Anti-Neurogranin Antibody [PSH02-96]

HA721915

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, IF-Tissue, IHC-Fr
Molecular Wt:	Predicted band size: 8 kDa
Clone number:	PSH02-96

Description: Neurogranin is a small neuronal protein that binds to calmodulin in the absence of Ca2+ . Calmodulin binds Ca2+ and acts as a Ca2+ sensor to drive Ca2+-dependent signal transduction pathways by modulating its interaction with various kinases and phosphatases. In the postsynaptic compartment of the neuron, Ca2+ is carefully regulated and is a critical regulator of synaptic function and plasticity . Neurogranin is primarily expressed in the brain and is enriched in somato-dendritic compartments of projection neurons in various regions of the brain. Postsynaptically-enriched neurogranin likely influences Ca2+ or Ca2+/calmodulin-dependent neuronal functions, including synaptic plasticity, by binding to and releasing calmodulin in a Ca2+-dependent manner. Genetic variants in the gene encoding neurogranin, NRGN, are linked to several neuropsychiatric diseases, including schizophrenia . Interestingly, increase in cerebrospinal fluid neurogranin is correlated with neurodegenerative disease progression, which suggests that neurogranin could act as a biomarker for diseases like Alzheimer's disease .

Immunogen: Recombinant protein within human Neurogranin aa 1-78 / 78.

Positive control: Mouse brain tissue lysate, mouse hippocampus tissue lysate, rat brain tissue lysate, rat hippocampus tissue lysate, rat brain tissue, mouse brain tissue, mouse hippocampus tissue.

Subcellular location: Cytoplasm.

Database links: SwissProt: Q92686 Human | P60761 Mouse | Q04940 Rat

Recommended Dilutions:

WB	1:2,000
IHC-P	1:500
IF-Tissue	1:200
IHC-Fr	1:200

Storage Buffer: PBS (pH7.4), 0.05% 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

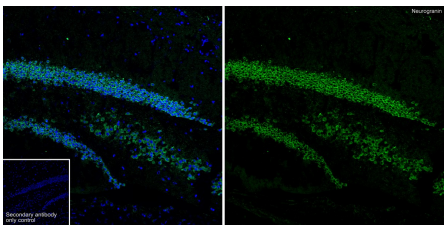

Fig1: Immunofluorescence analysis of frozen mouse hippocampus tissue with Rabbit anti-Neurogranin antibody (HA721915) at 1/200 dilution.

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 (HA721915, green) at 1/200 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).

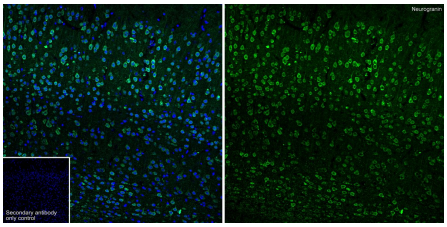

Fig2: Immunofluorescence analysis of frozen mouse brain tissue with Rabbit anti-Neurogranin antibody (HA721915) at 1/200 dilution.

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 (HA721915, green) at 1/200 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).

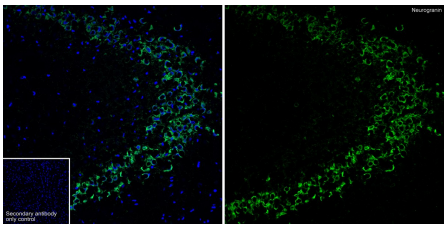

Fig3: Immunofluorescence analysis of frozen rat hippocampus tissue with Rabbit anti-Neurogranin antibody (HA721915) at 1/200 dilution. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for about 2 minutes in microwave oven. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (HA721915, green) at 1/200 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).

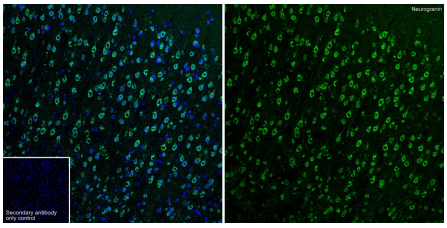

Fig4: Immunofluorescence analysis of frozen rat brain tissue with Rabbit anti-Neurogranin antibody (HA721915) at 1/200 dilution.

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 (HA721915, green) at 1/200 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).

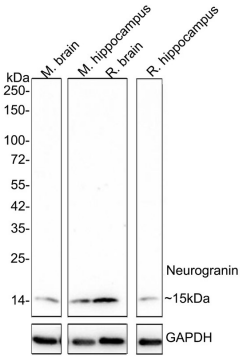

Fig5: Western blot analysis of Neurogranin on different lysates with Rabbit anti-Neurogranin antibody (HA721915) at 1/2,000 dilution.

Lane 1: Mouse brain tissue lysate
Lane 2: Mouse hippocampus tissue lysate
Lane 3: Rat brain tissue lysate
Lane 4: Rat hippocampus tissue lysate

Lysates/proteins at 30 µg/Lane.

Predicted band size: 8 kDa
Observed band size: 15 kDa

Exposure time: 3 minutes;

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 (HA721915) at 1/2,000 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.

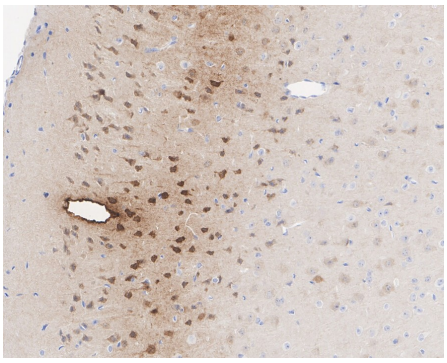

Fig6: Immunohistochemical analysis of paraffin-embedded mouse brain tissue with Rabbit anti-Neurogranin antibody (HA721915) at 1/500 dilution.

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 (HA721915) at 1/500 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.

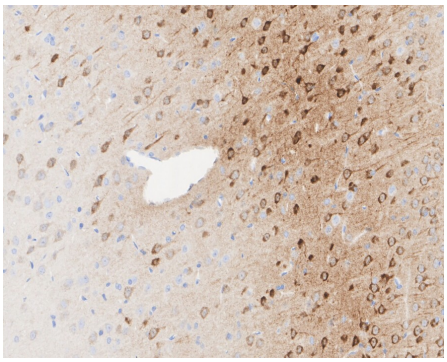

Fig7: Immunohistochemical analysis of paraffin-embedded rat brain tissue with Rabbit anti-Neurogranin antibody (HA721915) at 1/500 dilution.

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 (HA721915) at 1/500 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.

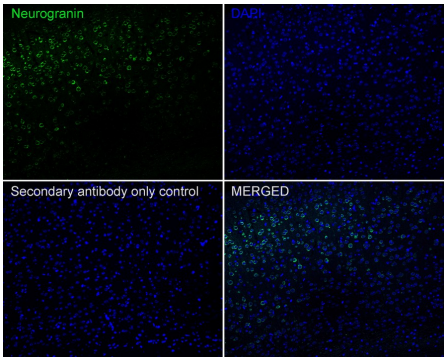

Fig8: Immunofluorescence analysis of paraffin-embedded mouse brain tissue labeling Neurogranin with Rabbit anti-Neurogranin antibody (HA721915) at 1/200 dilution.

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 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (HA721915, green) at 1/200 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).

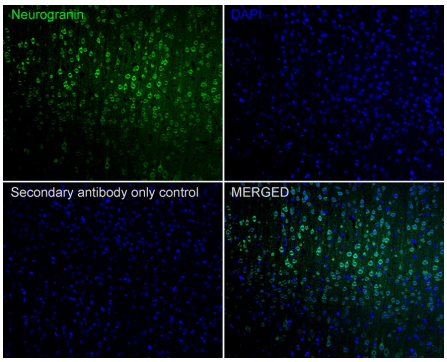

Fig9: Immunofluorescence analysis of paraffin-embedded rat brain tissue labeling Neurogranin with Rabbit anti-Neurogranin antibody (HA721915) at 1/200 dilution.

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 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (HA721915, green) at 1/200 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).

Background References

1. Willemse EAJ, De Vos A, Herries EM, Andreasson U, Engelborghs S, van der Flier WM, Scheltens P, Crimmins D, Ladenson JH, Vanmechelen E, Zetterberg H, Fagan AM, Blennow K, Bjerke M, Teunissen CE. Neurogranin as Cerebrospinal Fluid Biomarker for Alzheimer Disease: An Assay Comparison Study. Clin Chem. 2018 Jun;64(6):927-937.
2. Jin L, An Z, Xu B, Mu D, Fu S, Hu H, Shi Y, Luo X, Yi Q. The association between rs12807809 polymorphism in neurogranin gene and risk of schizophrenia: A meta-analysis. Medicine (Baltimore). 2019 Dec;98(51):e18518.