

# neuroglobin (G-11): sc-133086

## BACKGROUND

Globins are a superfamily of gas-binding heme proteins that are present in bacteria, protists, fungi, plants and animals. Globins play evolutionarily divergent roles which include binding, transport, scavenging, detoxification and sensing of oxygen, nitric oxide and carbon monoxide. Neuroglobin (Ngb) is a hexacoordinate hemoglobin that is predominantly expressed in the vertebrate brain and may enhance oxygen supply to neural components. Neuroglobin displays a high affinity for oxygen and its presence in cerebral neurons suggests a role in neuronal responses to hypoxia or ischemia. For example, *in vitro* neuronal hypoxia causes an elevation in the levels of neuroglobin, which enhances neuronal cell survival. The human neuroglobin gene maps to chromosome 14q24.3 and encodes a 151 amino acid protein.

## REFERENCES

- Burmester, T., et al. 2000. A vertebrate globin expressed in the brain. *Nature* 407: 520-523.
- Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 605304. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Sun, Y., et al. 2001. Neuroglobin is up-regulated by and protects neurons from hypoxic-ischemic injury. *Proc. Natl. Acad. Sci. USA* 98: 15306-15311.
- Trent, J.T., 3rd, et al. 2001. Human neuroglobin, a hexacoordinate hemoglobin that reversibly binds oxygen. *J. Biol. Chem.* 276: 30106-30110.
- Couture, M., et al. 2001. The heme environment of mouse neuroglobin. Evidence for the presence of two conformations of the heme pocket. *J. Biol. Chem.* 276: 36377-36382.

## CHROMOSOMAL LOCATION

Genetic locus: NGB (human) mapping to 14q24.3.

## SOURCE

neuroglobin (G-11) is a mouse monoclonal antibody raised against amino acids 1-151 representing full length neuroglobin of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

neuroglobin (G-11) is available conjugated to agarose (sc-133086 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133086 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133086 PE), fluorescein (sc-133086 FITC), Alexa Fluor<sup>®</sup> 488 (sc-133086 AF488), Alexa Fluor<sup>®</sup> 546 (sc-133086 AF546), Alexa Fluor<sup>®</sup> 594 (sc-133086 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-133086 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-133086 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-133086 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

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

## APPLICATIONS

neuroglobin (G-11) is recommended for detection of neuroglobin of 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 neuroglobin siRNA (h): sc-42081, neuroglobin shRNA Plasmid (h): sc-42081-SH and neuroglobin shRNA (h) Lentiviral Particles: sc-42081-V.

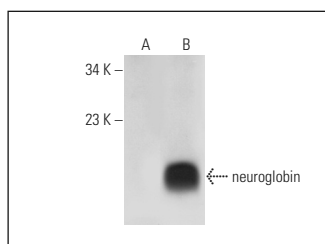
Molecular Weight of neuroglobin: 17 kDa.

Positive Controls: neuroglobin (h): 293 Lysate: sc-110715.

## 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<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



neuroglobin (G-11): sc-133086. Western blot analysis of neuroglobin expression in non-transfected: sc-110760 (A) and human neuroglobin transfected: sc-110715 (B) 293 whole cell lysates.

## SELECT PRODUCT CITATIONS

- Baez-Jurado, E., et al. 2019. Mitochondrial neuroglobin is necessary for protection induced by conditioned medium from human adipose-derived mesenchymal stem cells in astrocytic cells subjected to scratch and metabolic injury. *Mol. Neurobiol.* 56: 5167-5187.
- Wang, N., et al. 2022. Identification of novel prognostic risk signature of breast cancer based on ferroptosis-related genes. *Sci. Rep.* 12: 13766.

## STORAGE

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