

Hemoglobin α (M-17): sc-31333

BACKGROUND

Hemoglobin (Hgb) is a 66.7 kDa protein coupled to four iron-binding, methene-linked tetrapyrrole rings (heme). The α (16p13.3; 5'- ζ -pseudo ζ -pseudo α 2-pseudo α 1- α 2- α 1- θ 1-3') and β (11p15.5) globin loci determine the basic Hgb structure. The globin portion of Hgb consists of two α chains and two β chains arranged in pairs forming a tetramer. Each of the four globin chains covalently associates with a heme group. The bonds between α and β chains are weaker than between similar globin chains, thereby forming a cleavage plane that is important for oxygen binding and release. High affinity for oxygen occurs upon relaxation of the α 1- β 2 cleavage plane. When the two α 1- β 2 interfaces are closely bound, Hgb has a low affinity for oxygen. 97% of total circulating hemoglobin contains two α chains plus two β chains (Hb A). Two γ chains together with two α chains constitute fetal hemoglobin (Hb F). Two α chains plus two δ chains constitute adult hemoglobin (Hb A-2). Hb F and Hb A-2 together comprise the remaining 3% of adult hemoglobin.

REFERENCES

- Liebhaber, S.A., et al. 1981. Homology and concerted evolution at the α 1 and α 2 loci of human α -globin. *Nature* 290: 26-29.
- Goodbourn, S.E., et al. 1983. Molecular basis of length polymorphism in the human ζ -globin gene complex. *Proc. Natl. Acad. Sci. USA* 80: 5022-5026.
- Giardina, B., et al. 1995. The multiple functions of hemoglobin. *Crit. Rev. Biochem. Mol. Biol.* 30: 165-196.
- Adachi, K., et al. 2002. Assembly of human hemoglobin (Hb) β - and γ -globin chains expressed in a cell-free system with α -globin chains to form Hb A and Hb F. *J. Biol. Chem.* 277: 13415-13420.
- Feng, L., et al. 2004. Molecular mechanism of AHSP-mediated stabilization of α -hemoglobin. *Cell* 119: 629-640.
- Sudha, R., et al. 2004. Linkage of interactions in sickle hemoglobin fiber assembly: inhibitory effect emanating from mutations in the AB region of the α -chain is annulled by a mutation at its EF corner. *J. Biol. Chem.* 279: 20018-20027.

CHROMOSOMAL LOCATION

Genetic locus: HBA1 (human) mapping to 16p13.3; Hba1 (mouse) mapping to 11 A4.

SOURCE

Hemoglobin α (M-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Hemoglobin α of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-31333 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

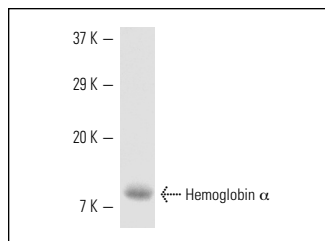
Hemoglobin α (M-17) is recommended for detection of Hemoglobin α of mouse, rat and, to a lesser extent, human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting 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 Hemoglobin α siRNA (h): sc-41230, Hemoglobin α siRNA (m): sc-41231, Hemoglobin α shRNA Plasmid (h): sc-41230-SH, Hemoglobin α shRNA Plasmid (m): sc-41231-SH, Hemoglobin α shRNA (h) Lentiviral Particles: sc-41230-V and Hemoglobin α shRNA (m) Lentiviral Particles: sc-41231-V.

Molecular Weight of Hemoglobin α : 10 kDa.

Positive Controls: mouse heart extract: sc-2254.

DATA



Hemoglobin α (M-17): sc-31333. Western blot analysis of Hemoglobin α expression in mouse heart tissue extract.

SELECT PRODUCT CITATIONS

- Voon, H.P., et al. 2008. siRNA-mediated reduction of α -globin results in phenotypic improvements in β -thalassemic cells. *Haematologica* 93: 1238-1242.
- Richter, F., et al. 2009. Neurons express hemoglobin α - and β -chains in rat and human brains. *J. Comp. Neurol.* 515: 538-547.

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.


 MONOS
Satisfaction
Guaranteed

Try **Hemoglobin α (D-4): sc-514378** or **Hemoglobin α (B-10): sc-514851**, our highly recommended monoclonal alternatives to Hemoglobin α (M-17). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Hemoglobin α (D-4): sc-514378**.