Human Growth Hormone ELISA Kit ab190811

Overview

Product name: Human Growth Hormone ELISA Kit
Detection method: Colorimetric

Precision

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>serum</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>serum</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample type: Cell culture supernatant, Milk, Urine, Serum, Hep Plasma, EDTA Plasma, Cit plasma
Assay type: Sandwich (quantitative)
Sensitivity: 1.6 pg/ml
Range: 9.4 pg/ml - 600 pg/ml
Recovery: Sample specific recovery

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>94</td>
<td>91% - 100%</td>
</tr>
<tr>
<td>Urine</td>
<td>112</td>
<td>107% - 119%</td>
</tr>
<tr>
<td>Serum</td>
<td>103</td>
<td>97% - 109%</td>
</tr>
<tr>
<td>Cell culture media</td>
<td>93</td>
<td>90% - 98%</td>
</tr>
<tr>
<td>Hep Plasma</td>
<td>97</td>
<td>94% - 99%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>93</td>
<td>87% - 98%</td>
</tr>
<tr>
<td>Sample type</td>
<td>Average %</td>
<td>Range</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>Cit plasma</td>
<td>97</td>
<td>92% - 102%</td>
</tr>
</tbody>
</table>

**Assay time**  
1h 30m

**Assay duration**  
One step assay

**Species reactivity**  
Reacts with: Human  
Does not react with: Cow

**Product overview**  
As of March 1, 2019, Human Growth Hormone ELISA kit has been re-developed. We have identified new recombinant monoclonal antibodies to provide improved performance and consistency.

Human Growth Hormone ELISA Kit (ab190811) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Growth Hormone protein in cell culture supernatant, cit plasma, edta plasma, hep plasma, milk, serum, and urine. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human Growth Hormone with 1.6 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**  
Growth Hormone (also known as GH, GH1, Somatotropin and Pituitary growth hormone) is a circulations hormone that plays an important role in somatic growth control. Growth Hormone binds to the Growth Hormone Receptor present in a variety of tissues and induces signaling cascades. Growth Hormone secretion is controlled positively and negatively by other hormones, including Ghrelin and Somatostatin. Overproduction of Growth Hormone can result in gigantism whereas deficiency can contribute to dwarfism.

**Platform**  
Pre-coated microplate (12 x 8 well strips)

**Properties**

**Storage instructions**  
Store at +4°C. Please refer to protocols.
Function
Plays an important role in growth control. Its major role in stimulating body growth is to stimulate the liver and other tissues to secrete IGF-1. It stimulates both the differentiation and proliferation of myoblasts. It also stimulates amino acid uptake and protein synthesis in muscle and other tissues.

Involvement in disease
Defects in GH1 are a cause of growth hormone deficiency isolated type 1A (IGHD1A) [MIM:262400]; also known as pituitary dwarfism I. IGHD1A is an autosomal recessive deficiency of GH which causes short stature. IGHD1A patients have an absence of GH with severe dwarfism and often develop anti-GH antibodies when given exogenous GH.
Defects in GH1 are a cause of growth hormone deficiency isolated type 1B (IGHD1B) [MIM:612781]; also known as dwarfism of Sindh. IGHD1B is an autosomal recessive deficiency of GH which causes short stature. IGHD1B patients have low but detectable levels of GH. Dwarfism is less severe than in IGHD1A and patients usually respond well to exogenous GH.
Defects in GH1 are the cause of Kowarski syndrome (KWKS) [MIM:262650]; also known as pituitary dwarfism VI.
Defects in GH1 are a cause of growth hormone deficiency isolated type 2 (IGHD2) [MIM:173100]. IGHD2 is an autosomal dominant deficiency of GH which causes short stature. Clinical severity is variable. Patients have a positive response and immunologic tolerance to growth hormone therapy.

Sequence similarities
Belongs to the somatotropin/prolactin family.

Cellular localization
Secreted.

Components
<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Human Growth Hormone Capture Antibody</td>
<td>1 x 96 tests</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Human Growth Hormone Detector Antibody</td>
<td>1 x 96 tests</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Wash Buffer PT (ab206977)</td>
<td>1 x 96 tests</td>
<td>1 x 20ml</td>
</tr>
<tr>
<td>Antibody Diluent 4BI</td>
<td>1 x 96 tests</td>
<td>1 x 6ml</td>
</tr>
<tr>
<td>Human Growth Hormone Lyophilized Recombinant Protein</td>
<td>1 x 96 tests</td>
<td>2 vials</td>
</tr>
<tr>
<td>Plate Seals</td>
<td>1 x 96 tests</td>
<td>1 unit</td>
</tr>
<tr>
<td>Sample Diluent NS (ab193972)</td>
<td>1 x 96 tests</td>
<td>1 x 50ml</td>
</tr>
<tr>
<td>SimpleStep Pre-Coated 96-Well Microplate (ab206978)</td>
<td>1 x 96 tests</td>
<td>1 unit</td>
</tr>
<tr>
<td>Stop Solution</td>
<td>1 x 96 tests</td>
<td>1 x 12ml</td>
</tr>
<tr>
<td>TMB Development Solution</td>
<td>1 x 96 tests</td>
<td>1 x 12ml</td>
</tr>
</tbody>
</table>

Images
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.

Standard Curve comparison between human Growth Hormone SimpleStep ELISA kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows increased sensitivity.

Standard Curve comparison between human Growth Hormone new SimpleStep ELISA kit and previous ELISA kit. The new SimpleStep ELISA kit shows increased sensitivity.
The Growth Hormone standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.

The concentrations of Growth Hormone were measured in duplicates, interpolated from the Growth Hormone standard curves and corrected for sample dilution. Undiluted samples are as follows: mixed gender serum 100% and pregnant serum 10%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Growth Hormone concentration was determined to be 203.3 pg/mL in neat pooled mixed gender serum and 5,327 pg/mL in neat pooled pregnant female serum.

The concentrations of Growth Hormone were measured in duplicates, interpolated from the Growth Hormone standard curves and corrected for sample dilution. Undiluted samples are as follows: plasma (citrate) 50%, plasma (heparin) 50%, and plasma (EDTA) 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Growth Hormone concentration was determined to be 309.0 pg/mL in neat plasma (citrate), 329.1 pg/mL in neat plasma (heparin), and 120 pg/mL in neat plasma (EDTA).
Serum from nine individual healthy human male and female donors was measured in duplicate.

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).

Please note: All products are “FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES”

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit https://www.abcam.com/abpromise or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors