abcam

Product datasheet

# Anti-BACE1 antibody [EPR19523] - BSA and Azide free ab238937

KO VALIDATED Recombinant RabMAb

12 Images

## Overview

| | |
|---|---|
| **Product name** | Anti-BACE1 antibody [EPR19523] - BSA and Azide free |
| **Description** | Rabbit monoclonal [EPR19523] to BACE1 - BSA and Azide free |
| **Host species** | Rabbit |
| **Tested applications** | **Suitable for:** IHC-Fr, WB, IP, IHC-P |
| **Species reactivity** | **Reacts with:** Mouse, Rat, Human |
| **Immunogen** | Recombinant fragment. This information is proprietary to Abcam and/or its suppliers. |
| **Positive control** | WB: HAP1 and SH-SY5Y cells. |
| **General notes** | ab238937 is the carrier-free version of **ab183612**.<br><br>Our **carrier-free** antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency.<br><br>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.<br><br>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.<br><br>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.<br><br>This product is a recombinant monoclonal antibody, which offers several advantages including:<br>- High batch-to-batch consistency and reproducibility<br>- Improved sensitivity and specificity<br>- Long-term security of supply<br>- Animal-free production<br>For more information **see here**.<br><br>Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**. |

## Properties

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|---|---|
| **Form** | Liquid |
| **Storage instructions** | Shipped at 4°C. Store at +4°C. Do Not Freeze. |
| **Storage buffer** | pH: 7.2<br>Constituent: PBS |
| **Carrier free** | Yes |
| **Purity** | Protein A purified |
| **Clonality** | Monoclonal |
| **Clone number** | EPR19523 |
| **Isotype** | IgG |

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab238937 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-Fr** | | Use at an assay dependent concentration.<br>IHC-Fr is recommended for mouse only. |
| **WB** | | Use at an assay dependent concentration. Detects a band of approximately 68 kDa (predicted molecular weight: 56 kDa). |
| **IP** | | Use at an assay dependent concentration. |
| **IHC-P** | | Use at an assay dependent concentration. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.<br>IHC-P is recommended for mouse only. Binding in rat is weak under our experimental conditions and requires further optimization. |

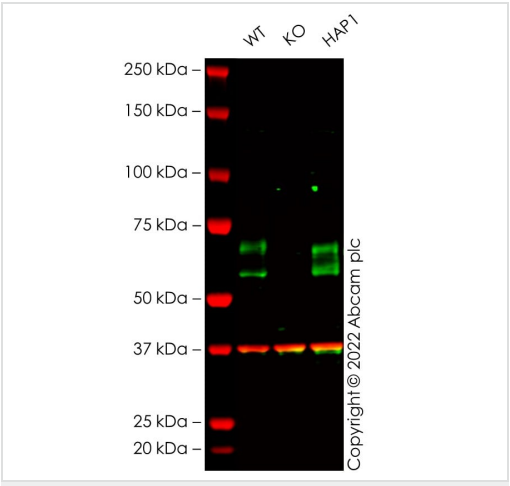
## Target

| | |
|---|---|
| **Function** | Responsible for the proteolytic processing of the amyloid precursor protein (APP). Cleaves at the N-terminus of the A-beta peptide sequence, between residues 671 and 672 of APP, leads to the generation and extracellular release of beta-cleaved soluble APP, and a corresponding cell-associated C-terminal fragment which is later released by gamma-secretase. |
| **Tissue specificity** | Expressed at high levels in the brain and pancreas. In the brain, expression is highest in the substantia nigra, locus coruleus and medulla oblongata. |
| **Sequence similarities** | Belongs to the peptidase A1 family. |
| **Domain** | The transmembrane domain is necessary for its activity. It determines its late Golgi localization and access to its substrate, APP. |
| **Post-translational modifications** | Glycosylated. |

**Cellular localization**

Membrane. Golgi apparatus > trans-Golgi network. Endoplasmic reticulum. Endosome. Cell surface. Predominantly localized to the later Golgi/trans-Golgi network (TGN) and minimally detectable in the early Golgi compartments. A small portion is also found in the endoplasmic reticulum, endosomes and on the cell surface.

## Images




Western blot - Anti-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

**All lanes :** Anti-BACE1 antibody [EPR19523] (**ab183612**) at 1/1000 dilution

**Lane 1 :** Wild-type SH-SY5Y cell lysate
**Lane 2 :** Bace1 knockout SH-SY5Y cell lysate
**Lane 3 :** HAP1 cell lysate

Lysates/proteins at 20 µg per lane.

**Secondary**
**All lanes :** Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

**Predicted band size:** 56 kDa
**Observed band size:** 60,70 kDa

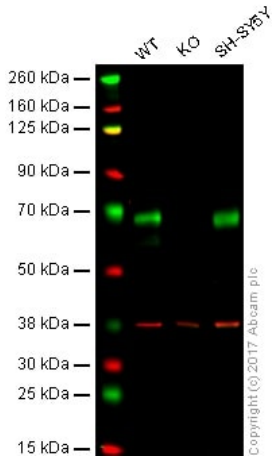
False colour image of Western blot: Anti-BACE1 antibody [EPR19523] staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] (**ab8245**) loading control staining at 1/20000 dilution, shown in red.

In Western blot, **ab183612** was shown to bind specifically to BACE1. A band was observed at 60/70 kDa in wild-type SH-SY5Y cell lysates with no signal observed at this size in Bace1 knockout cell line **ab280078** (knockout cell lysate **ab280137**).

To generate this image, wild-type and Bace1 knockout SH-SY5Y cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) 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 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.

This data was developed using the same antibody clone in a different buffer formulation (**ab183612**).



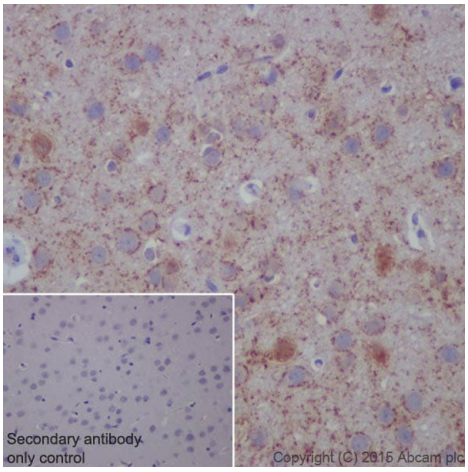

Western blot - Anti-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

**Lane 1:** Wild-type HAP1 whole cell lysate (20 µg)
**Lane 2:** BACE1 knockout HAP1 whole cell lysate (20 µg)
**Lane 3:** SHSY5Y whole cell lysate (20 µg)

**Lanes 1 - 3:** Merged signal (red and green). Green - **ab183612** observed at 68 kDa. Red - loading control, **ab181602**, observed at 37 kDa.

**ab183612** was shown to specifically react with BACE1 in wild-type HAP1 cells as signal was lost in BACE1 knockout cells. Wild-type and BACE1 knockout samples were subjected to SDS-PAGE. **ab183612** and **ab181602** (Rabbit anti-GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed **ab216773** and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed **ab216776** secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab183612**).



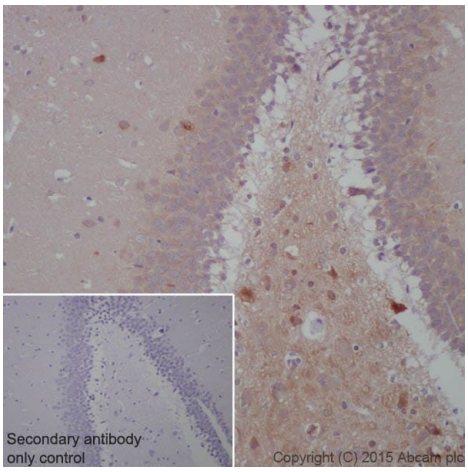

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

Immunohistochemical analysis of paraffin-embedded rat cerebrum tissue labelling BACE1 with **ab183612** at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution. The sample was counterstained with hematoxylin. Antigen retrieval was performed using Tris/EDTA buffer; pH 9.0.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution.

Binding in rat was weak under our experimental conditions and requires further optimization.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab183612**).




Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

Immunohistochemical analysis of paraffin-embedded rat hippocampus tissue labelling BACE1 with **ab183612** at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution. The sample was counterstained with hematoxylin. Antigen retrieval was performed using Tris/EDTA buffer; pH 9.0.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution.

Binding in rat was weak under our experimental conditions and requires further optimization.

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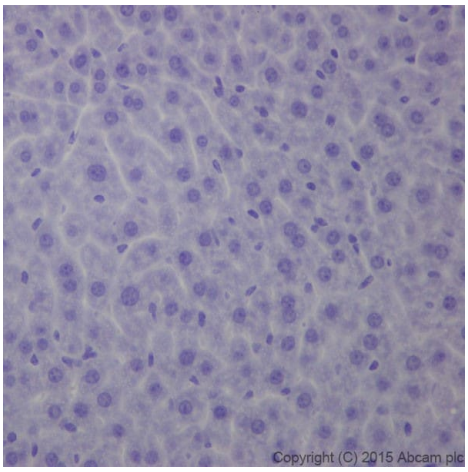


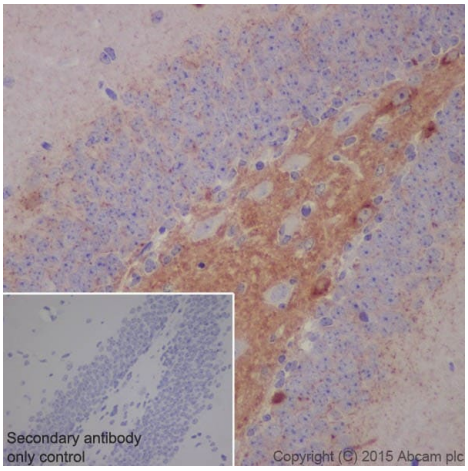

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

Immunohistochemical analysis of paraffin-embedded mouse liver tissue labeling BACE1 with **ab183612** at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution. Negative staining on mouse liver. 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 (**ab183612**).

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



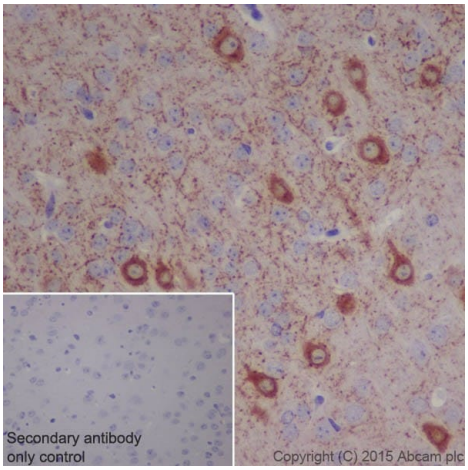

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

Immunohistochemical analysis of paraffin-embedded mouse hippocampus tissue labeling BACE1 with **ab183612** at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution. Cytoplasm staining on mouse Hilar region of the dentate gyrus is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (**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 (**ab183612**).

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



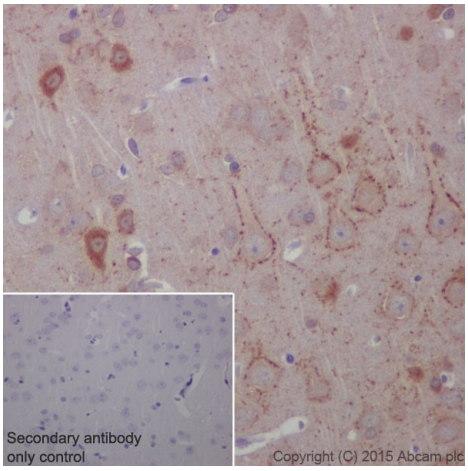

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

Immunohistochemical analysis of paraffin-embedded mouse cerebrum tissue labeling BACE1 with **ab183612** at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution. Cytoplasm staining on neurons of the mouse cerebrum is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (**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 (**ab183612**).

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-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

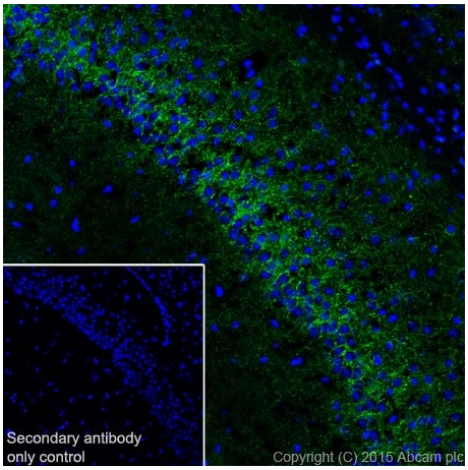
Immunohistochemical analysis of paraffin-embedded rat cerebrum tissue labeling BACE1 with **ab183612** at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution. Cytoplasm staining on some neurons of the rat cerebrum is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution.

Binding in rat was weak under our experimental conditions and requires further optimization.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab183612**).

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

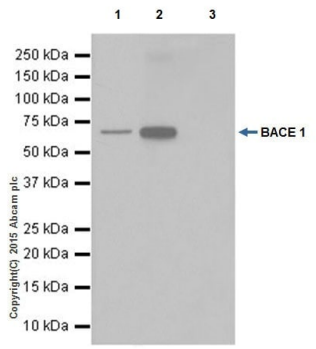



Immunohistochemistry (Frozen sections) - Anti-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen mouse hippocampus tissue labeling BACE1 with **ab183612** at 1/250 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (**ab150077**) secondary antibody at 1/1000 dilution (green). The result showed mainly cytoplasmic staining on mouse hippocampus. The nuclear counterstain is DAPI (blue).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat anti-rabbit IgG (Alexa Fluor® 488) (**ab150077**) secondary antibody 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 (**ab183612**).




Immunoprecipitation - Anti-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

BACE1 was immunoprecipitated from 1mg of rat hippocampus whole cell lysate with **ab183612** at 1/50 dilution. Western blot was performed from the immunoprecipitate using **ab183612** at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (**ab131366**), was used for detection at 1/10000 dilution.

Lane 1: Rat hippocampus whole cell lysate, 10µg (Input).

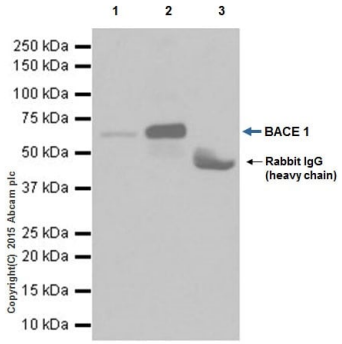
Lane 2: **ab183612** IP in Rat hippocampus whole cell lysate.

Lane 3: Rabbit IgG,monoclonal [EPR25A] - Isotype Control (**ab172730**) instead of **ab183612** in rat hippocampus whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 5 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab183612**).




Immunoprecipitation - Anti-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

BACE1 was immunoprecipitated from 1mg of mouse hippocampus whole cell lysate with **ab183612** at 1/50 dilution. Western blot was performed from the immunoprecipitate using **ab183612** at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (**ab131366**), was used for detection at 1/10000 dilution.

Lane 1: Mouse hippocampus whole cell lysate, 10µg (Input).

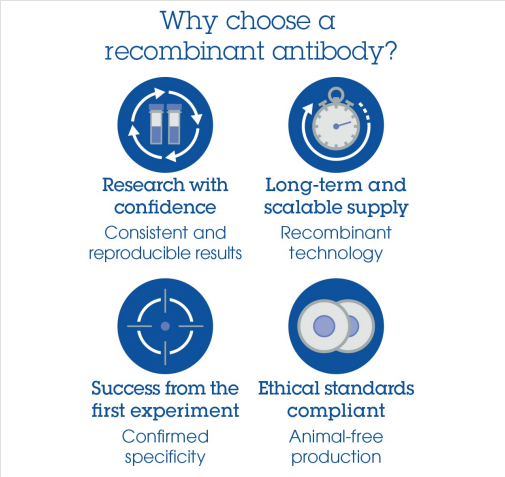
Lane 2: **ab183612** IP in mouse hippocampus whole cell lysate.

Lane 3: Rabbit IgG,monoclonal [EPR25A] - Isotype Control (**ab172730**) instead of **ab183612** in Mouse hippocampus whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 1 second.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab183612**).




Anti-BACE1 antibody [EPR19523] - BSA and Azide free (ab238937)

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

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