

Hemoglobin $\beta/\gamma/\delta$ (H-76): sc-21006

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 (11p15.4) 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 associate 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 two α chains plus two β chains, comprises 97% of total circulating hemoglobin. The remaining 3% of total circulating hemoglobin is comprised of Hb A-2, which consists of two α chains plus two δ chains, and fetal hemoglobin (Hb F), which consists of two α chains together with two 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.
- 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: HBB/HBD (human) mapping to 11p15.4.

SOURCE

Hemoglobin $\beta/\gamma/\delta$ (H-76) is a rabbit polyclonal antibody raised against amino acids 67-147 of Hemoglobin β of human origin.

PRODUCT

Each vial contains 200 μ g 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

Hemoglobin $\beta/\gamma/\delta$ (H-76) is recommended for detection of Hemoglobin β , γ and δ of mouse, rat and 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), 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).

Hemoglobin $\beta/\gamma/\delta$ (H-76) is also recommended for detection of Hemoglobin β , γ and δ in additional species, including canine.

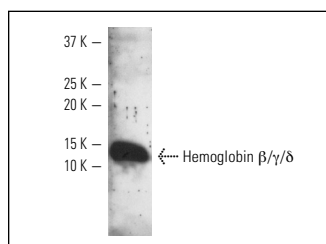
Molecular Weight of Hemoglobin $\beta/\gamma/\delta$: 16 kDa.

Positive Controls: mouse heart extract: sc-2254 or human peripheral blood lymphocyte whole cell lysate.

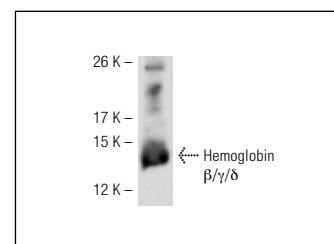
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



Hemoglobin $\beta/\gamma/\delta$ (H-76): sc-21006. Western blot analysis of Hemoglobin $\beta/\gamma/\delta$ expression in human peripheral blood lymphocyte lysate.



Hemoglobin $\beta/\gamma/\delta$ (H-76): sc-21006. Western blot analysis of Hemoglobin $\beta/\gamma/\delta$ expression in mouse heart tissue extract.

SELECT PRODUCT CITATIONS

- Tommila, M., et al. 2010. Hemoglobin expression in rat experimental granulation tissue. *J. Mol. Cell. Biol.* 3: 190-196.
- Mikonen, L., et al. 2010. Androgen receptor and androgen-dependent gene expression in lung. *Mol. Cell. Endocrinol.* 317: 14-24.
- Xiao, H., et al. 2010. Generation and characterization of human δ -globin-specific monoclonal antibodies. *Blood Cells Mol. Dis.* 44: 127-132.