SANTA CRUZ BIOTECHNOLOGY, INC.

Hemoglobin β (37-8): sc-21757

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Hemoglobin (Hgb) is coupled to four iron-binding, methene-linked tetrapyrrole rings (heme). The α (16p13.3; 5'-ζ-pseudoζ-pseudoα2-pseudoα1-α2-α1-θ1-3') and β (11p15.4) globin loci determine the basic Hemoglobin 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 α1-β2 cleavage plane. When the two α1-β2 interfaces are closely bound, Hemoglobin 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.

CHROMOSOMAL LOCATION

Genetic locus: HBB (human) mapping to 11p15.4.

SOURCE

Hemoglobin β (37-8) is a mouse monoclonal antibody raised against human hemoglobin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Hemoglobin β (37-8) is available conjugated to agarose (sc-21757 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-21757 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-21757 PE), fluorescein (sc-21757 FITC), Alexa Fluor® 488 (sc-21757 AF488), Alexa Fluor® 546 (sc-21757 AF546), Alexa Fluor® 594 (sc-21757 AF594) or Alexa Fluor® 647 (sc-21757 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-21757 AF680) or Alexa Fluor® 790 (sc-21757 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Hemoglobin β (37-8) is available conjugated to either PerCP (sc-21757 PerCP) or PerCP-Cy5.5 (sc-21757 PCPC5), 100 tests in 2 ml, for IF, IHC(P) and FCM.

APPLICATIONS

Hemoglobin β (37-8) is recommended for detection of Hemoglobin β of 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 flow cytometry (1 µg per 1 x 10^6 cells).

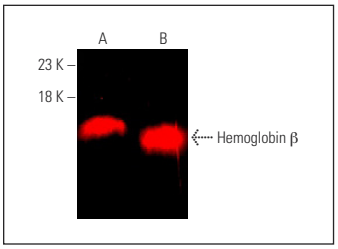
Suitable for use as control antibody for Hemoglobin β siRNA (h): sc-35558, Hemoglobin β shRNA Plasmid (h): sc-35558-SH and Hemoglobin β shRNA (h) Lentiviral Particles: sc-35558-V.

Molecular Weight of Hemoglobin β: 16 kDa.

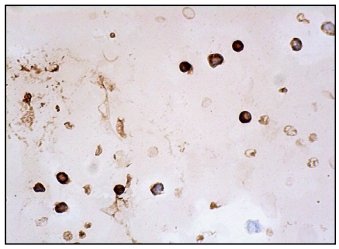
STORAGE

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

DATA



Hemoglobin β (37-8): sc-21757. Western blot analysis of Hemoglobin β expression in TF-1 (**A**) and HEL 92.1.7 (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.



Hemoglobin β (37-8): sc-21757. Immunoperoxidase staining of formalin fixed, paraffin-embedded human peripheral blood leukocytes showing membrane and cytoplasmic staining of Leukocytes.

SELECT PRODUCT CITATIONS

1. Onda, M., et al. 2005. Decreased expression of Hemoglobin β (HBB) gene in anaplastic thyroid cancer and recovery of its expression inhibits cell growth. Br. J. Cancer 92: 2216-2224.
2. Sjeklocha, L.M., et al. 2011. Erythroid-specific expression of β-globin from sleeping beauty-transduced human hematopoietic progenitor cells. PLoS ONE 6: e29110.
3. Yocum, A.O., et al. 2012. A tissue-specific chromatin loop activates the erythroid ankyrin-1 promoter. Blood 120: 3586-3593.
4. Peng, L., et al. 2013. Serum proteomics analysis and comparisons using iTRAQ in the progression of hepatitis B. Exp. Ther. Med. 6: 1169-1176.
5. Emara, M., et al. 2014. Adult, embryonic and fetal hemoglobin are expressed in human glioblastoma cells. Int. J. Oncol. 44: 514-520.
6. Durlak, M., et al. 2015. A novel high-content immunofluorescence assay as a tool to identify at the single cell level γ-globin inducing compounds. PLoS ONE 10: e0141083.
7. Wilson, M.C., et al. 2016. Comparison of the proteome of adult and cord erythroid cells, and changes in the proteome following reticulocyte maturation. Mol. Cell. Proteomics 15: 1938-1946.
8. Ponzetti, M., et al. 2017. Non-conventional role of Hemoglobin β in breast malignancy. Br. J. Cancer 117: 994-1006.
9. Chen-Roetling, J., et al. 2018. Hemopexin increases the neurotoxicity of hemoglobin when haptoglobin is absent. J. Neurochem. 145: 464-473.
10. Starlard-Davenport, A., et al. 2019. MIR29B mediates epigenetic mechanisms of HBG gene activation. Br. J. Haematol. 186: 91-100.

RESEARCH USE

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