abcam

Product datasheet

Human Hemoglobin subunit alpha ELISA Kit ab219049

Recombinant SimpleStep ELISA

9 Images

Overview

Product name Human Hemoglobin subunit alpha ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Overall	5			3.6%

Inter-assay

Sample	n	Mean	SD	CV%
Overall	3			14.2%

Sample type Cell culture supernatant, Serum, Hep Plasma, EDTA Plasma, Cit plasma, Cerebral Spinal Fluid

Assay type Sandwich (quantitative)

Sensitivity 131 pg/ml

Range 588 pg/ml - 20000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	96	84% - 100%
Whole Blood	101	81% - 115%
Hep Plasma	93	82% - 100%
EDTA Plasma	94	91% - 98%
Cerebral Spinal Fluid	104	99% - 109%
serum free media	88	91% - 94%

Assay time	1h 30m
Assay duration	One step assay
Species reactivity	**Reacts with:** Human
Product overview	Human Hemoglobin subunit alpha ELISA Kit (ab219049) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Hemoglobin subunit alpha protein in cerebral spinal fluid, cit plasma, edta plasma, hep plasma, serum, and cell culture supernatant. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human Hemoglobin subunit alpha with 131 pg/ml sensitivity. SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits: - Single-wash protocol reduces assay time to 90 minutes or less - High sensitivity, specificity and reproducibility from superior antibodies - Fully validated in biological samples - 96-wells plate breakable into 12 x 8 wells strips A 384-well SimpleStep ELISA® microplate (**ab203359**) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.
Notes	Hemoglobin (Haemoglobin) subunits combine to form the quaternary structure of total hemoglobin, the oxygen carrying protein in red blood cells. In normal adults hemoglobin consists of 2 alpha and 2 beta subunits. Hemoglobin alpha subunit can be modified by the glucose on the terminal valine of beta subunits resulting in the Hemoglobin A1C molecule. The resulting A1C molecule is used to measure the average glucose levels in blood over time. ab219049 measures the total Hemoglobin and can recognize both the alpha subunit and A1C modified protein.
Platform	Pre-coated microplate (12 x 8 well strips)

Properties

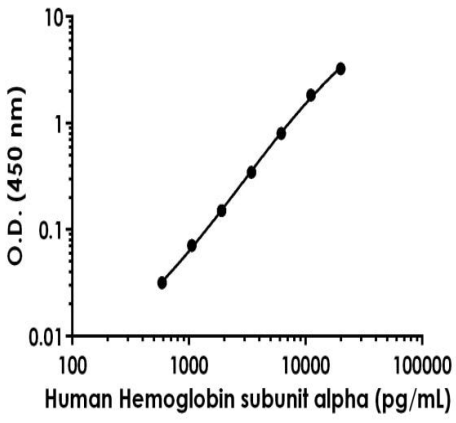
Storage instructions	Store at +4°C. Please refer to protocols.

Components	**1 x 96 tests**
10X Human Hemoglobin subunit alpha Capture Antibody	1 x 600µl
10X Human Hemoglobin subunit alpha Detector Antibody	1 x 600µl
Human Hemoglobin Lyophilized Purified Protein	2 vials
Antibody Diluent CPI - HAMA Blocker (ab193969)	1 x 6ml
10X Wash Buffer PT (ab206977)	1 x 20ml
TMB Development Solution	1 x 12ml

Components	1 x 96 tests
Stop Solution	1 x 12ml
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Plate Seals	1 unit

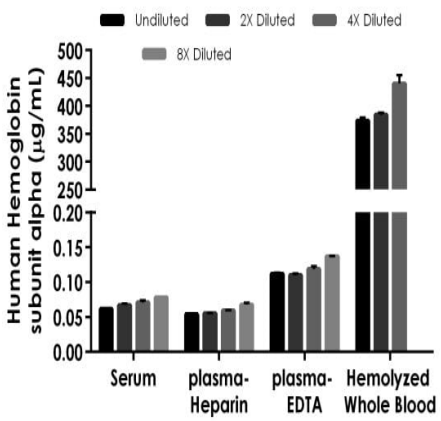
Function	Involved in oxygen transport from the lung to the various peripheral tissues.
Tissue specificity	Red blood cells.
Involvement in disease	Heinz body anemias Alpha-thalassemia Alpha(0)-thalassemia is associated with non-immune hydrops fetalis, a generalized edema of the fetus with fluid accumulation in the body cavities due to non-immune causes. Non-immune hydrops fetalis is not a diagnosis in itself but a symptom, a feature of many genetic disorders, and the end-stage of a wide variety of disorders. Hemoglobin H disease
Sequence similarities	Belongs to the globin family.
Post-translational modifications	The initiator Met is not cleaved in variant Thionville and is acetylated.

Images



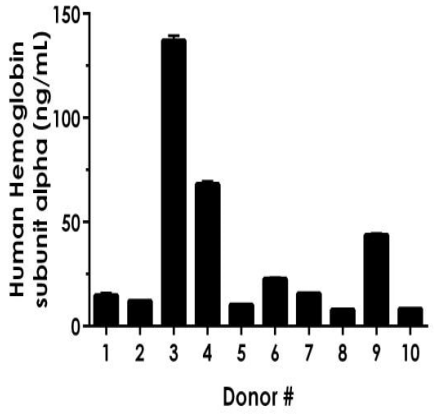
Example of Human Hemoglobin subunit alpha standard curve.

Background-subtracted data values (mean +/- SD) are graphed.



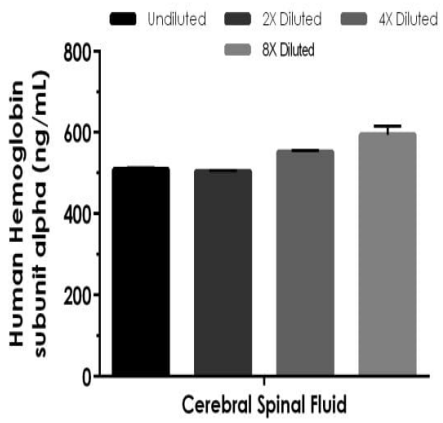
Interpolated concentrations of native Hemoglobin subunit alpha in human serum, plasma, and hemolyzed whole blood samples.

The concentrations of Hemoglobin subunit alpha were measured in duplicates, interpolated from the Hemoglobin standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 25%, plasma (heparin) 25%, plasma (EDTA) 12.5%, and whole blood 1:80,000 . The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Hemoglobin subunit alpha concentration was determined to be 0.07 µg/mL in serum, 0.06 µg/mL in plasma (heparin), 0.11 µg/mL in plasma (EDTA), and 400µg/mL in whole blood.



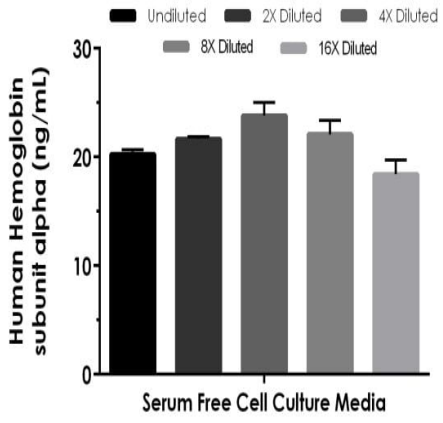
Serum from ten individual healthy human male donors was measured in duplicate.

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Hemoglobin subunit alpha concentration was determined to be 34 ng/mL with a range of 8 – 137 ng/mL.



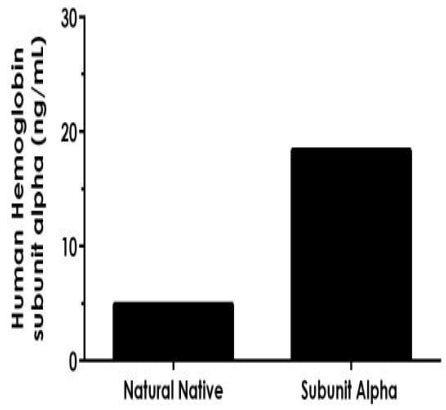
Interpolated concentrations of native Hemoglobin subunit alpha in human cerebral spinal fluid sample.

The concentrations of Hemoglobin subunit alpha were measured in duplicates, interpolated from the Hemoglobin standard curves and corrected for sample dilution. Undiluted samples are as follows: Cerebral spinal fluid 6.25%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Hemoglobin subunit alpha concentration was determined to be 540 ng/mL in cerebral spinal fluid.



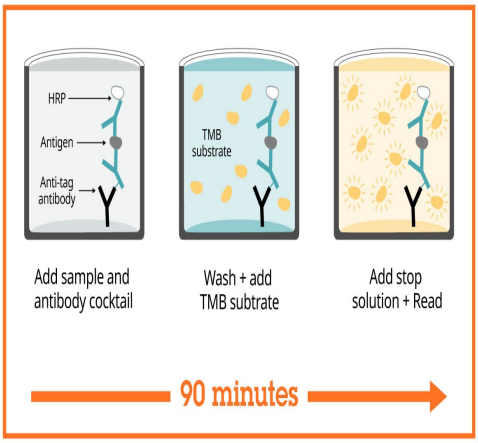
Interpolated concentrations of spike Hemoglobin subunit alpha in serum free cell culture media sample.

The concentrations of Hemoglobin subunit alpha were measured in duplicates, interpolated from the Hemoglobin standard curves and corrected for sample dilution. Undiluted samples are as follows: Serum free cell culture media 25%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).



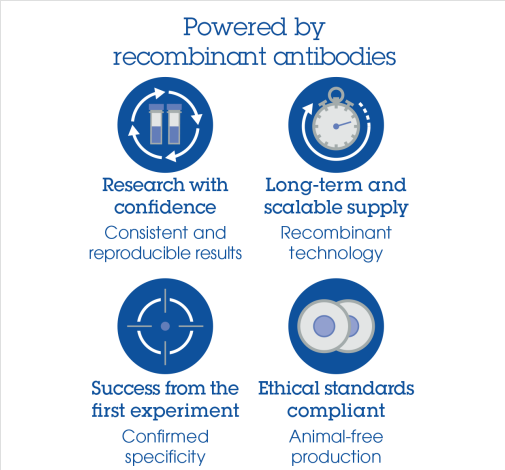
Interpolated concentrations of Natural Native Hemoglobin protein standard and hemoglobin subunit alpha recombinant protein.

Each protein was loaded at 5ng/mL and interpolated off the hemoglobin standard curve. The interpolated values are plotted (mean +/- SD, n=2). The observed 4-fold difference is expected, due to the size difference between the alpha subunit and the whole molecule.



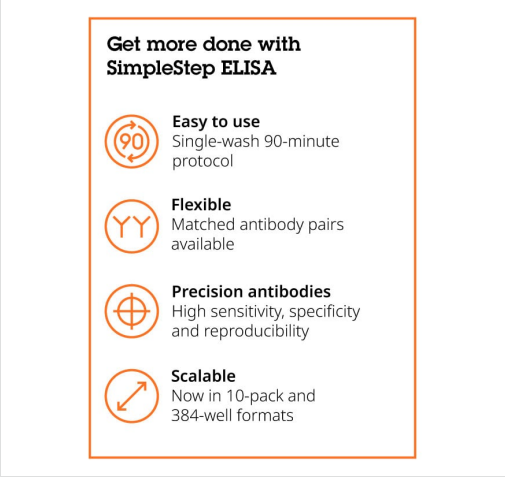
Sandwich ELISA - Human Hemoglobin subunit alpha ELISA Kit (ab219049)

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



Sandwich ELISA - Human Hemoglobin subunit alpha ELISA Kit (ab219049)

To learn more about the advantages of recombinant antibodies see **here**.



Sandwich ELISA - Human Hemoglobin subunit alpha ELISA Kit (ab219049)

To learn more about the advantages of SimpleStep ELISA® kits see **here**.

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