Anti-BACE1 Antibody [PSH05-19]

HA722244

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, IHC-Fr, IF-Tissue
Molecular Wt:	Predicted band size: 56 kDa
Clone number:	PSH05-19

Description: Beta-secretase 1, also known as beta-site amyloid precursor protein cleaving enzyme 1, beta-site APP cleaving enzyme 1 (BACE1), membrane-associated aspartic protease 2, memapsin-2, aspartyl protease 2, and ASP2, is an enzyme that in humans is encoded by the BACE1 gene. Expression of BACE1 is observed mainly in neurons. BACE1 is an aspartic acid protease important in the formation of myelin sheaths in peripheral nerve cells: in mice the expression of BACE1 is high in the postnatal stages, when myelination occurs. The transmembrane protein contains two active site aspartate residues in its extracellular protein domain and may function as a dimer, its cytoplasmic tail is required for the correct maturation and an efficient intracellular trafficking, but doesn't affect the activity. It is produced as a pro-enzyme, the endoproteolitc removal occurs after BACE leaves Endoplasmic reticulum, in the Golgi apparatus. In addition the pro-peptide receives additional sugars to increase the molecular mass. and the tail became a palmitoylated. The BACE1 expression is influenced by the inflammatory state: during AD the cytokines reduce the PPAR1 an inhibitor of BACE1 mRNA).

Immunogen: Recombinant fragment within Mouse BACE1 aa 50-350.

Positive control: HeLa cell lysate, SH-SY5Y cell lysate, NIH/3T3 cell lysate, PC-12 cell lysate, mouse brain tissue lysate, rat brain tissue lysate, human brain tissue, mouse brain tissue, rat brain tissue.

Subcellular location: Cell membrane, Golgi apparatus, trans-Golgi network, Endoplasmic reticulum, Endosome, Cell surface, Cytoplasmic vesicle membrane, Membrane raft, Lysosome, Late endosome, Early endosome, Recycling endosome, Cell projection, axon, dendrite.

Database links: SwissProt: P56817 Human | P56818 Mouse | P56819 Rat

Recommended Dilutions:

WB	1:1,000
IHC-P	1:200-1:1,000
IHC-Fr	1:200
IF-Tissue	1:100

Storage Buffer: PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

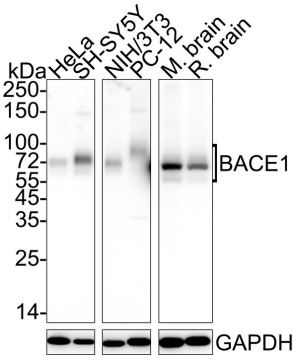

Fig1: Western blot analysis of BACE1 on different lysates with Rabbit anti-BACE1 antibody (HA722244) at 1/1,000 dilution.

Lane 1: HeLa cell lysate (20 µg/Lane)
Lane 2: SH-SY5Y cell lysate (20 µg/Lane)
Lane 3: NIH/3T3 cell lysate (20 µg/Lane)
Lane 4: PC-12 cell lysate (20 µg/Lane)
Lane 5: Mouse brain tissue lysate (40 µg/Lane)
Lane 6: Rat brain tissue lysate (40 µg/Lane)

Predicted band size: 56 kDa
Observed band size: 56-80 kDa

Exposure time: 25 seconds; ECL: K1802;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA722244) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

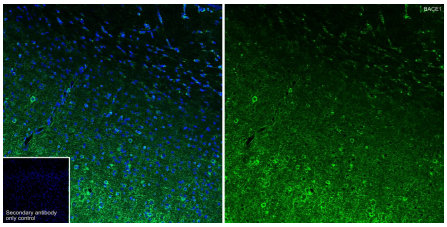

Fig2: Immunofluorescence analysis of frozen mouse brain tissue with Rabbit anti-BACE1 antibody (HA722244) at 1/100 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for about 2 minutes in microwave oven. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (HA722244, green) at 1/100 dilution overnight at 4 ℃, washed with PBS. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. Nuclei were counterstained with DAPI (blue).

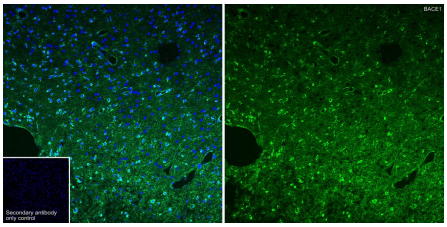

Fig3: Immunofluorescence analysis of frozen rat brain tissue with Rabbit anti-BACE1 antibody (HA722244) at 1/100 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for about 2 minutes in microwave oven. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (HA722244, green) at 1/100 dilution overnight at 4 ℃, washed with PBS. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. Nuclei were counterstained with DAPI (blue).

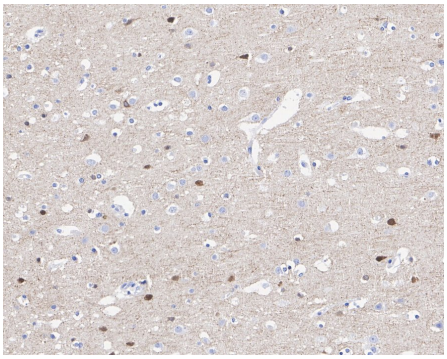

Fig4: Immunohistochemical analysis of paraffin-embedded human brain tissue with Rabbit anti-BACE1 antibody (HA722244) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA722244) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

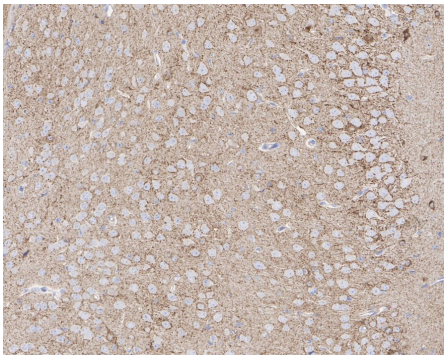

Fig5: Immunohistochemical analysis of paraffin-embedded mouse brain tissue with Rabbit anti-BACE1 antibody (HA722244) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA722244) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

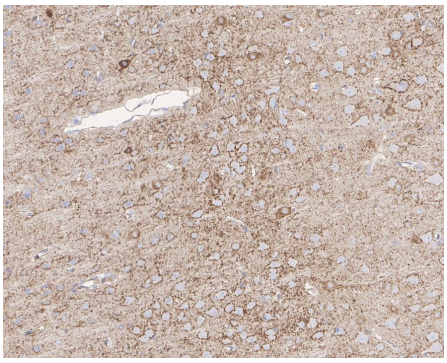

Fig6: Immunohistochemical analysis of paraffin-embedded rat brain tissue with Rabbit anti-BACE1 antibody (HA722244) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA722244) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

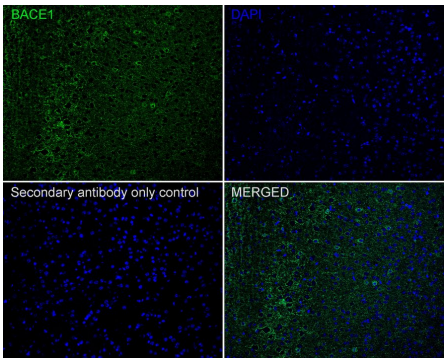

Fig7: Immunofluorescence analysis of paraffin-embedded mouse brain tissue labeling BACE1 with Rabbit anti-BACE1 antibody (HA722244) at 1/100 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (HA722244, green) at 1/100 dilution overnight at 4 ℃, washed with PBS. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. Nuclei were counterstained with DAPI (blue).

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Hampel H et al. The β-Secretase BACE1 in Alzheimer's Disease. Biol Psychiatry. 2021 Apr
2. Taylor HA et al. BACE1: More than just a β-secretase. Obes Rev. 2022 Jul