

## Product datasheet

# Anti-Arc antibody [EPR18950] ab183183

**KO VALIDATED** Recombinant RabMAB

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### Overview

<b>Product name</b>	Anti-Arc antibody [EPR18950]
<b>Description</b>	Rabbit monoclonal [EPR18950] to Arc
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> WB, IHC-P, IP
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
<b>Positive control</b>	WB: Human hippocampus lysate; Mouse and rat hippocampus and brain lysates; Neuro-2a and SH-SY5Y cell lysates. IHC-P: Mouse hippocampus and cerebral cortex tissues. IP: Mouse brain lysate.
<b>General notes</b>	<p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"><li>- High batch-to-batch consistency and reproducibility</li><li>- Improved sensitivity and specificity</li><li>- Long-term security of supply</li><li>- Animal-free production</li></ul> <p>For more information <a href="#">see here</a>.</p> <p>Our RabMAB<sup>®</sup> technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to <a href="#">RabMAB<sup>®</sup> patents</a>.</p>

### Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	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.
<b>Storage buffer</b>	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: 0.05% BSA, 40% Glycerol, PBS
<b>Purity</b>	Protein A purified
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	EPR18950

Isotype

IgG

## Applications

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### The Abpromise guarantee

Our **Abpromise guarantee** covers the use of ab183183 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
WB		1/1000. Detects a band of approximately 45 kDa (predicted molecular weight: 45 kDa).
IHC-P		1/100. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.
IP		1/30.

## Target

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### Function

Required for consolidation of synaptic plasticity as well as formation of long-term memory. Regulates endocytosis of AMPA receptors in response to synaptic activity. Required for homeostatic synaptic scaling of AMPA receptors (By similarity). Plays a role in the regulation of cell morphology and cytoskeletal organization. Required in the stress fiber dynamics and cell migration.

### Sequence similarities

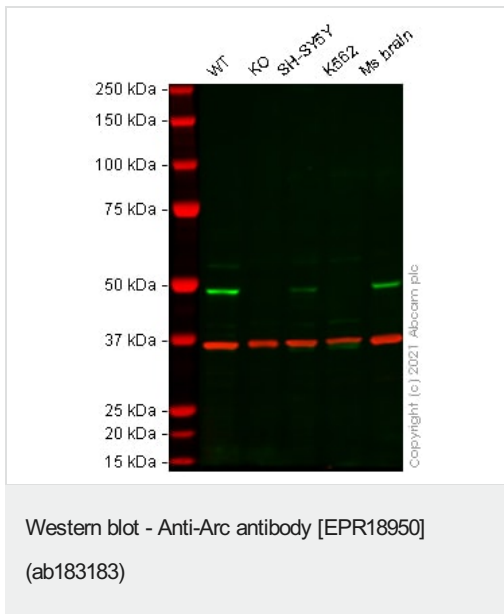
Belongs to the ARC/ARG3.1 family.

### Cellular localization

Cytoplasm > cytoskeleton. Endosome. Cytoplasmic vesicle > secretory vesicle > acrosome. Cell junction > synapse > postsynaptic cell membrane > postsynaptic density. Cell projection > dendrite. Cell projection > dendritic spine. Cell junction > synapse. Associated with the cell cortex of neuronal soma and dendrites. Enriched in postsynaptic density of dendritic spines. Associated with the sperm tail (By similarity). Enriched on the plasma membrane.

## Images

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**All lanes :** Anti-Arc antibody [EPR18950] (ab183183) at 1/500 dilution

**Lane 1 :** Wild-type Neuro-2a cell lysate

**Lane 2 :** ARC knockout Neuro-2a cell lysate

**Lane 3 :** SH-SY5Y cell lysate

**Lane 4 :** K562 cell lysate

**Lane 5 :** Mouse Brain cell lysate

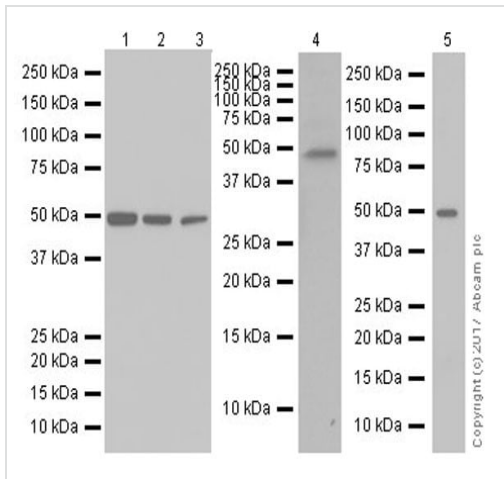
Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

**Predicted band size:** 45 kDa

**Observed band size:** 45 kDa

False colour image of Western blot: Anti-Arc antibody [EPR18950] staining at 1/500 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] ([ab8245](#)) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab183183 was shown to bind specifically to Arc. A band was observed at 45 kDa in wild-type Neuro-2a cell lysates with no signal observed at this size in arc knockout cell line [ab280071](#) (knockout cell lysate [ab280130](#)). To generate this image, wild-type and arc knockout Neuro-2a cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in fluorescent western blot (TBS-based) blocking solution before incubation with primary antibodies overnight at 4°C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ([ab216773](#)) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ([ab216776](#)) at 1/20000 dilution.



Western blot - Anti-Arc antibody [EPR18950] (ab183183)

**Lanes 1-4** : Anti-Arc antibody [EPR18950] (ab183183) at 1/1000 dilution

**Lane 5** : Anti-Arc antibody [EPR18950] (ab183183) at 1/5000 dilution

**Lane 1** : Mouse hippocampus lysate at 20 µg

**Lane 2** : Rat hippocampus lysate at 20 µg

**Lane 3** : Neuro-2a (mouse neuroblastoma cell line) whole cell lysate at 20 µg

**Lane 4** : SH-SY5Y (human neuroblastoma cell line from bone marrow) whole cell lysate at 10 µg

**Lane 5** : Human hippocampus lysate at 10 µg

### Secondary

**Lanes 1-4** : Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/100000 dilution

**Lane 5** : VeriBlot for IP Detection Reagent (HRP) ([ab131366](#)) at 1/4000 dilution

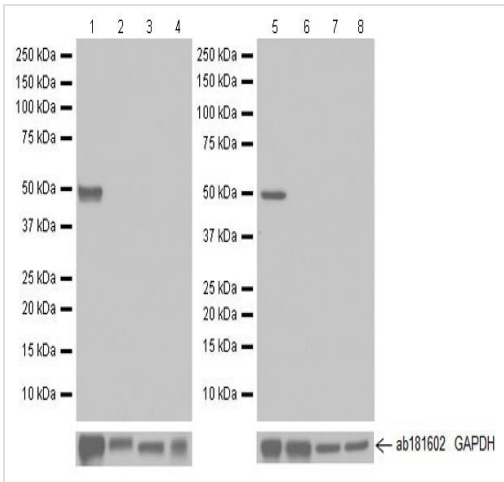
Developed using the ECL technique.

**Predicted band size:** 45 kDa

**Observed band size:** 45 kDa

**Exposure time:** 3 minutes

Blocking/Dilution buffer: 5% NFDN/TBST.



Western blot - Anti-Arc antibody [EPR18950]  
(ab183183)

**All lanes** : Anti-Arc antibody [EPR18950] (ab183183) at 1/1000 dilution

**Lane 1** : Mouse brain lysate

**Lane 2** : Mouse heart lysate

**Lane 3** : Mouse kidney lysate

**Lane 4** : Mouse spleen lysate

**Lane 5** : Rat brain lysate

**Lane 6** : Rat heart lysate

**Lane 7** : Rat liver lysate

**Lane 8** : Rat spleen lysate

Lysates/proteins at 10 µg per lane.

### Secondary

**All lanes** : Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/100000 dilution

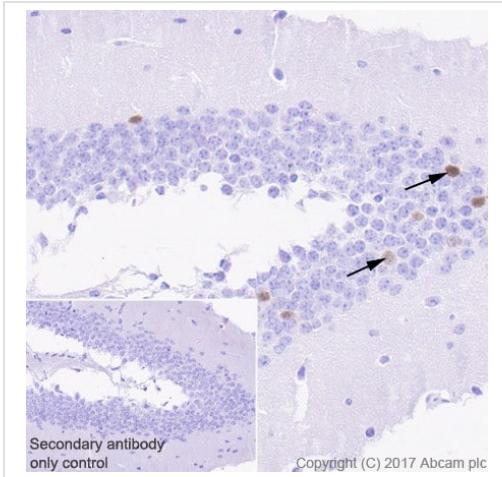
Developed using the ECL technique.

**Predicted band size:** 45 kDa

**Observed band size:** 45 kDa

**Exposure time:** 3 minutes

Blocking/Dilution buffer: 5% NFD/MTBST.

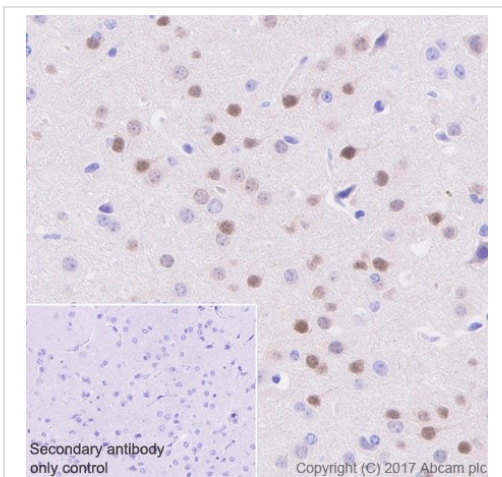


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Arc antibody [EPR18950] (ab183183)

Immunohistochemical analysis of paraffin-embedded mouse hippocampus tissue labeling Arc with ab183183 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ready to use. Sparse nuclear staining (arrows) in the dentate gyrus of mouse hippocampus (PMID: 19750198, PMID: 19628007). Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

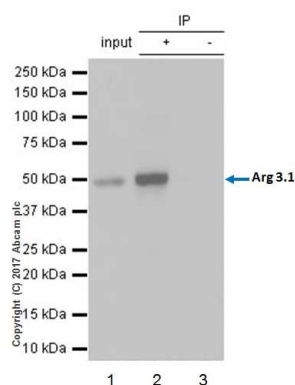


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Arc antibody [EPR18950] (ab183183)

Immunohistochemical analysis of paraffin-embedded mouse cerebral cortex tissue labeling Arc with ab183183 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ready to use. Nuclear staining on neurons of mouse cerebral cortex. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunoprecipitation - Anti-Arc antibody [EPR18950] (ab183183)

Arc was immunoprecipitated from 0.35 mg of mouse brain lysate with ab183183 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab183183 at 1/500 dilution. VeriBlot for IP Detection Reagent (HRP) ([ab131366](#)), was used for detection at 1/1000 dilution.

Lane 1: Mouse brain lysate 10 µg (Input).

Lane 2: ab183183 IP in mouse brain lysate.

Lane 3: Rabbit monoclonal IgG ([ab172730](#)) instead of ab183183 in mouse brain lysate.

**Exposure time:** 1 second

Blocking/dilution buffer: 5% NFD/MTBST.

### 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-Arc antibody [EPR18950] (ab183183)

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

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