

cytoglobin (FL-190): sc-66855

BACKGROUND

Hemoglobin, myoglobin, neuroglobin and cytoglobin belong to the globin family, porphyrin-containing proteins that function in oxygen transport and storage. Myoglobin contributes to intracellular oxygen storage and transcellular facilitated diffusion of oxygen in skeletal and cardiac muscle. Neuroglobin is an oxidative stress-responsive sensor for signal transduction in the brain. Hemoglobin contributes to oxygen storage and diffusion of oxygen in blood tissue. cytoglobin (also designated histogloblin), is a ubiquitous protein that facilitates diffusion of oxygen through tissues and acts as a scavenger for nitric oxide or other reactive oxygen species. It binds O₂ via its heme and also has a protective function during oxidative stress. cytoglobin, a hexacoordinate hemoglobin, shares less than 30% identity with other human hemoglobins and is widely expressed in a wide array of tissues including fibroblasts and nerve cell populations.

REFERENCES

1. Trent, J.T., 3rd., et al. 2002. A ubiquitously expressed human hexacoordinate hemoglobin. *J. Biol. Chem.* 277: 19538-19545.
2. Fordel, E., et al. 2004. Cytoglobin expression is upregulated in all tissues upon hypoxia: an *in vitro* and *in vivo* study by quantitative real-time PCR. *Biochem. Biophys. Res. Commun.* 319: 342-348.
3. Kugelstadt, D., et al. 2004. Neuroglobin, cytoglobin, and a novel, eye-specific globin from chicken. *Biochem. Biophys. Res. Commun.* 325: 719-725.
4. Fago, A., et al. 2004. Allosteric regulation and temperature dependence of oxygen binding in human neuroglobin and cytoglobin. *Molecular mechanisms and physiological significance.* *J. Biol. Chem.* 279: 44417-44426.
5. Weiland, T.R., et al. 2004. Bis-histidyl hexacoordination in hemoglobins facilitates heme reduction kinetics. *J. Am. Chem. Soc.* 126: 11930-11935.

CHROMOSOMAL LOCATION

Genetic locus: CYGB (human) mapping to 17q25.1; Cygb (mouse) mapping to 11 E2.

SOURCE

cytoglobin (FL-190) is a rabbit polyclonal antibody raised against amino acids 1-190 representing full length cytoglobin 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.

STORAGE

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

RESEARCH USE

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

APPLICATIONS

cytoglobin (FL-190) is recommended for detection of cytoglobin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), 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).

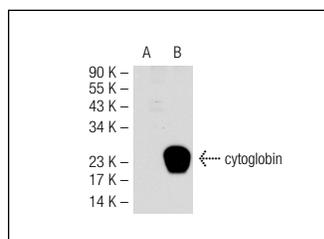
cytoglobin (FL-190) is also recommended for detection of cytoglobin in additional species, including bovine and porcine.

Suitable for use as control antibody for cytoglobin siRNA (h): sc-45547, cytoglobin siRNA (m): sc-45548, cytoglobin shRNA Plasmid (h): sc-45547-SH, cytoglobin shRNA Plasmid (m): sc-45548-SH, cytoglobin shRNA (h) Lentiviral Particles: sc-45547-V and cytoglobin shRNA (m) Lentiviral Particles: sc-45548-V.

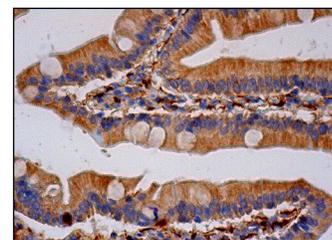
Molecular Weight of cytoglobin: 21 kDa.

Positive Controls: cytoglobin (h): 293T Lysate: sc-114314, Y79 cell lysate: sc-2240 or U-87 MG cell lysate: sc-2411.

DATA



cytoglobin (FL-190): sc-66855. Western blot analysis of cytoglobin expression in non-transfected: sc-117752 (A) and human cytoglobin transfected: sc-114314 (B) 293T whole cell lysates.



cytoglobin (FL-190): sc-66855. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Emara, M., et al. 2010. Hypoxic regulation of cytoglobin and neuroglobin expression in human normal and tumor tissues. *Cancer Cell Int.* 10: 33.
2. Beltran-Parrazal, L., et al. 2010. Neuroglobin, cytoglobin, and transcriptional profiling of hypoxia-related genes in the rat cerebellum after pre-natal chronic very mild carbon monoxide exposure (25 ppm). *Brain Res.* 1330: 61-71.
3. Hooda, J., et al. 2013. Enhanced heme function and mitochondrial respiration promote the progression of lung cancer cells. *PLoS ONE* 8: e63402.

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Try **cytoglobin (D-7): sc-365246** or **cytoglobin (G-2): sc-365247**, our highly recommended monoclonal alternatives to cytoglobin (FL-190).