SANTA CRUZ BIOTECHNOLOGY, INC.

Hemoglobin α (GHb2): sc-66152

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The Power to Question

BACKGROUND

Hemoglobin (Hgb) is coupled to four iron-binding, methene-linked tetrapyrrole rings (heme). The α (16p13.3; 5'-ζ-pseudoz-pseudo α2-pseudo α1-α2-α1-θ1-3') and β (11p15.5) globin loci determine the basic hemoglobin structure. The globin portion of hemoglobin 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 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 δ chains, and fetal hemoglobin (Hb F), which consists of 2 α chains together with 2 γ chains.

REFERENCES

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3. Giardina, B., et al. 1995. The multiple functions of hemoglobin. Crit. Rev. Biochem. Mol. Biol. 30: 165-196.
4. 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.
5. 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.
6. Feng, L., et al. 2004. Molecular mechanism of AHSP-mediated stabilization of α hemoglobin. Cell 119: 629-640.
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CHROMOSOMAL LOCATION

Genetic locus: HBA1 (human) mapping to 16p13.3.

SOURCE

Hemoglobin α (GHb2) is a mouse monoclonal antibody raised against N-terminal Hemoglobin α of human origin.

PRODUCT

Each vial contains 100 µg IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Hemoglobin α (GHb2) is recommended for detection of glycosylated Hemoglobin α of human origin by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with Hemoglobin A10.

Suitable for use as control antibody for Hemoglobin α siRNA (h): sc-41230, Hemoglobin α shRNA Plasmid (h): sc-41230-SH and Hemoglobin α shRNA (h) Lentiviral Particles: sc-41230-V.

Molecular Weight of Hemoglobin α: 16 kDa.

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.

CONJUGATES

See **Hemoglobin α (D-4): sc-514378** for Hemoglobin α antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.