abcam

ab316283

Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34]

Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283) is a rabbit monoclonal antibody detecting Hepatitis B Virus Core Antigen in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF, ELISA**. Suitable for **Hepatitis B virus**.

- Biophysical QC for unrivalled batch-batch consistency

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	EPR28251-34
Purification technique	Affinity purification Protein A
Concentration	0.479 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

I-ELISA

Tested

Species	Synthetic peptide - Hepatitis B virus
Dilution info	125 ng/mL
Notes	-

Predicted

Species	Hepatitis B virus
Dilution info	-
Notes	-

Not recommended

Species	Transfected cell line - Hepatitis B virus, Transfected cell lysate - Hepatitis B virus
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Transfected cell line - Hepatitis B virus
Dilution info	1/500
Notes	-

Predicted

Species	Hepatitis B virus
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Hepatitis B virus, Transfected cell lysate - Hepatitis B virus
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Transfected cell line - Hepatitis B virus
Dilution info	1/100
Notes	-

Predicted

Species	Hepatitis B virus
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Hepatitis B virus, Transfected cell lysate - Hepatitis B virus
Dilution info	-
Notes	-

IHC-P

Tested

Species	Transfected cell line - Hepatitis B virus
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Predicted

Species	Hepatitis B virus
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Hepatitis B virus, Transfected cell lysate - Hepatitis B virus
Dilution info	-
Notes	-

WB

Tested

Species	Transfected cell lysate - Hepatitis B virus
Dilution info	1/1000
Notes	-

Predicted

Species	Hepatitis B virus
Dilution info	-
Notes	-

Not recommended

Species	Synthetic peptide - Hepatitis B virus, Transfected cell line - Hepatitis B virus
Dilution info	-
Notes	-

Target data

See full target information C

Function Self assembles to form an icosahedral capsid. Most capsids appear to be large particles with an icosahedral symmetry of T=4 and consist of 240 copies of capsid protein, though a fraction forms smaller T=3 particles consisting of 180 capsid proteins. Entering capsids are transported along microtubules to the nucleus. Phosphorylation of the capsid is thought to induce exposure of nuclear localization signal in the C-terminal portion of the capsid protein that allows binding to the nuclear pore complex via the importin (karyopherin-) alpha and beta. Capsids are imported in intact form through the nuclear pore into the nuclear basket, where it probably binds NUP153. Only capsids that contain the mature viral genome can release the viral DNA and capsid protein into the nucleoplasm. Immature capsids get stuck in the basket. Capsids encapsulate the pre-genomic RNA and the P protein. Pre-genomic RNA is reverse-transcribed into DNA while the capsid is still

in the cytoplasm. The capsid can then either be directed to the nucleus, providing more genomes for transcription, or bud through the endoplasmic reticulum to provide new virions.

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

What is this antibody validated in?
Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF), ELISA in Hepatitis B virus samples.

Other related products
We have a range of other formats of antibody clone [EPR28251-34] also available for your convenience: ab316283, Carrier free - ab316284

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our

selection of trial-size antibodies.

Supplementary info

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

Activity summary	The Hepatitis B Virus Core Antigen also known as HBV core antigen or Hep B core is an important component of the hepatitis B virus (HBV). This antigen often referred to simply as 'core' forms the nucleocapsid of the virus. The HBV core antigen consists of a protein structure with a mass of approximately 21 kilodaltons. It is primarily expressed within the hepatocytes the liver cells where it plays a pivotal role in viral replication and assembly. The HBV core antigen is also referred to in studies as HBV protein or B core.
Biological function summary	The hepatitis B core antigen is integral for the assembly of the viral capsid which protects the viral genome during infection. It functions as part of a larger complex with other viral proteins including the pre-core and envelope proteins to facilitate viral lifecycle processes. This antigen allows for the encapsidation of viral RNA and serves as a scaffold for reverse transcription of the viral genome ensuring replication fidelity and successful infection spread.
Pathways	The hepatitis B core antigen is essential in the viral replication pathway and the HBV lifecycle pathway. It interacts closely with HBV polymerase during the packaging of viral genome into the capsid. These interactions are important for the transformation of RNA into DNA a critical step in viral maturation. The antigen is related to the HBx protein through these pathways; the HBx protein modulates viral replication and can influence the pathogenesis of the virus.
Associated diseases and disorders	The hepatitis B core antigen is strongly linked to chronic hepatitis B infection and liver diseases such as cirrhosis and hepatocellular carcinoma. The persistence of the core antigen in infected hepatocytes signifies ongoing viral replication which can lead to liver inflammation and damage. The interaction of the core antigen with immune system components such as anti-HBc antibodies assists in the diagnosis and monitoring of disease progression. It connects to the envelope proteins during the disease process which are important in immune system evasion and chronic infection establishment.

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.

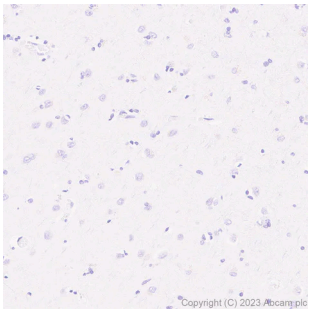
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

---

9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283)

Hepatitis B Virus Core Antigen Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human cerebrum using rabbit Anti-Hepatitis B Virus Core Antigen antibody

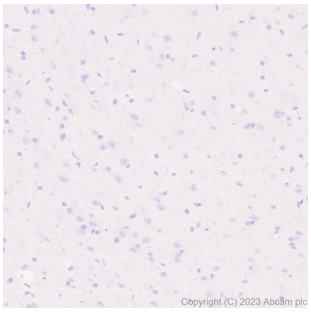
Immunohistochemical analysis of paraffin-embedded Human cerebrum tissue labeling Hepatitis B Virus Core Antigen with ab316283 at 1/2000 (0.25 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Negative control: no staining on human cerebrum. The section was incubated with ab316283 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 LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283)

Hepatitis B Virus Core Antigen Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat cerebrum using rabbit Anti-Hepatitis B Virus Core Antigen antibody

Immunohistochemical analysis of paraffin-embedded Rat cerebrum tissue labeling Hepatitis B Virus Core Antigen with ab316283 at 1/2000 (0.25 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Negative control: no staining on rat cerebrum. The section was incubated with ab316283 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 LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283)

Hepatitis B Virus Core Antigen Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse cerebrum using rabbit Anti-Hepatitis B Virus Core Antigen antibody

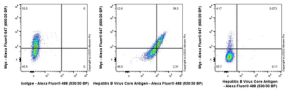
Immunohistochemical analysis of paraffin-embedded Mouse cerebrum tissue labeling Hepatitis B Virus Core Antigen with ab316283 at 1/2000 (0.25 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Negative control: no staining on mouse cerebrum. The section was incubated with ab316283 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 LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.

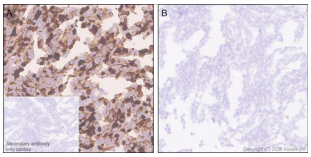


Flow Cytometry (Intracellular) - Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Isotype (Left) / 293T cells (human embryonic kidney epithelial cell) transfected with a Virus wild-type Hepatitis B Virus Core Antigen expression vector containing a myc-His-tag®(Middle) / 293T cells transfected with an empty expression vector containing a myc-His-tag® (Right) cells labelling Hepatitis B Virus Core Antigen with ab316283 at 1/500 dilution (0.1 ug)/Middle and Right (Red) compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.

Cells are co-stained with Myc tag conjugated to Alexa Fluor®647.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283)

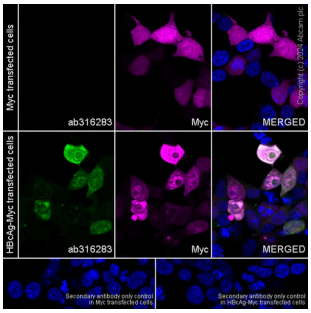
Immunohistochemical analysis of paraffin-embedded (A) 293T cells transfected with a Virus wild-type Hepatitis B Virus Core Antigen expression vector containing a myc-His-tag® (B) 293T cells (human embryonic kidney epithelial cell) transfected with an empty vector containing a myc-His-tag® tissue labeling Hepatitis B Virus Core Antigen with ab316283 at 1/2000 (0.25 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on 293T cells transfected with a Virus wild-type Hepatitis B Virus Core Antigen expression vector containing a myc-His-tag® (image A). No staining on 293T cells transfected with an empty vector containing a myc-His-tag® (image B). The section was incubated with ab316283 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 LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



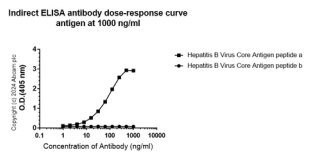
Immunocytochemistry/ Immunofluorescence - Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized 293T (human embryonic kidney epithelial cell) cells labelling Hepatitis B Virus Core Antigen with ab316283 at 1/100 (4.99 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/ml) dilution (Green).

Confocal image showing positive staining in 293T cells transfected with a Virus wild-type Hepatitis B Virus Core Antigen expression vector containing a myc-His-tag®. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab223894 Anti-Myc tag mouse monoclonal antibody (Alexa Fluor® 594) was used to counterstain at 1/100 (5ug/ml) dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 (2 ug/ml) dilution.

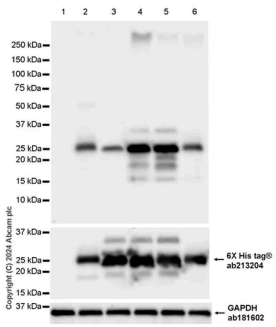


Indirect ELISA - Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283)

Indirect ELISA analysis of ab316283 at 1000-0 ng/ml. The Secondary antibody used was Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L) at 1:2500 dilution.

Antigen: Hepatitis B Virus Core Antigen peptide a, Hepatitis B Virus Core Antigen peptide b.

Antigen concentration: 1000 ng/ml



Western blot - Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283)

Hepatitis B Virus Core Antigen Western blot staining using rabbit Anti-Hepatitis B Virus Core Antigen antibody

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

In Western blot, Anti-6X His tag® antibody [EPR20547] - ChIP Grade (ab213204) staining at 1/5000 dilution.

All lanes:
Western blot - Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283) at 1/1000 dilution

Lane 1:
293T cells (human embryonic kidney epithelial cell) transfected with an empty vector containing a myc-His-tag®, whole cell lysate at 20 µg

Lane 2:
293T cells transfected with a Virus HBEAG_HBVA7 (genotype A7) vector containing a myc-His-tag®, whole cell lysate at 20 µg

Lane 3:
293T cells transfected with a Virus CAPSD_HBVB1 (genotype B1) vector containing a myc-His-tag®, whole cell lysate at 20 µg

Lane 4:
293T cells transfected with a Virus CAPSD_HBVC5 (genotype C5) vector containing a myc-His-tag®, whole cell lysate at 20 µg

Lane 5:
293T cells transfected with a Virus CAPSD_HBVE1 (genotype E1) vector containing a myc-His-tag®, whole cell lysate at 20 µg

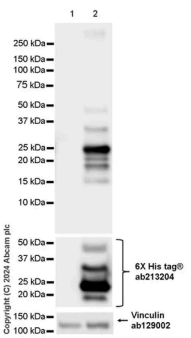
Lane 6:
293T cells transfected with a Virus HBEAG_HBVD3 (genotype D3) vector containing a myc-His-tag®, whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 25 kDa, 36 kDa

Exposure time: 8s



Western blot - Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283)

Hepatitis B Virus Core Antigen Western blot staining using rabbit Anti-Hepatitis B Virus Core Antigen antibody

In Western blot, Anti-Vinculin antibody [EPR8185] (ab129002) staining at 1/10000 dilution.

In Western blot, Anti-6X His tag® antibody [EPR20547] - ChIP Grade (ab213204) staining at 1/5000 dilution.

All lanes:
Western blot - Anti-Hepatitis B Virus Core Antigen antibody [EPR28251-34] (ab316283) at 1/1000 dilution

Lane 1:
293T cells (human embryonic kidney epithelial cell) transfected with an empty vector containing a myc-His-tag®, whole cell lysate at 20 µg

Lane 2:
293T cells transfected with a Virus wild-type Hepatitis B Virus Core Antigen expression vector containing a myc-His-tag®, whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 25 kDa, 124 kDa

Exposure time: 6s

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