

# Hemoglobin $\beta/\gamma/\delta/\epsilon$ (A-8): sc-390668

## BACKGROUND

Hemoglobin (Hgb) is a coupled to four iron-binding, methene-linked tetrapyrrole rings (heme). The  $\alpha$  (16p13.3; 5'- $\zeta$ -pseudo $\zeta$ -pseudo  $\alpha$ 2-pseudo  $\alpha$ 1- $\alpha$ 2- $\alpha$ 1- $\theta$ 1-3') and  $\beta$  (11p15.5) globin loci determine the basic Hgb structure. The globin portion of Hgb consists of two  $\alpha$  chains and two  $\beta$  chains arranged in pairs forming a tetramer. Each of the four globin chains covalently associates with a heme group. The bonds between  $\alpha$  and  $\beta$  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  $\alpha$ 1- $\beta$ 2 cleavage plane. When the two  $\alpha$ 1- $\beta$ 2 interfaces are closely bound, Hgb has a low affinity for oxygen. Hb A, which contains two  $\alpha$  chains plus two  $\beta$  chains, comprises 97% of total circulating hemoglobin. The remaining 3% of total circulating hemoglobin is comprised of Hb A-2, which consists of two  $\alpha$  chains plus two  $\alpha$  chains, and fetal hemoglobin (Hb F), which consists of two  $\alpha$  chains together two  $\gamma$  chains.

## CHROMOSOMAL LOCATION

Genetic locus: HBB/HBG1/HBG2/HBD/HBE1 (human) mapping to 11p15.4; Hbb-bs/Hbb-b2/Hbb-y (mouse) mapping to 7 E3.

## SOURCE

Hemoglobin  $\beta/\gamma/\delta/\epsilon$  (A-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 13-46 of Hemoglobin  $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $\gamma$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Hemoglobin  $\beta/\gamma/\delta/\epsilon$  (A-8) is available conjugated to agarose (sc-390668 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390668 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390668 PE), fluorescein (sc-390668 FITC), Alexa Fluor® 488 (sc-390668 AF488), Alexa Fluor® 546 (sc-390668 AF546), Alexa Fluor® 594 (sc-390668 AF594) or Alexa Fluor® 647 (sc-390668 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390668 AF680) or Alexa Fluor® 790 (sc-390668 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390668 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

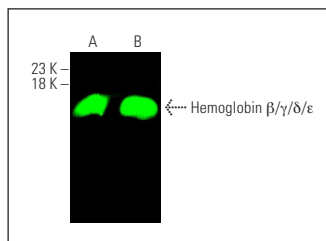
Hemoglobin  $\beta/\gamma/\delta/\epsilon$  (A-8) is recommended for detection of Hemoglobin  $\beta$ , Hemoglobin  $\gamma$ , Hemoglobin  $\delta$  and Hemoglobin  $\epsilon$  of human origin,  $\beta$ -s, Hbb-b2, and Hbb-y of mouse origin, and the corresponding rat homologs by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

Positive Controls: mouse heart extract: sc-2254 or mouse PBL tissue extract.

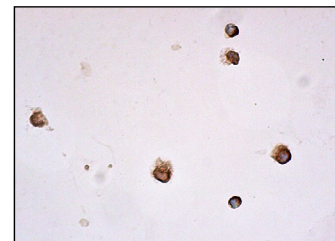
## STORAGE

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

## DATA



Hemoglobin  $\beta/\gamma/\delta/\epsilon$  (A-8): sc-390668. Near-infrared western blot analysis of Hemoglobin  $\beta/\gamma/\delta/\epsilon$  expression in mouse heart (A) and mouse PBL (B) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



Hemoglobin  $\beta/\gamma/\delta/\epsilon$  (A-8): sc-390668. Immunoperoxidase staining of formalin fixed, paraffin-embedded human peripheral blood leukocytes showing membrane and cytoplasmic staining of leukocytes.

## SELECT PRODUCT CITATIONS

1. Sato, S., et al. 2019. EPHB2 carried on small extracellular vesicles induces tumor angiogenesis via activation of ephrin reverse signaling. *JCI Insight* 4: e132447.
2. Papagiannopoulos, C.I., et al. 2021. The histone methyltransferase inhibitor A-366 enhances hemoglobin expression in erythroleukemia cells upon co-exposure with chemical inducers in culture. *J. Biol. Res.* 28: 2.
3. Papagiannopoulos, C.I., et al. 2021. MiR-16-5p promotes erythroid maturation of erythroleukemia cells by regulating ribosome biogenesis. *Pharmaceuticals* 14: 137.
4. Papagiannopoulos, C.I., et al. 2022. Invariable ribosome stoichiometry during murine erythroid differentiation: implications for understanding ribosomopathies. *Front. Mol. Biosci.* 9: 805541.
5. Khowawisetsut, L., et al. 2023. Differential effect of extracellular vesicles derived from *Plasmodium falciparum*-infected red blood cells on monocyte polarization. *Int. J. Mol. Sci.* 24: 2631.
6. Nakagawa, T., et al. 2023. Shotgun proteomics identification of proteins expressed in the Descemet's membrane of patients with Fuchs endothelial corneal dystrophy. *Sci. Rep.* 13: 10401.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA