

Product datasheet

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

KO VALIDATED Recombinant RabMAb[®]

★ ★ ★ ★ ★ 3 Abreviews 5 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 within Human DNA Ligase IV/LIG4 aa 500-650. The exact sequence is proprietary. Database link: P49917
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	This product was previously labelled as DNA Ligase IV

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 production

For more information [see here](#).

Our RabMAb[®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to [RabMAb[®] patents](#).

Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough.

Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility.

We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise[™] guarantee.

In preparation for this, we have started to update the applications & species that this product is Abpromise guaranteed for.

We are also updating the applications & species that this product has been “predicted to work with,” however this information is not covered by our Abpromise guarantee.

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

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

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		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

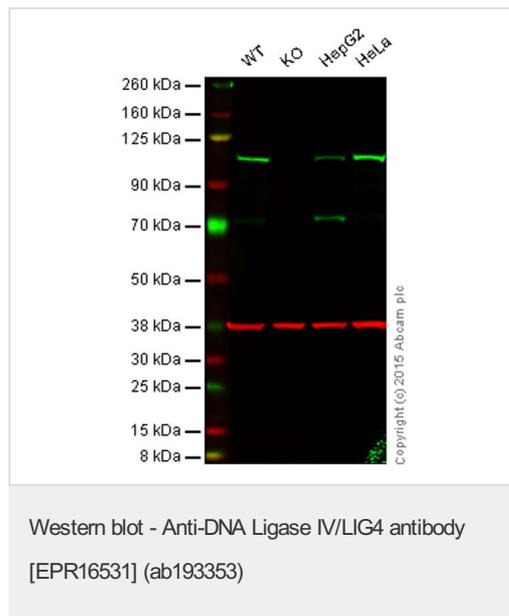
Belongs to the ATP-dependent DNA ligase family.

Contains 2 BRCT domains.

Cellular localization

Nucleus.

Images



Lane 1: Wild-type HAP1 cell lysate (20 µg)

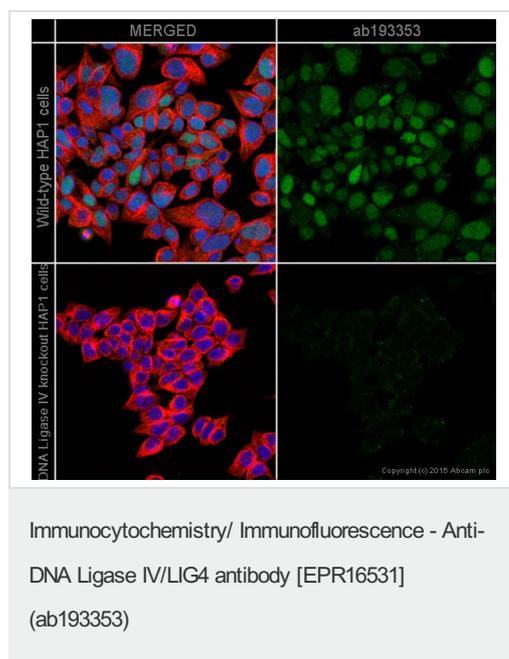
Lane 2: DNA Ligase IV/LIG4 knockout HAP1 cell lysate (20 µg)

Lane 3: HepG2 cell lysate (20 µg)

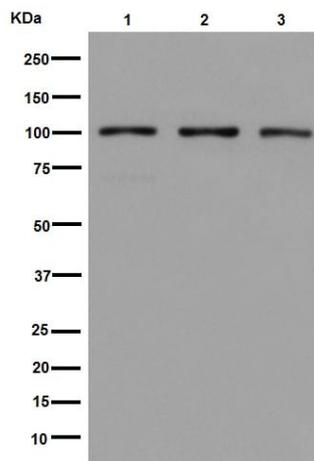
Lane 4: HeLa cell lysate (20 µg)

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.



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

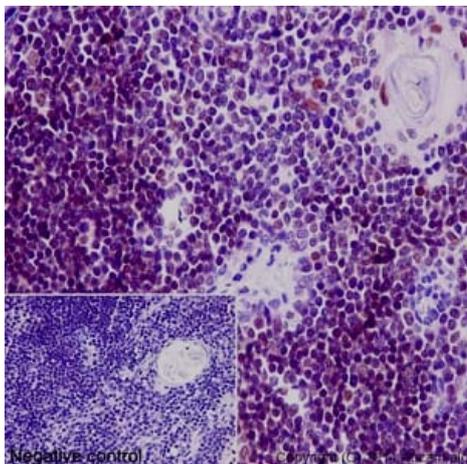
Lane 3 : Ramos cell lysate

Lysates/proteins at 20 µg per lane.

Secondary

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

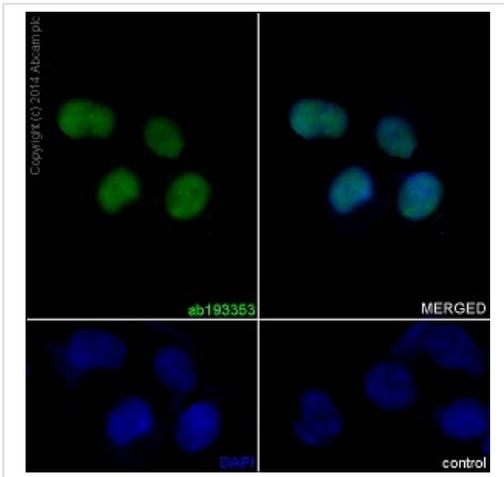
Predicted band size: 103 kDa



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?

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

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

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

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors