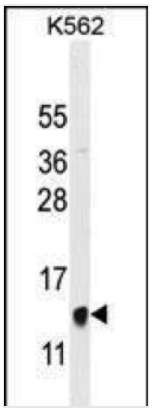
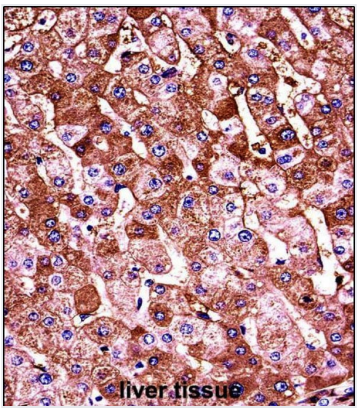
# HBB Antibody – Rabbit Polyclonal

## PRODUCT OVERVIEW

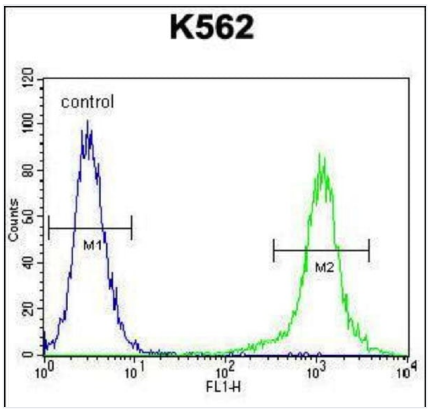
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| **Product Name** | HBB, Polyclonal Antibody |
| **Full Product Name** | HBB, CT (HBB, Hemoglobin subunit beta, Beta-globin, Hemoglobin beta chain, LVV-hemorphin-7) (Biotin) |
| **Product Gene Name** | anti-HBB antibody |
| **Product Synonym Names** | HBB; Hemoglobin subunit beta; Beta-globin; Hemoglobin beta chain; LVV-hemorphin-7 |
| **Clonality** | Polyclonal |
| **Isotype** | IgG |
| **Host** | Rabbit |
| **Species Reactivity** | Human |
| **Form/Format** | Supplied as a liquid in PBS, pH 7.2. No preservative added. Labeled with Biotin. |
| **Purity/Purification** | Purified by Protein A and Peptide Affinity Chromatography. |
| **Specificity** | Recognizes human HBB. Species Sequence Homology: bovine, chicken, equine, mouse, porcine, rat, rabbit, sheep |
| **Preparation and Storage** | Store product at 4 degree C if to be used immediately within two weeks. For long-term storage, aliquot to avoid repeated freezing and thawing and store at -20 degree C. Aliquots are stable at -20 degree C for 12 months after receipt. Dilute required amount only prior to immediate use. Further dilutions can be made in assay buffer. For maximum recovery of product, centrifuge the original vial after thawing and prior to removing the cap. |
| **Molecular Weight** | 15,998 Da |
| **OMIM** | phenotype 613985 |
| **3D Structure** | ModBase 3D Structure for P68871 |
| **Immunogen** | KLH-conjugated synthetic peptide mapping to a fragment of residues within amino acids 80-107 in the C-terminal region of human HBB, UniProt Accession #P68871. Cellular Localization: Red blood cells. |
| **Conjugate** | Biotin |
| **Note** | Preservative Free |
| **Product Categories/Family for anti-HBB antibody** | Antibodies; Hemoglobin |
| **Applications Tested/Suitable for anti-HBB antibody** | Immunohistochemistry (IHC) Paraffin, Western Blot (WB), Flow Cytometry (FC/FACS), ELISA (EIA) |
| **Application Notes for anti-HBB antibody** | Applications are based on unconjugated antibody. |
| **Related Product Information for anti-HBB antibody** | MBS6305583 is an antibody targeting HBB. Also known as HBB, CT (HBB, Hemoglobin subunit beta, Beta-globin, Hemoglobin beta chain, LVV-hemorphin-7) (Biotin). Reactive in Human. Host: Rabbit. |
| **Product References and Citations for anti-HBB antibody** | 1. Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010). 2. Zhou, D., et al. Nat. Genet. 42(9):742-744(2010). 3. Onakoya, P.A., et al. Ear Nose Throat J 89(7):306-310(2010). 4. Belisario, A.R., et al. Acta Haematol. 124(3):162-170(2010). 5. Prakobkaew, N., et al. Acta Haematol. 124(2):115-119(2010). |
| **Other Notes** | Small volumes of anti-HBB antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply. |




**Western Blot (WB) of anti-HBB antibody**
Western Blot analysis in K562 cell line lysates (35ug/lane) usingMBS648109. This demonstrates that MBS648109 detected the HBB protein (arrow).




**Immunohistochemistry (IHC) of anti-HBB antibody**
Immunohistochemistry analysis in formalin fixed and paraffin embedded human liver tissue using MBS648109 followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of MBS648109 for immunohistochemistry.




**Flow Cytometry (FC/FACS) of anti-HBB antibody**
Flow Cytometric analysis of K562 cells using MBS648109 (right histogram) compared to a negative control cell (left histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

## ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for HBB. It may not necessarily be applicable to this product.

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| **NCBI GI #** | 4504349 |
| **NCBI GeneID** | 3043 |
| **NCBI Accession #** | NP_000509.1 |
| **UniProt Primary Accession #** | P68871 |
| **UniProt Secondary Accession #** | P02023; Q13852; Q14481; Q14510; Q45KT0; Q549N7; Q6FI08; Q6R7N2; Q8IZI1; A4GX73; B2ZUE0 |
| **UniProt Related Accession #** | P68871 |
| **GenBank Nucleotide #** | NM_000518.5 |
| **NCBI Official Full Name** | hemoglobin subunit beta |
| **NCBI Official Synonym Full Names** | hemoglobin subunit beta |
| **NCBI Official Symbol** | HBB |
| **NCBI Official Synonym Symbols** | ECYT6; CD113t-C; beta-globin |
| **UniProt Protein Name** | Hemoglobin subunit beta |
| **UniProt Synonym Protein Names** | Beta-globin; Hemoglobin beta chainCleaved into the following 2 chains:LVV-hemorphin-7; Spinorphin |

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| **Protein Family** | DNA-binding protein |
| **UniProt Gene Name** | HBB |
| **UniProt Entry Name** | HBB_HUMAN |
| **NCBI Protein Information** | hemoglobin subunit beta |
| **NCBI Summary for HBB** | The alpha (HBA) and beta (HBB) loci determine the structure of the 2 types of polypeptide chains in adult hemoglobin, Hb A. The normal adult hemoglobin tetramer consists of two alpha chains and two beta chains. Mutant beta globin causes sickle cell anemia. Absence of beta chain causes beta-zero-thalassemia. Reduced amounts of detectable beta globin causes beta-plus-thalassemia. The order of the genes in the beta-globin cluster is 5'-epsilon -- gamma-G -- gamma-A -- delta -- beta--3'. [provided by RefSeq, Jul 2008] |
| **UniProt Comments for HBB** | HBB: Involved in oxygen transport from the lung to the various peripheral tissues. Defects in HBB may be a cause of Heinz body anemias (HEIBAN). This is a form of non-spherocytic hemolytic anemia of Dacie type 1. After splenectomy, which has little benefit, basophilic inclusions called Heinz bodies are demonstrable in the erythrocytes. Before splenectomy, diffuse or punctate basophilia may be evident. Most of these cases are probably instances of hemoglobinopathy. The hemoglobin demonstrates heat lability. Heinz bodies are observed also with the Ivemark syndrome (asplenia with cardiovascular anomalies) and with glutathione peroxidase deficiency. Defects in HBB are the cause of beta-thalassemia (B-THAL). A form of thalassemia. Thalassemias are common monogenic diseases occurring mostly in Mediterranean and Southeast Asian populations. The hallmark of beta-thalassemia is an imbalance in globin-chain production in the adult HbA molecule. Absence of beta chain causes beta(0)-thalassemia, while reduced amounts of detectable beta globin causes beta(+)-thalassemia. In the severe forms of beta-thalassemia, the excess alpha globin chains accumulate in the developing erythroid precursors in the marrow. Their deposition leads to a vast increase in erythroid apoptosis that in turn causes ineffective erythropoiesis and severe microcytic hypochromic anemia. Clinically, beta-thalassemia is divided into thalassemia major which is transfusion dependent, thalassemia intermedia (of intermediate severity), and thalassemia minor that is asymptomatic. Defects in HBB are the cause of sickle cell anemia (SKCA); also known as sickle cell disease. Sickle cell anemia is characterized by abnormally shaped red cells resulting in chronic anemia and periodic episodes of pain, serious infections and damage to vital organs. Normal red blood cells are round and flexible and flow easily through blood vessels, but in sickle cell anemia, the abnormal hemoglobin (called Hb S) causes red blood cells to become stiff. They are C-shaped and resembles a sickle. These stiffer red blood cells can led to microvascular occlusion thus cutting off the blood supply to nearby tissues. Defects in HBB are the cause of beta-thalassemia dominant inclusion body type (B-THALIB). An autosomal dominant form of beta thalassemia characterized by moderate anemia, lifelong jaundice, cholelithiasis and splenomegaly, marked morphologic changes in the red cells, erythroid hyperplasia of the bone marrow with increased numbers of multinucleate red cell precursors, and the presence of large inclusion bodies in the normoblasts, both in the marrow and in the peripheral blood after splenectomy. Belongs to the globin family.<br><br>Protein type: Carrier<br><br>Chromosomal Location of Human Ortholog: 11p15.5<br><br>Cellular Component: hemoglobin complex; extracellular region; cytosol<br><br>Molecular Function: haptoglobin binding; protein binding; peroxidase activity; hemoglobin binding; iron ion binding; heme binding; oxygen binding; oxygen transporter activity<br><br>Biological Process: receptor-mediated endocytosis; positive regulation of nitric oxide biosynthetic process; nitric oxide transport; response to hydrogen peroxide; oxygen transport; protein heterooligomerization; bicarbonate transport; hydrogen peroxide catabolic process; regulation of blood pressure; blood coagulation; regulation of blood vessel size<br><br>Disease: Fetal Hemoglobin Quantitative Trait Locus 1; Beta-thalassemia; Sickle Cell Anemia; Heinz Body Anemias; Beta-thalassemia, Dominant Inclusion Body Type; Malaria, Susceptibility To; Alpha-thalassemia |
| **Research Articles on HBB** | **1.** Studies indicate that beta-thalassemia and sickle cell disease (SCD) are both caused by mutations affecting the adult beta-globin gene. |
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