

neuroglobin (E-16): sc-22001

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

1. Burmester, T., et al. 2000. A vertebrate globin expressed in the brain. *Nature* 407: 520-523.
2. 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/>
3. 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.
4. Trent, J.T., et al. 2001. Human neuroglobin, a hexacoordinate hemoglobin that reversibly binds oxygen. *J. Biol. Chem.* 276: 30106-30110.
5. 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; Ngb (mouse) mapping to 12 D2.

SOURCE

neuroglobin (E-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of neuroglobin of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose conjugate for immunoprecipitation, sc-22001 AC, 500 µg/0.25 ml agarose in 1 ml.

Blocking peptide available for competition studies, sc-22001 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

neuroglobin (E-16) is recommended for detection of neuroglobin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

neuroglobin (E-16) is also recommended for detection of neuroglobin in additional species, including equine, bovine and porcine.

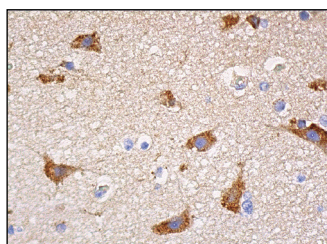
Suitable for use as control antibody for neuroglobin siRNA (h): sc-42081, neuroglobin siRNA (m): sc-42082, neuroglobin shRNA Plasmid (h): sc-42081-SH, neuroglobin shRNA Plasmid (m): sc-42082-SH, neuroglobin shRNA (h) Lentiviral Particles: sc-42081-V and neuroglobin shRNA (m) Lentiviral Particles: sc-42082-V.

Molecular Weight of neuroglobin: 17 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



neuroglobin (E-16): sc-22001. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal cells.

SELECT PRODUCT CITATIONS

1. Di Giulio, C., et al. 2006. Neuroglobin, a new oxygen binding protein is present in the carotid body and increases after chronic intermittent hypoxia. *Adv. Exp. Med. Biol.* 580: 15-19.

RESEARCH USE

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