

Hemoglobin γ (B-4): sc-377395

BACKGROUND

Hemoglobin (Hgb) is 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. Hb A, which contains 2 α chains plus 2 β chains, comprises 97% of total circulating hemoglobin. The remaining 3% of total circulating hemoglobin is comprised of Hb A-2, which consists of 2 α chains plus 2 α chains, and fetal hemoglobin (Hb F), which consists of 2 α chains together 2 γ chains.

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: HBG1 (human) mapping to 11p15.4.

SOURCE

Hemoglobin γ (B-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 9-43 near the N-terminus of Hemoglobin γ of human origin.

PRODUCT

Each vial contains 200 μ g IgG₃ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-377395 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

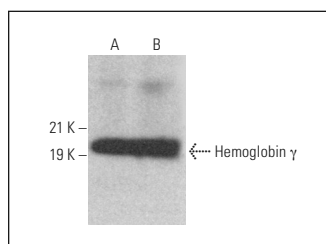
Hemoglobin γ (B-4) is recommended for detection of Hemoglobin γ of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 γ siRNA (h): sc-37108, Hemoglobin γ shRNA Plasmid (h): sc-37108-SH and Hemoglobin γ shRNA (h) Lentiviral Particles: sc-37108-V.

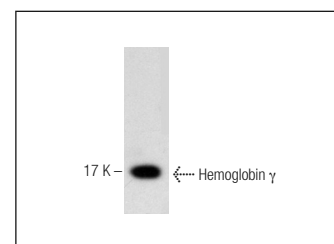
Molecular Weight of Hemoglobin γ : 18 kDa.

Positive Controls: human placenta extract: sc-363772, HEL 92.1.7 cell lysate: sc-2270 or TF-1 cell lysate: sc-2412.

DATA



Hemoglobin γ (B-4): sc-377395. Western blot analysis of Hemoglobin γ expression in human placenta (A) and human fetal heart (B) tissue extracts.



Hemoglobin γ (B-4): sc-377395. Western blot analysis of Hemoglobin γ expression in HEL 92.1.7 whole cell lysate.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.



See **Hemoglobin $\beta/\gamma/\delta/\epsilon$ (A-8): sc-390668** for Hemoglobin $\beta/\gamma/\delta/\epsilon$ antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647.