abcam

ab184857

Human GLP1 (7-36) ELISA Kit

Human GLP1 (7-36) ELISA Kit is a single-wash 90-min SimpleStep ELISA used to quantify Human GLP1 (7-36) with a sensitivity of 25 pg/mL. The assay uses a simple mix-wash-read protocol with just one incubation and one wash step. - Colorimetric sandwich ELISA - 450 nm readout : works on any standard plate reader - Different formats for different needs: 10x96 plates for bulk orders and 384-well plate for higher throughput - For higher sensitivity and a broader dynamic range, check our chemiluminescent SimpleStep Ignite™ ab325364

Recombinant | SimpleStep

Key facts

Detection method	Colorimetric
Sample types	Heparin Plasma, Citrate plasma, Cell culture supernatant, Serum
Assay type	Sandwich
Reactive species	Human
Range	59.6 - 1000 pg/mL
Assay time	1h 30m
Assay Platform	Microplate
Sensitivity	= 25 pg/mL

What's included?

1 x 384 Tests

Components

384 well CaptSure™ microplate

1 x 1 Unit

Plate Seal

1 x 1 Unit

Stop Solution

2 x 12 mL

TMB Development Solution

2 x 12 mL

10X Wash Buffer PT (ab206977)

1 x 20 mL

Antibody Diluent CPI2

1 x 6 mL

Human GLP1 Lyophilized Recombinant Protein

2 x 1 Vial

10X Human GLP1 (7-36) Detector Antibody

1 x 600 µL

Sample Diluent NS (ab193972)

1 x 50 mL

10X Human GLP1 (7-36) Capture Antibody

1 x 600 µL

1 x 384 Tests

Components

384 well CaptSure™ microplate

1 x 1 Unit

Plate Seal

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2 x 12 mL

10X Human GLP1 (7-36) Capture Antibody

1 x 600 µL

10X Human GLP1 (7-36) Detector Antibody

1 x 600 µL

Stop Solution

2 x 12 mL

1 x 96 Tests

Components

Plate Seal

1 x 1 Unit

SimpleStep Pre-Coated 96-Well Microplate (ab206978)

1 x 1 Unit

Stop Solution

1 x 12 mL

TMB Development Solution

1 x 12 mL

10X Wash Buffer PT (ab206977)

1 x 20 mL

Antibody Diluent CPI2

1 x 6 mL

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1 x 1 Unit

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10 x 96 Tests

Components

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10 x 1 Unit

SimpleStep Pre-Coated 96-Well Microplate (ab206978)

10 x 1 Unit

Stop Solution

1 x 120 mL

TMB Development Solution

1 x 120 mL

10X Wash Buffer PT (ab206977)

1 x 200 mL

Antibody Diluent CPI2

10 x 6 mL

Human GLP1 Lyophilized Recombinant Protein

20 x 1 Vial

10X Human GLP1 (7-36) Detector Antibody

10 x 600 µL

Sample Diluent NS (ab193972)

2 x 250 mL

10X Human GLP1 (7-36) Capture Antibody

10 x 600 µL

10 x 96 Tests

Components

Plate Seal

10 x 1 Unit

Antibody Diluent CPI2

10 x 6 mL

TMB Development Solution

1 x 120 mL

10X Human GLP1 (7-36) Capture Antibody

10 x 600 µL

10X Human GLP1 (7-36) Detector Antibody

10 x 600 µL

Sample Diluent NS (ab193972)

2 x 250 mL

Stop Solution

1 x 120 mL

10X Wash Buffer PT (ab206977)

1 x 200 mL

SimpleStep Pre-Coated 96-Well Microplate (ab206978)

10 x 1 Unit

Human GLP1 Lyophilized Recombinant Protein

20 x 1 Vial

Precision

Intra assay

Sample	n	C.V.
Human Serum	8	7

Inter assay

Sample	n	C.V.
Human Serum	3	9

Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	= 109	105 - 112 %
Heparin Plasma	= 110	104 - 112 %

Sample type	Average %	Range
Citrate plasma	= 115	107 - 123 %
Cell culture media	= 99	93 - 102 %

Target data

See full target information GCG

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. Binds to and activates the glucagon receptor GCGR, which couples to the G(s) G protein and elevates intracellular cAMP, triggering downstream metabolic responses (PubMed:32193322). Glucagon-like peptide 1. Potent stimulator of glucose-dependent insulin release (PubMed:22037645, PubMed:40446798). Also stimulates insulin release in response to IL6 (PubMed:22037645). Plays important roles on gastric motility and the suppression of plasma glucagon levels (PubMed:10605628, PubMed:14719035, PubMed:12554744). May be involved in the suppression of satiety and stimulation of glucose disposal in peripheral tissues, independent of the actions of insulin (PubMed:10605628, PubMed:14719035, PubMed:12554744). Has growth-promoting activities on intestinal epithelium (PubMed:10605628, PubMed:14719035, PubMed:12554744). May also regulate the hypothalamic pituitary axis (HPA) via effects on LH, TSH, CRH, oxytocin, and vasopressin secretion (PubMed:10605628, PubMed:14719035, PubMed:12554744). Increases islet mass through stimulation of islet neogenesis and pancreatic beta cell proliferation (PubMed:10605628, PubMed:14719035, PubMed:12554744). Inhibits beta cell apoptosis (PubMed:10605628, PubMed:14719035, PubMed:12554744). Glucagon-like peptide 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.

Storage

Shipped at conditions Blue Ice

Appropriate short-term storage conditions +4°C

Appropriate long-term storage conditions	+4°C
Storage information	+4°C

Notes

Human GLP1 (7-36) ELISA Kit ab184857 is a rapid single-wash 90-min ELISA kit to measure Human GLP1 (7-36) in cell culture supernatant, serum and plasma. This SimpleStep ELISA® sensitivity is 25 pg/mL.

How the assay works

Human GLP1 (7-36) SimpleStep ELISA® 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.

Assay Specificity

GLP-1(9-36) recombinant protein was diluted at 10ng/mL and assayed for cross reactivity. Signal was found at 7% from GLP-1 (7-36) protein assayed at the same concentration.

Human GLP1 (7-36) ELISA Kit ab184857 protocol summary:

1. Mix: add samples/standards to the wells together with the capture and detector antibody cocktail. Incubate for 1 hr at room temperature
2. Wash
3. Add TMB development solution - incubate for 10 min
4. Add stop solution
5. Read the results on a plate reader at 450nm

How other researchers are using Human GLP1 (7-36) ELISA Kit ab184857

Human GLP1 (7-36) ELISA Kit ab184857 has been used to study isosinestin modulation of human glucagon like peptide 1 secretion as a therapy for diabetes mellitus[(1)] and gut microbial profiles and metabolic traits in type 1 diabetes[(2)].

References:

[(1)]Hyeung-Jin Jang et al. 2023, PMID: 36835092,
[(2)]Feihong Luo et al. 2022, PMID: 36289225

Save your precious samples

Our 384-well Human GLP1 (7-36) ELISA Kit only requires a maxmum of 12.5µL

Design your own immunoassay

We offer the antibody pair used in this kit in a BSA and Azide-free format, ready for conjugation

- Human GLP1 (7-36) Antibody Pair - BSA and Azide free ab243974
- Anti-GLP1 (7-36) antibody [EPR4042-1] - BSA and Azide free (Capture) ab244627
- Anti-GLP1 (7-36) antibody [EPR4042-407] - BSA and Azide free (Detector) ab244887

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	GLP-1 (7-36) also known as glucagon-like peptide-1 is a peptide hormone that is integral to glucose metabolism. It has a molecular mass of approximately 3.8 kDa and is mainly expressed in the intestinal L-cells. It also exists in neurons within the brainstem. GLP-1 (7-36) plays a role in stimulating insulin secretion from the pancreas in response to ingested nutrients. It interacts directly with the GLP-1 receptor a G protein-coupled receptor to exert its effects.
Biological function summary	The peptide regulates blood glucose levels by promoting insulin release and inhibiting glucagon secretion. GLP-1 (7-36) also slows gastric emptying and reduces appetite which contributes to its role in energy balance. It does not function as part of a larger protein complex but its active form can be derived from the proglucagon protein precursor. The peptide has additional neuroprotective effects and supports beta-cell proliferation and survival further highlighting its multifaceted roles in metabolism.
Pathways	This peptide acts significantly within the incretin pathway a critical regulator of glucose homeostasis. The GLP-1 receptor is activated upon binding with GLP-1 (7-36) leading to the stimulation of downstream signaling processes involving proteins like PKA and PI3K which promote insulin secretion. Additionally its interaction with DPP-4 enzyme is notable as DPP-4 degrades GLP-1 (7-36) diminishing its activity and influencing glucose regulation pathways.
Associated diseases and disorders	Altered levels of GLP-1 (7-36) relate to conditions like type 2 diabetes and obesity. Its ability to enhance insulin secretion helps manage hyperglycemia in diabetic patients. The peptide also associates indirectly with liraglutide a GLP-1 analog used as a therapeutic agent in treating these conditions. The interaction between GLP-1 (7-36) and DPP-4 forms a basis for developing DPP-4 inhibitors as a treatment strategy for managing diabetes.

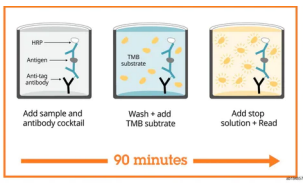
Product promise

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

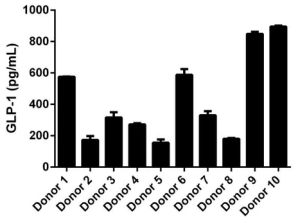
In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

7 product images



ELISA - Human GLP1 (7-36) ELISA Kit (ab184857)



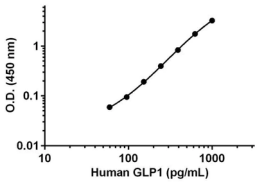
Sandwich ELISA - Human GLP1 (7-36) ELISA Kit (ab184857)

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

Standard Curve Measurements			
Conc.	O.D. 450 nm		Mean
(pg/mL)	1	2	O.D.
0	0.076	0.071	0.073
59.6	0.127	0.128	0.128
95.4	0.161	0.164	0.163
152.6	0.265	0.255	0.260
244.1	0.452	0.481	0.466
390.6	0.912	0.891	0.902
625	1.823	1.829	1.826
1000	3.370	3.305	3.338

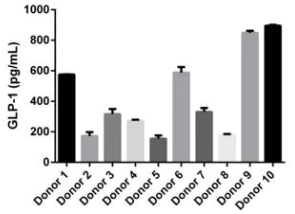
Sandwich ELISA - Human GLP1 (7-36) ELISA Kit (ab184857)

Example of GLP-1 standard curve. The GLP-1 standard curve was prepared as described. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



Sandwich ELISA - Human GLP1 (7-36) ELISA Kit (ab184857)

Example of GLP-1 standard curve.
Background-subtracted data values (mean +/- SD) are graphed.



Sandwich ELISA - Human GLP1 (7-36) ELISA Kit (ab184857)

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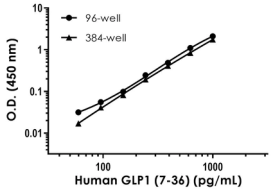
Dilution Factor	Interpolated value	10% Human Serum	10% Human Plasma (Citrate)	1% Human Plasma (Heparin)	10% Culture media
1	pg/mL	257.70	260.90	265.20	238.00
	% Expected value	100	100	100	100
2	pg/mL	136.30	145.90	126.90	125.10
	% Expected value	106	112	96	105
4	pg/mL	68.60	73.40	67.60	60.50
	% Expected value	106	113	102	102
8	pg/mL	28.20	27.50	34.90	23.80
	% Expected value	87	84	105	80

Sandwich ELISA - Human GLP1 (7-36) ELISA Kit (ab184857)

Recombinant GLP-1 (7-36) was spiked into the following biological samples and diluted in a 2-fold dilution series in Sample Diluent NS.
Linearity of dilution is determined based on interpolated values from the standard curve. Linearity of dilution defines a sample concentration interval in which interpolated target concentrations are directly proportional to sample dilution.



Sandwich ELISA - Human GLP1 (7-36) ELISA Kit (ab184857)

Example of human GLP1 (7-36) standard curve in 96-well vs. 384-well plate. Background-subtracted data values (mean +/- SD) are graphed.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.