abcam

Product datasheet

Human GLP1 (7-36) ELISA Kit, Fluorescent ab229413

CatchPoint® SimpleStep ELISA®

3 Images

Overview

Product name	Human GLP1 (7-36) ELISA Kit, Fluorescent
Detection method	Fluorescent
Precision	

Intra-assay

Sample	n	Mean	SD	CV%
human serum	8			7%

Inter-assay

Sample	n	Mean	SD	CV%
human serum	3			9%

Sample type	Cell culture supernatant, Serum, Heparin Plasma, Citrate Plasma
Assay type	Sandwich (quantitative)
Sensitivity	12 pg/ml
Range	14.6 pg/ml - 1000 pg/ml
Recovery	

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	99	93% - 102%
Serum	109	105% - 112%
Heparin Plasma	110	104% - 112%
Citrate Plasma	115	107% - 123%

Assay time	1h 30m
Assay duration	One step assay
Species reactivity	**Reacts with:** Human

Predicted to work with: Mouse, Rat, Sheep, Rabbit, Horse, Cow, Pig ⚠

Product overview

GLP-1 (7-36) *in vitro* CatchPoint SimpleStep ELISA (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of GLP-1 (7-36) protein in human serum, plasma, and cell culture supernatants.

This CatchPoint SimpleStep ELISA kit has been **optimized for Molecular Devices Microplate Readers**. Click here for a list of recommended Microplate Readers.
If using a Molecular Devices' plate reader supported by SoftMax® Pro software, a preconfigured protocol for these CatchPoint SimpleStep ELISA Kits is available with all the protocol and analysis settings at www.softmaxpro.org.

The CatchPoint SimpleStep ELISA employs an affinity tag labeled capture antibody and a reporter conjugated detector antibody which immunocapture the sample analyte in solution. This entire complex (capture antibody/analyte/detector antibody) is in turn immobilized via immunoaffinity of an anti-tag antibody coating the well. To perform the assay, samples or standards are added to the wells, followed by the antibody mix. After incubation, the wells are washed to remove unbound material. CatchPoint HRP Development Solution containing the Stoplight Red Substrate is added. During incubation, the substrate is catalyzed by HRP generating a fluorescent product. Signal is generated proportionally to the amount of bound analyte and the intensity is measured in a fluorescence plater reader at 530/570/590 nm Excitation/Cutoff/Emission.

Notes

GLP-1 (Glucagon like peptide 1) is part of the group of incretin hormones that are secreted by the gastrointestinal tract in response to food intake to assist glucose stimulated insulin secretion and glucagon suppression. GLP-1 is a 30 aminoacid peptide cleaved from proglucagon and released by the L-cells of the distal ileum. The intracellular precursor of GLP-1 (1-37) is cleaved to form the active peptides GLP-1 (7-37) and GLP-1 (7-36)NH_2. The active peptides bind to the GLP-1 receptor (GLP-1r) expressed in the pancreatic beta cell and are quickly metabolized by the enzyme dipeptidyl peptidase IV (DPP-IV) to form the peptide GLP-1 (9-36), which has no insulin stimulating activity. Binding of active GLP-1 to the receptor, increases cAMP levels and potentiates insulin secretion via Protein Kinase A (PKA) and the cAMP-regulated nucleotide exchange factor (Epac2). GLP-1 and its receptor are also suggested to play a role in the central nervous systems as mediators of satiety. Intracerebroventricular GLP-1 has been shown to induce c-FOS activity in the hypothalamus and the central nucleus of the amygdala, both of which are important in the regulation of appetite.

The role of GLP-1 in chronic diseases is controversial. Patients with type-II diabetes as well as morbidly obese subjects have been shown to have lower secretion of post-prandial GLP-1, which improves with treatment or weight loss. Due to the beneficial effects of active GLP-1 as well as GLP-1r agonists in metabolic diseases, GLP-1 has been proposed to be an effective therapeutic approach to lowering glycemic levels and decreasing body fat content. Furthermore, GLP-1 has been found to be cardioprotective during acute myocardial infarction. In contrast with the GLP-1 protective findings, circulating GLP-1 has also been found to positively correlate with serum triclycerides and high levels are significantly associated with coronary plaque burden in patients receiving coronary CT-angiography.

Tested applications

Suitable for: Sandwich ELISA

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
100X Stoplight Red Substrate	1 x 120µl
10X Human GLP1 (7-36) Capture Antibody	1 x 600µl
10X Human GLP1 (7-36) Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
500X Hydrogen Peroxide (H2O2, 3%)	1 x 50µl
Antibody Diluent CPI	1 x 6ml
Human GLP1 Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS	1 x 50ml
SimpleStep Pre-Coated Black 96-Well Microplate	1 unit
Stoplight Red Substrate Buffer	1 x 12ml

Function	Glucagon plays a key role in glucose metabolism and homeostasis. Regulates blood glucose by increasing gluconeogenesis and decreasing glycolysis. A counterregulatory hormone of insulin, raises plasma glucose levels in response to insulin-induced hypoglycemia. Plays an important role in initiating and maintaining hyperglycemic conditions in diabetes.
	GLP-1 is a potent stimulator of glucose-dependent insulin release. Play important roles on gastric motility and the suppression of plasma glucagon levels. May be involved in the suppression of satiety and stimulation of glucose disposal in peripheral tissues, independent of the actions of insulin. Have growth-promoting activities on intestinal epithelium. May also regulate the hypothalamic pituitary axis (HPA) via effects on LH, TSH, CRH, oxytocin, and vasopressin secretion. Increases islet mass through stimulation of islet neogenesis and pancreatic beta cell proliferaton. Inhibits beta cell apoptosis.
	GLP-2 stimulates intestinal growth and up-regulates villus height in the small intestine, concomitant with increased crypt cell proliferation and decreased enterocyte apoptosis. The gastrointestinal tract, from the stomach to the colon is the principal target for GLP-2 action. Plays a key role in nutrient homeostasis, enhancing nutrient assimilation through enhanced gastrointestinal function, as well as increasing nutrient disposal. Stimulates intestinal glucose transport and decreases mucosal permeability.
	Oxyntomodulin significantly reduces food intake. Inhibits gastric emptying in humans. Suppression of gastric emptying may lead to increased gastric distension, which may contribute to satiety by causing a sensation of fullness.
	Glicentin may modulate gastric acid secretion and the gastro-pyloro-duodenal activity. May play an important role in intestinal mucosal growth in the early period of life.
Tissue specificity	Glucagon is secreted in the A cells of the islets of Langerhans. GLP-1, GLP-2, oxyntomodulin and glicentin are secreted from enteroendocrine cells throughout the gastrointestinal tract. GLP1 and GLP2 are also secreted in selected neurons in the brain.
Sequence similarities	Belongs to the glucagon family.

Post-translational modifications	Proglucagon is post-translationally processed in a tissue-specific manner in pancreatic A cells and intestinal L cells. In pancreatic A cells, the major bioactive hormone is glucagon cleaved by PCSK2/PC2. In the intestinal L cells PCSK1/PC1 liberates GLP-1, GLP-2, glicentin and oxyntomodulin. GLP-1 is further N-terminally truncated by post-translational processing in the intestinal L cells resulting in GLP-1(7-37) GLP-1-(7-36)amide. The C-terminal amidation is neither important for the metabolism of GLP-1 nor for its effects on the endocrine pancreas.
Cellular localization	Secreted.

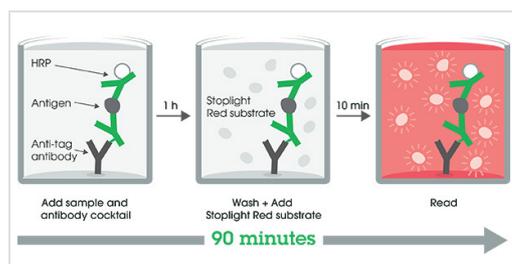## Applications

Our Abpromise guarantee covers the use of **ab229413** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

| Application	Abreviews	Notes
Sandwich ELISA		Use at an assay dependent concentration.

Images

Other - Human GLP1 (7-36) ELISA Kit, Fluorescent (ab229413)

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.
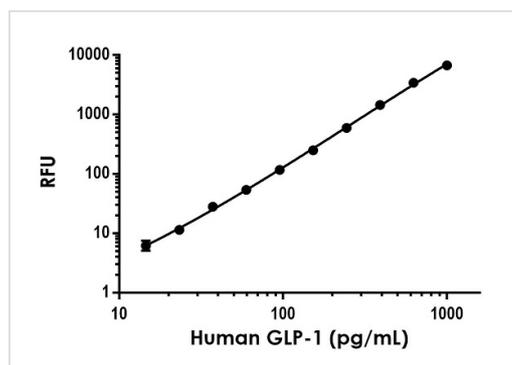
Example of human GLP-1 (7-36) standard curve in Sample Diluent NS

Example of human GLP-1 (7-36) standard curve in Sample Diluent NS. The GLP-1 (7-36) standard curve was prepared as described in Section 10.
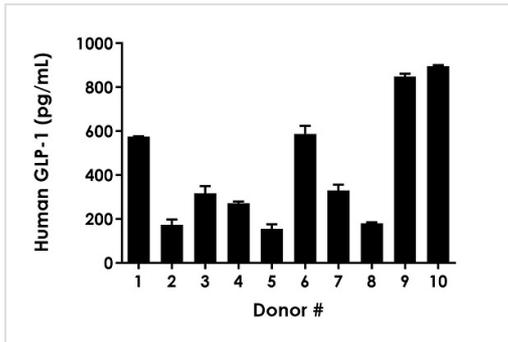
Serum of each donor was diluted 1:10 using sample diluent NS. The mean levels of GLP-1, after adjusting for dilution factor, were found at 433.5 pg/mL with a standard deviation of 277 pg/mL.

Ten individual healthy donors were evaluated for the presence of GLP-1 in serum using this assay

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