

Product datasheet

Anti-DNA Ligase IV/LIG4 antibody [EPR16531] ab193353

KO VALIDATED Recombinant RabMAb[®]

★★★★☆ 4 Abreviews 13 References 6 Images

Overview

Product name	Anti-DNA Ligase IV/LIG4 antibody [EPR16531]
Description	Rabbit monoclonal [EPR16531] to DNA Ligase IV/LIG4
Host species	Rabbit
Tested applications	Suitable for: IHC-P, ICC/IF, WB
Species reactivity	Reacts with: Human
Immunogen	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: HeLa, Jurkat and Ramos cell lysate. IHC-P Human thymus tissue. ICC/IF: SH-SY5Y and wild-type HAP1 cells.
General notes	<p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none">- High batch-to-batch consistency and reproducibility- Improved sensitivity and specificity- Long-term security of supply- Animal-free production <p>For more information see here.</p> <p>Our RabMAb[®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb[®] patents.</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: 40% Glycerol (glycerin, glycerine), 59% PBS, 0.05% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR16531

Isotype

IgG

Applications

The Abpromise guarantee

Our **Abpromise guarantee** covers the use of ab193353 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P		1/50. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
ICC/IF		Use a concentration of 5 µg/ml.
WB	★★★★☆ (4)	1/1000 - 1/2000. Predicted molecular weight: 103 kDa.

Target

Function

Efficiently joins single-strand breaks in a double-stranded polydeoxynucleotide in an ATP-dependent reaction. Involved in DNA non-homologous end joining (NHEJ) required for double-strand break repair and V(D)J recombination. The LIG4-XRCC4 complex is responsible for the NHEJ ligation step, and XRCC4 enhances the joining activity of LIG4. Binding of the LIG4-XRCC4 complex to DNA ends is dependent on the assembly of the DNA-dependent protein kinase complex DNA-PK to these DNA ends.

Tissue specificity

Testis, thymus, prostate and heart.

Involvement in disease

LIG4 syndrome

Severe combined immunodeficiency autosomal recessive T-cell-negative/B-cell-negative/NK-cell-positive with sensitivity to ionizing radiation

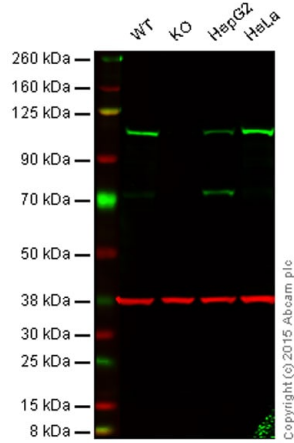
Sequence similarities

Belongs to the ATP-dependent DNA ligase family.
Contains 2 BRCT domains.

Cellular localization

Nucleus.

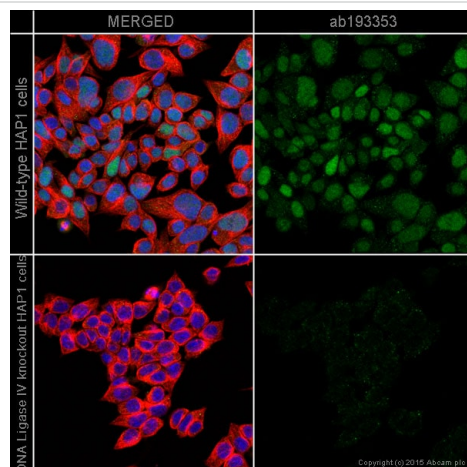
Images



Western blot - Anti-DNA Ligase IV/LIG4 antibody [EPR16531] (ab193353)

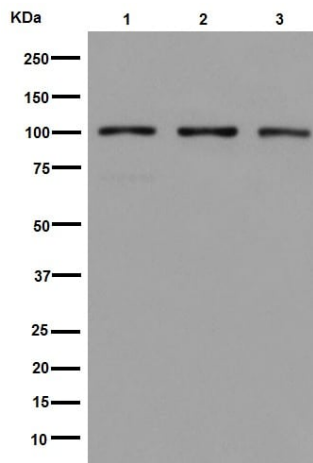
Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: DNA Ligase IV/LIG4 knockout HAP1 cell lysate (20 µg)
Lane 3: HepG2 cell lysate (20 µg)
Lane 4: HeLa cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab193353 observed at 103 kDa. Red - loading control, **ab8245**, observed at 37 kDa.

ab193353 was shown to specifically react with DNA Ligase IV/LIG4 when DNA ligase IV knockout samples were used. Wild-type and DNA Ligase IV/LIG4 knockout samples were subjected to SDS-PAGE. ab193353 and **ab8245** (loading control to GAPDH) were diluted 1/1000 and 1/2000 respectively and incubated overnight at 4°C. 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 1/10 000 dilution for 1 h at room temperature before imaging.



Immunocytochemistry/ Immunofluorescence - Anti-DNA Ligase IV/LIG4 antibody [EPR16531] (ab193353)

ab193353 staining DNA Ligase IV/LIG4 in wild-type HAP1 cells (top panel) and LIG4 knockout HAP1 cells (bottom panel). The cells were fixed with 4% formaldehyde (10min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab193353 at 5µg/ml dilution and **ab195889** at 1/250 dilution (shown in pseudo colour red) overnight at +4°C, followed by a further incubation at room temperature for 1h with a goat secondary antibody to Rabbit IgG (Alexa Fluor® 488) (**ab150081**) at 2 µg/ml (shown in green). Nuclear DNA was labelled in blue with DAPI.



Western blot - Anti-DNA Ligase IV/LIG4 antibody [EPR16531] (ab193353)

All lanes : Anti-DNA Ligase IV/LIG4 antibody [EPR16531] (ab193353) at 1/1000 dilution

Lane 1 : HeLa cell lysate

Lane 2 : Jurkat cell lysate

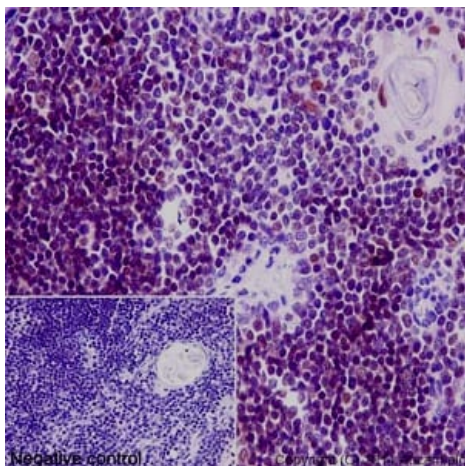
Lane 3 : Ramos cell lysate

Lysates/proteins at 20 µg per lane.

Secondary

All lanes : Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

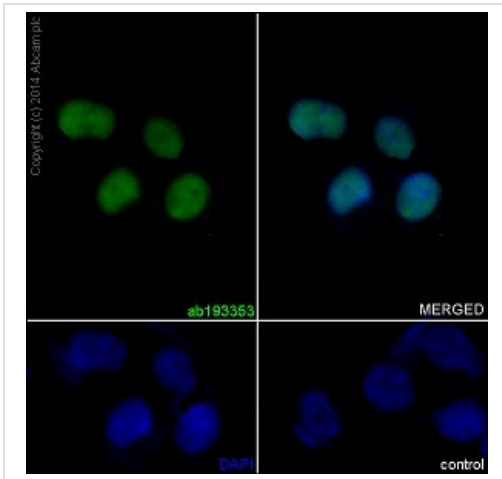
Predicted band size: 103 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DNA Ligase IV/LIG4 antibody [EPR16531] (ab193353)

Immunohistochemical analysis of paraffin embedded Human thymus tissue sections labeling DNA Ligase IV/LIG4 using ab193353 at a 1/50 dilution. A ready to use HRP Polymer for Rabbit IgG was used as the secondary. Hematoxylin counterstain.





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



Immunofluorescent analysis of 4% paraformaldehyde fixed SH-SY5Y cells labeling DNA Ligase IV/LIG4 using ab193353 at a 1/50 dilution. A Goat anti rabbit IgG (Alexa Fluor®488) ([ab150077](#)) was used as the secondary at a 1/400 dilution. Counterstain DAPI. Cells were permeabilized using 0.1% Triton X-100.

Immunocytochemistry/ Immunofluorescence - Anti-DNA Ligase IV/LIG4 antibody [EPR16531] (ab193353)

Why choose a recombinant antibody?

 <p>Research with confidence Consistent and reproducible results</p>	 <p>Long-term and scalable supply Recombinant technology</p>
 <p>Success from the first experiment Confirmed specificity</p>	 <p>Ethical standards compliant Animal-free production</p>

Anti-DNA Ligase IV/LIG4 antibody [EPR16531] (ab193353)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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