Human Insulin ELISA Kit ab100578

Overview

Product name: Human Insulin ELISA Kit
Detection method: Colorimetric
Sample type: Cell culture supernatant, Serum, Plasma
Assay type: Sandwich (quantitative)
Sensitivity: < 4 µU/ml
Range: 4.69 µU/ml - 300 µU/ml
Recovery: 89%

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell culture supernatant</td>
<td>76.16</td>
<td>68% - 88%</td>
</tr>
<tr>
<td>Serum</td>
<td>91.4</td>
<td>83% - 102%</td>
</tr>
<tr>
<td>Plasma</td>
<td>99.03</td>
<td>73% - 128%</td>
</tr>
</tbody>
</table>

Assay duration: Multiple steps standard assay
Species reactivity: Reacts with: Mouse, Rat, Human, Pig
Predicted to work with: Cow

Product overview

Abcam’s Human Insulin ELISA (Enzyme-Linked Immunosorbent Assay) kit is an in vitro enzyme-linked immunosorbent assay for the quantitative measurement of Human Insulin and Proinsulin in serum, plasma, cell culture supernatants.

This assay employs an antibody specific for Human Insulin coated on a 96-well plate. Standards and samples are pipetted into the wells and Insulin present in a sample is bound to the wells by the immobilized antibody. The wells are washed and biotinylated anti-Human Insulin antibody is added. After washing away unbound biotinylated antibody, HRP-conjugated streptavidin is pipetted to the wells. The wells are again washed, a TMB substrate solution is added to the wells and color develops in proportion to the amount of Insulin bound. The Stop Solution changes the color from blue to yellow, and the intensity of the color is measured at 450 nm.

This kit detects both insulin and proinsulin.
Get higher sensitivity in only 90 minutes with Human Insulin ELISA Kit (ab200011) from our SimpleStep ELISA® range.

Notes
Optimization may be required with urine samples.

Tested applications
Suitable for: Sandwich ELISA

Platform
Microplate

Properties

Storage instructions
Store at -20°C. Please refer to protocols.

<table>
<thead>
<tr>
<th>Components</th>
<th>1 x 96 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>20X Wash Buffer Concentrate</td>
<td>1 x 25ml</td>
</tr>
<tr>
<td>500X HRP-Streptavidin Concentrate</td>
<td>1 x 200µl</td>
</tr>
<tr>
<td>5X Assay Diluent B</td>
<td>1 x 15ml</td>
</tr>
<tr>
<td>Assay Diluent A</td>
<td>1 x 30ml</td>
</tr>
<tr>
<td>Biotinylated anti-Human Insulin (lyophilized)</td>
<td>2 vials</td>
</tr>
<tr>
<td>Insulin Microplate (12 strips x 8 wells)</td>
<td>1 unit</td>
</tr>
<tr>
<td>Recombinant Human Insulin Standard (lyophilized)</td>
<td>2 vials</td>
</tr>
<tr>
<td>Stop Solution</td>
<td>1 x 8ml</td>
</tr>
<tr>
<td>TMB One-Step Substrate Reagent</td>
<td>1 x 12ml</td>
</tr>
</tbody>
</table>

Function
Insulin decreases blood glucose concentration. It increases cell permeability to monosaccharides, amino acids and fatty acids. It accelerates glycolysis, the pentose phosphate cycle, and glycogen synthesis in liver.

Involvement in disease
Defects in INS are the cause of familial hyperproinsulinemia (FHPRI) [MIM:176730].
Defects in INS are a cause of diabetes mellitus insulin-dependent type 2 (IDDM2) [MIM:125852].
IDDM2 is a multifactorial disorder of glucose homeostasis that is characterized by susceptibility to ketoacidosis in the absence of insulin therapy. Clinical features are polydipsia, polyphagia and polyuria which result from hyperglycemia-induced osmotic diuresis and secondary thirst. These derangements result in long-term complications that affect the eyes, kidneys, nerves, and blood vessels.
Defects in INS are a cause of diabetes mellitus permanent neonatal (PNDM) [MIM:606176]. PNDM is a rare form of diabetes distinct from childhood-onset autoimmune diabetes mellitus type 1. It is characterized by insulin-requiring hyperglycemia that is diagnosed within the first months of life. Permanent neonatal diabetes requires lifelong therapy.
Defects in INS are a cause of maturity-onset diabetes of the young type 10 (MODY10) [MIM:613370]. MODY10 is a form of diabetes that is characterized by an autosomal dominant mode of inheritance, onset in childhood or early adulthood (usually before 25 years of age), a primary defect in insulin secretion and frequent insulin-independence at the beginning of the disease.
Sequence similarities
Belongs to the insulin family.

Cellular localization
Secreted.

Applications

Our Abpromise guarantee covers the use of ab100578 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandwich ELISA</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
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</table>

Images

Human Insulin measured in cell culture supernatants showing quantity (µIU) per mL of tested sample. Samples diluted 1-2 fold.

Human Insulin measured in biological fluids showing quantity (µIU) per mL of tested sample. Samples diluted 1-6 fold.
Human Insulin standard curve: mean of duplicates (± SD), performed in Diluent A

Representative Standard Curve using ab100578.

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