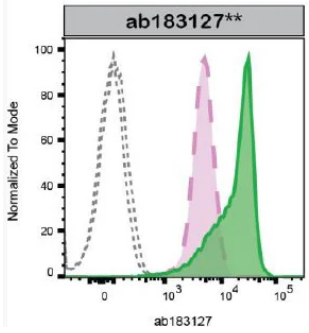
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183127).



Flow Cytometry (Intracellular) - Anti-Glucocorticoid Receptor antibody [EPR19621] - BSA and Azide free (ab223138)

Glucocorticoid Receptor Flow Cytometry (Intracellular) staining using rabbit Anti-Glucocorticoid Receptor antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling Glucocorticoid Receptor with ab183127 at 1/500 dilution (red) compared with a Rabbit IgG,monoclonal [EPR25A]-Isotype control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (Alexa Fluor® 488) at 1/500 dilution was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183127).



Flow Cytometry (Intracellular) - Anti-Glucocorticoid Receptor antibody [EPR19621] - BSA and Azide free (ab223138)

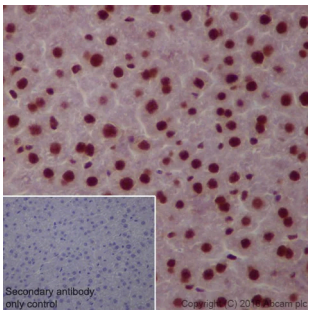
Glucocorticoid Receptor Flow Cytometry (Intracellular) staining using rabbit Anti-Glucocorticoid Receptor antibody

This data was developed using ab183127, the same antibody clone in a different buffer formulation.
A549 wild-type and Glucocorticoid Receptor knockout cells were labelled with a green or violet, fluorescent dye, respectively. Wild-type and knockout cells were mixed in a 1:1 ratio, fixed in 4% PFA and permeabilized in 0.1% Triton X-100.

Antibody staining was quantified using the Attune NxT Flow Cytometer with representative images showing the staining intensity in the knockout population (pink histogram, dashed line) compared to the wild-type cells (green histogram, solid line). Histograms with dotted lines represent secondary antibody-only controls in both wild-type and knockout cells.

Antibody dilution: 1/5490

This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.

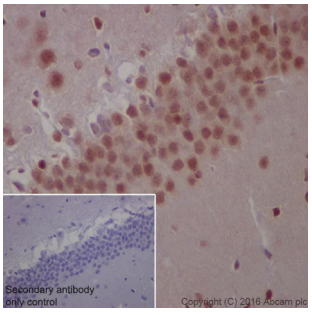


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucocorticoid Receptor antibody [EPR19621] - BSA and Azide free (ab223138)

Immunohistochemical analysis of paraffin-embedded Mouse liver tissue labeling Glucocorticoid Receptor with ab183127 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nucleus staining on hepatocytes of the mouse liver is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab97051 at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183127).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



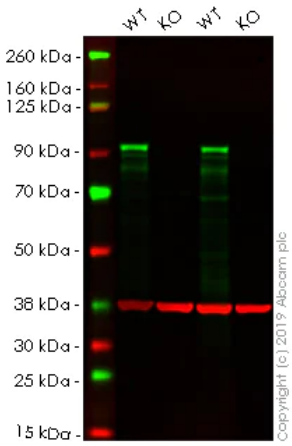
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glucocorticoid Receptor antibody [EPR19621] - BSA and Azide free (ab223138)

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

Immunohistochemical analysis of paraffin-embedded Rat hippocampus tissue labeling Glucocorticoid Receptor with ab183127 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Nucleus staining on rat hippocampus is observed. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab97051 at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab183127).

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-Glucocorticoid Receptor antibody [EPR19621] - BSA and Azide free (ab223138)

Glucocorticoid Receptor Western blot staining using rabbit Anti-Glucocorticoid Receptor antibody

This data was developed using the same antibody clone in a different buffer formulation (ab183127).
Lanes 1-4: Merged signal (red and green). Green - ab183127 observed at 90-100 kDa. Red - loading control ab8245 observed at 37 kDa.

ab183127 Anti-Glucocorticoid Receptor antibody [EPR19621] was shown to specifically react with Glucocorticoid Receptor in wild-type HeLa cells. Loss of signal was observed when knockout cell line ab261766 (knockout cell lysate ab257009) was used. Wild-type and Glucocorticoid Receptor knockout samples were subjected to SDS-PAGE. ab183127 and Anti-alpha Tubulin antibody [EP1332Y] - Microtubule Marker (ab52866) 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-Glucocorticoid Receptor antibody [EPR19621] (ab183127) at 1/1000 dilution

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

Lane 2:
NR3C1 knockout HeLa cell lysate at 20 µg

Lane 3:
Wild-type A549 cell lysate at 20 µg

Lane 4:
NR3C1 knockout A549 cell lysate at 20 µg

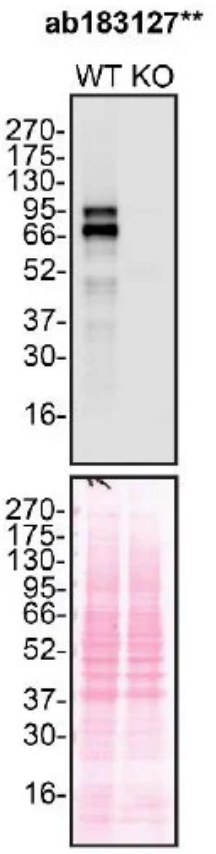
Secondary

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: 85 kDa

Observed band size: 90-100 kDa



Western blot - Anti-Glucocorticoid Receptor antibody [EPR19621] - BSA and Azide free (ab223138)

Glucocorticoid Receptor Western blot staining using rabbit Anti-Glucocorticoid Receptor antibody

This data was developed using ab183127, the same antibody clone in a different buffer formulation.
ab183127 was shown to react with NR3C1 in wild-type A549 cells in Western blot with loss of signal observed in a NR3C1 knockout cell line. Wild-type A549 and NR3C1 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with ab183127 overnight at 4°C at a 1/1000 dilution. Blots were incubated with secondary antibodies at 0.2 µg/mL before imaging.

This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.

All lanes:
Western blot - Anti-Glucocorticoid Receptor antibody [EPR19621] (ab183127) at 1/1000 dilution

Lane 1:
Wild-type A549 lysate at 30 µg

Lane 2:
Western blot - Human MMP7 knockout A549 cell line (ab328858) at 30 µg

Observed band size: 95 kDa, 70 kDa

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