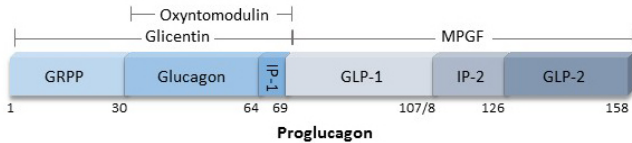


Glucagon is one of several proteins that can be processed from a 160 amino acid prohormone, called proglucagon, coded by the glucagon gene. Proglucagon processing in the pancreas results in circulating levels of the 29 amino acid hormone glucagon that plays an important physiological role in the regulation of blood glucose levels. Proglucagon is also produced in the gastrointestinal track where two larger proteins, glicentin and oxyntomodulin, that contain the entire glucagon sequence are secreted into blood. Because different circulating proteins contain the full glucagon sequence, accurately measuring glucagon specifically in blood is challenging and requires an assay with antibodies directed against both N- and C- termini.<sup>1</sup>



Although Glucagon testing has been around for decades, it has largely remained a research test because Glucagon tests specific enough to give researchers confidence in the results were laborious 2 and 3 day assays with complex sample extraction. A significant limitation to current commercially available assays is due to the lack of standardization and commutability of the methods used to measure Glucagon in peripheral circulation. Additionally, differences in the design of these methods affects not only quantitative results but also the specificity of the assays with respect to cross-reactivity with glicentin and oxyntomodulin. Such differences impact the interpretation of Glucagon measurements and potentially the validity of their research and clinical usefulness. Indeed, two studies conducted by Jens J. Holst's group in Denmark in 2014 showed that commercially available glucagon immunoassays lack the specificity, sensitivity, dynamic ranges, and precision necessary to obtaining accurate measurements of Glucagon in blood.<sup>1,2</sup>

In consultation with several key opinion leaders, Ansh Labs has screened countless monoclonal antibodies and tested numerous assay validation protocols to identify the optimal antibody pair. We are confident that our Glucagon ELISA kit will set a new standard in glucagon testing allowing researchers to more accurately detect glucagon abnormalities in diabetes and insulin replacement therapies.

## Ansh Labs Advantage

Measures Glucagon (1-29) with no detectable cross-reactivity to Glicentin, Oxyntomodulin, GLP-1, GLP-2, or GRPP

Sensitive to 2.4 pg/mL (0.7 pmol/L); analytical measurable range of 7-314 pg/mL (2.1-94.2 pmol/L) allows for accurate quantitations on both hyperglycemic and hypoglycemic samples

Simple two-step procedure with total 2.5 hour incubation at RT avoids the complex or overnight procedures inherent in current Glucagon assays

Sample size of 50 µL for Humans and 25 µL for Rats, no extraction needed, no special collection tube required



The Difference is in the Results. Go Ahead. Test Us!

## Accurate

Multiple dilutions of four plasma samples containing various Glucagon levels were diluted with the sample diluent. The percent (%) recovery on individual samples is represented in the table.

Sample	Dilution Factor	Expected Conc. (ng/mL)	Observed Conc. (ng/mL)	% Recovery
1	Neat	313	Neat	NA
	1:2	156.5	147.5	94%
	1:4	78.5	74.4	95%
2	Neat	133.2	Neat	NA
	1:2	66.6	60.5	91%
	1:4	33.3	36.3	109%
3	Neat	84.4	Neat	NA
	1:2	42.2	35.2	83%
	1:4	21.1	22.8	108%
4	Neat	64.6	Neat	NA
	1:2	32.3	31.2	97%
	1:4	16.15	18.3	113%

## Specific

No cross-reactivity with several proglucagon-derived peptides.

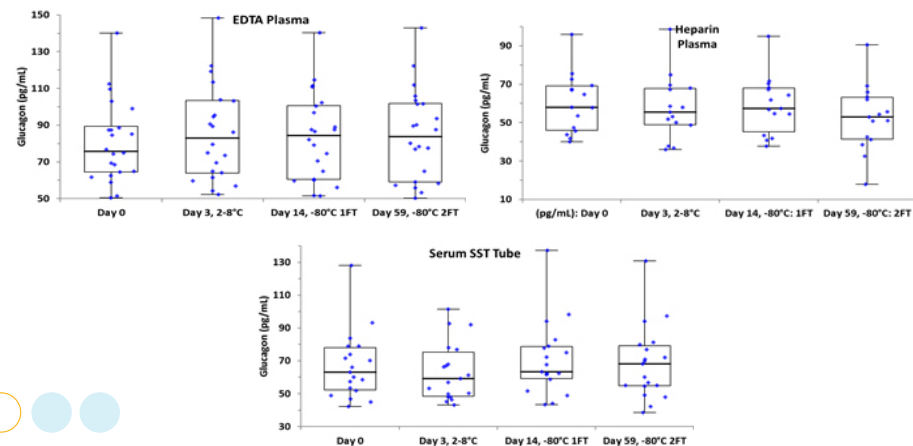
Cross-reactivity data against common Glucagon drugs is listed in the IFU.

Sample No.	Cross-reactant	Concentration (ng/mL)	% Cross-reactivity
1	Glucagon (1-29)	100	100%
2	Oxyntomodulin (1-37)	1000	ND
3	GLP-1 (7-36)	1000	ND
4	GLP-1 (9-36)	1000	ND
5	GLP-2 (1-34)	1000	ND
6	GRPP	1000	ND
7	Glicentin	1000	ND
8	MPGF-2	100	ND
9	Insulin	10	ND
10	C-Peptide Insulin	10	ND
11	Thyroglobulin	10	ND

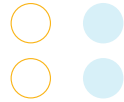
## Reliable

Sample types tested: K<sub>2</sub>EDTA, Lithium-Heparin Plasma, Serum.

Stability in graphs:  
Day 0  
Day 3 at 2-8°C  
Day 14 at -80°C  
Day 59 at -80°C



# Glucagon



Glucagon is a useful research tool in Metabolism studies related to:

- Diabetes
- Insulin sensitivity and resistance
- Obesity
- Pancreatitis
- Pancreatic tumor
- Therapeutic monitoring in GLP-1 therapy
- Eating disorders
- Adult growth hormone deficiency

## ELISA 96 Wells

Method	Quantitative two-step sandwich type immunoassay
Incubation Time	Total 2.5 hour incubation at room temperature
Approximate Dynamic Range	7 points, 7-314 pg/mL (2.1-94.2 pmol/L)
Sensitivity	2.4 pg/mL (0.7 pmol/L)
Sample Size / Type	50 µL / K <sub>2</sub> EDTA Plasma (no extraction necessary)
Shelf-life	24 months

## Ordering Information

Glucagon	96-Well ELISA	AL-157
Oxyntomodulin	96-Well ELISA	AL-139*
Rat / Mouse Oxyntomodulin	96-Well ELISA	AL-192*
C-Peptide of Insulin	96-Well ELISA	AL-151
Glicentin	96-Well ELISA	AL-185*
GLP-1	96-Well ELISA	AL-172*
GLP-2	96-Well ELISA	AL-174*

\* Unless otherwise stated in our catalog or other product documentation, these kits are intended for research use only and not for *in vitro* diagnostic purposes or therapeutic uses



ISO 13485:2016

Call us today or visit  
[AnshLabs.com](http://AnshLabs.com) to see what's  
new in our lab.

Ansh Labs is ISO 13485 certified for design, development, manufacturing, services and distribution of reagents/ immunoassay kits for research and *in vitro* diagnostic applications.

### References:

1. Diabetologia 2014 57:1919-1926
2. European Journal of Endocrinology 2014 170, 529-5388



The Difference is in the Results. **Go Ahead. Test Us!**

445 Medical Center Blvd. Webster, TX 77598 • U.S.A.

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## Customer Relations

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## Sales

281.404.0260  
[sales@anshlabs.com](mailto:sales@anshlabs.com)

## Product Listing\*

### TGF-Beta Superfamily

Activin A  
Activin B  
Activin AB  
AFP  
AMH  
AMH, Dried Blood Spot  
picoAMH (MenoCheck)  
Estrilol  
Follistatin  
Follistatin Like 3  
FSH  
FSH, Dried Blood Spot  
GDF-9  
hCG, Intact  
Inhibin, Total  
Inhibin A  
Inhibin B  
Inhibin B, Ultra-Sensitive  
LH  
LH, Dried Blood Spot  
PAPP-A  
picoPAPP-A  
PAPP-A2

### Glucagon Regulation

C-Peptide of Insulin  
Glicentin  
GLP-1  
GLP-2  
Glucagon  
Major Proglucagon Fragment  
Oxyntomodulin

### Growth Factors

IGF-I, Free  
IGF-I, Total  
IGF-II  
IGFBP-2  
IGFBP-3, Intact  
IGFBP-3, Total  
IGFBP-4, Intact  
IGFBP-4, Total  
IGFBP-5  
Stanniocalcin 2

### Neuronal Disorders

MBP

### Specialty Controls

Ansh/Check AMH Tri-Level Controls  
Ansh/Check Inhibin B Tri-Level Controls  
Ansh/Check Maternal Screening Bi-Level Controls

### Species Specific Assays

Activin B - Mouse  
AMH - Bovine, Canine, Caprine, Equine,  
Mouse, Ovine, Porcine, Rat  
IGF-I, Free - Rat and Mouse  
IGF-I, Total - Mouse, Rat  
Inhibin A - Canine, Equine, Rodent  
Inhibin B - Canine, Equine, Rodent  
Oxyntomodulin - Rat, Mouse  
PAPP-A - Mouse

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