SANTA CRUZ BIOTECHNOLOGY, INC.

Neurogranin (H-6): sc-514922

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Neurogranin (formerly designated p17, also known as RC3 and BICKS) is a neuron-specific substrate for protein kinase C (PKC). Neurogranin is a post-synaptic protein that is highly enriched in brain, with restricted expression in the cortex, striatum, hippocampus, thalamus, hypothalamus and olfactory bulb nuclei. Neurogranin binds calmodulin at low levels of calcium, thereby regulating calmodulin-dependent nitric oxide synthase. Conversely, nitric oxide modifies Neurogranin, reducing its ability to bind calmodulin or to be phosphorylated by PKC. This phosphorylation site domain is adjacent to the predicted calmodulin-binding region.

REFERENCES

1. Baudier, J., et al. 1989. Protein kinase C substrates from bovine brain. Purification and characterization of Neuromodulin, a neuron-specific calmodulin-binding protein. J. Biol. Chem. 264: 1824-1828.
2. Watson, J.B., et al. 1990. Subtractive cDNA cloning of RC3, a rodent cortex-enriched mRNA encoding a novel 78 residue protein. J. Neurosci. Res. 26: 397-408.

CHROMOSOMAL LOCATION

Genetic locus: NRGN (human) mapping to 11q24.2; Nrgn (mouse) mapping to 9 A4.

SOURCE

Neurogranin (H-6) is a mouse monoclonal antibody raised against amino acids 1-50 mapping at the N-terminus of Neurogranin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

Neurogranin (H-6) is recommended for detection of Neurogranin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Neurogranin siRNA (h): sc-42074, Neurogranin siRNA (m): sc-42075, Neurogranin shRNA Plasmid (h): sc-42074-SH, Neurogranin shRNA Plasmid (m): sc-42075-SH, Neurogranin shRNA (h) Lentiviral Particles: sc-42074-V and Neurogranin shRNA (m) Lentiviral Particles: sc-42075-V.

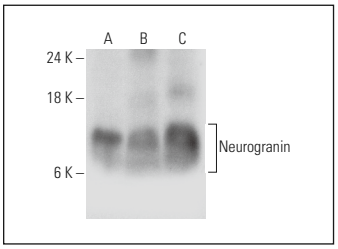
Molecular Weight of Neurogranin: 17-18 kDa.

Positive Controls: rat brain extract: sc-2392, mouse brain extract: sc-2253 or SK-N-MC cell lysate: sc-2237.

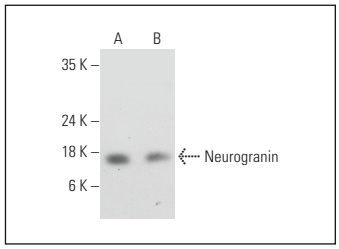
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Neurogranin (H-6): sc-514922. Western blot analysis of Neurogranin expression in mouse brain (**A**), rat brain (**B**) and human cerebral cortex (**C**) tissue extracts.



Neurogranin (H-6): sc-514922. Western blot analysis of Neurogranin expression in SK-N-MC (**A**) and H4 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Becker, B., et al. 2018. Alzheimer-associated cerebrospinal fluid fragments of Neurogranin are generated by Calpain-1 and prolyl endopeptidase. Mol. Neurodegener. 13: 47.
2. Höglund, K., et al. 2020. Cerebrospinal fluid Neurogranin in an inducible mouse model of neurodegeneration: a translatable marker of synaptic degeneration. Neurobiol. Dis. 134: 104645.
3. Mueller, A., et al. 2020. Dopamine receptor expression among local and visual cortex-projecting frontal eye field neurons. Cereb. Cortex 30: 148-164.
4. Lee, M., et al. 2020. Differences in noradrenaline receptor expression across different neuronal subtypes in macaque frontal eye field. Front. Neuroanat. 14: 574130.
5. Nazir, F.H., et al. 2021. Molecular forms of Neurogranin in cerebrospinal fluid. J. Neurochem. 157: 816-833.
6. Brown, J., et al. 2023. Tau in cerebrospinal fluid induces neuronal hyper-excitability and alters hippocampal theta oscillations. Acta Neuropathol. Commun. 11: 67.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.