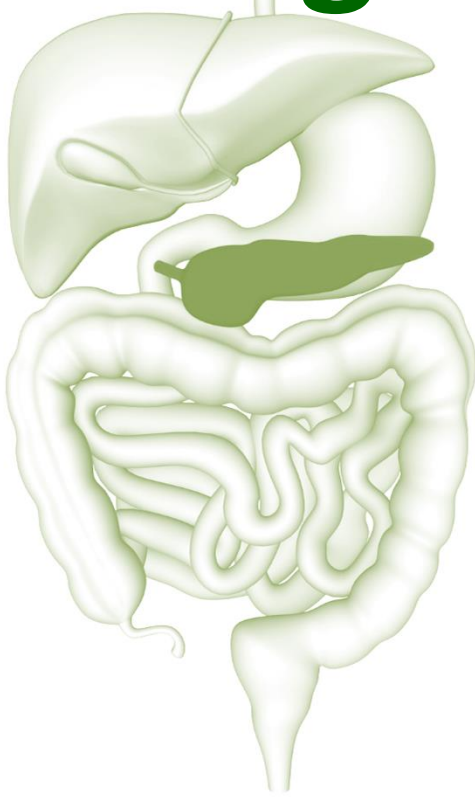


This product is not intended for diagnostic or medical purposes.

Glucagon



Glucagon is a **peptide hormone** with a molecular weight of 3,485 consisting of 29 amino acid residues, secreted by pancreatic **alpha** cells.

It acts on the liver to promote the production and release of glucose through glycogenolysis and glycogenesis, thereby **elevating blood glucose**.

Antibody

[#10505 Anti-Glucagon \(52A1A\) Rat IgG MoAb](#)

- Application : IHC
- Package size : 5µg, 50µg
- Species : Human

ELISA

[#27797-96Well Glucagon ELISA Kit – IBL](#)

- Sample : EDTA plasma
- Measurement range : 0.31 ~ 20 pmol/L
- Dilution ratio : x2
- Sensitivity : 0.05 pmol/L

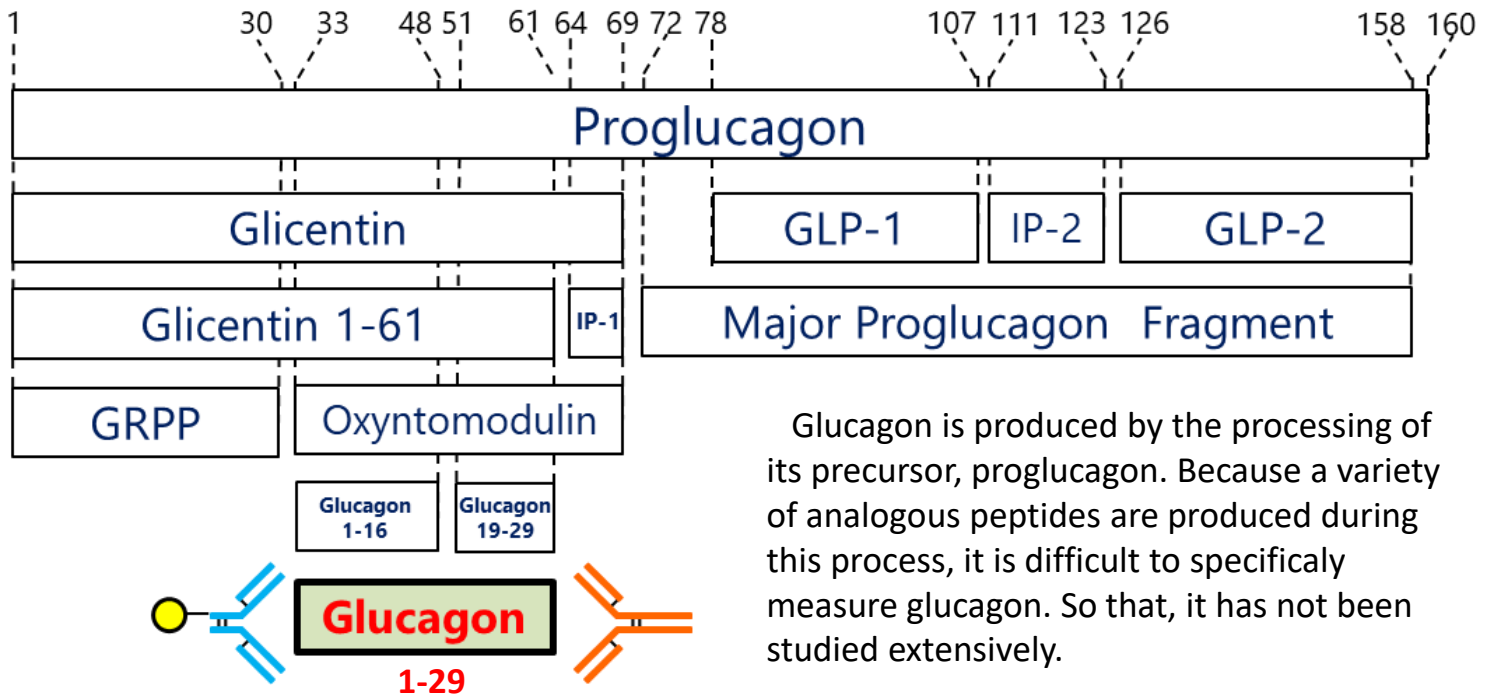
Diabetes and Glucagon

Type 2 diabetes, which is said to account for **95%** of all diabetics, is caused by decreased insulin secretion and insulin resistance. **Insulin** is a hormone secreted by the beta cells of the pancreas, which **lowers blood glucose levels** by drawing sugar from the blood into the body. On the other hand, glucagon is a hormone secreted from the alpha cells of the same pancreas and **increases blood glucose levels** by increasing the production of sugar in the liver. Insulin and glucagon are considered "**antagonistic hormones**" because they maintain constant blood glucose levels by balancing each other.

Working for Blood Glucose Level	Insulin	Glucagon
	↓ Making Down	↑ Making Up
Diabetes		
	Insulin	Glucagon
	↓ Down	↑ Up

However, papers published in 2010 and 2011 suggested that the presence of a certain amount of glucagon, rather than the presence or absence of insulin, may contribute to elevated blood glucose levels, and the "**glucagon-centric theory**"¹⁾ was published in 2012 by Unger, Cherrington, and colleagues.

Issue of Glucagon measurement



Glucagon is produced by the processing of its precursor, proglucagon. Because a variety of analogous peptides are produced during this process, it is difficult to specifically measure glucagon. So that, it has not been studied extensively.

Highly Specificity

IBL has successfully developed a **highly sensitive** and **specific** ELISA using novel N- and C-terminal specific paired antibodies.

It is very important for detecting specific Glucagon (1-29) because it has been reported that some diabetic patients with impaired glucose tolerance have high levels of glicentin (one of glucagon-like hormone) in their blood.

Peptide	Cross reactivity
Glucagon(3-29)	N.D
Oxyntomodulin	0.06%
Glicentin(1-61)	0.05%
Glicentin(1-69)	N.D
Glucagon (19-29)	N.D
GLP-1(7-36)amide	0.02%
GLP-1(9-36)amide	0.01%
GLP-2	<0.01%
GIP(1-42)	<0.01%
GIP(3-42)	<0.01%

Assume 100% reaction with glucagon (1-29)

References

- 1) Unger RH, Cherrington AD. Glucagonocentric restructuring of diabetes: a pathophysiologic and therapeutic makeover. J Clin Invest. 2012 Jan;122(1):4-12. doi: 10.1172/JCI60016. Epub 2012 Jan 3. PMID: 22214853; PMCID: PMC3248306.
- 2) Kobayashi M, Maruyama N, Yamamoto Y, Togawa T, Ida T, Yoshida M, Miyazato M, Kitada M, Hayashi Y, Kashiwagi A, Kitamura T. A newly developed glucagon sandwich ELISA is useful for more accurate glucagon evaluation than the currently used sandwich ELISA in subjects with elevated plasma proglucagon-derived peptide levels. J Diabetes Investig. 2023 Feb 2. doi: 10.1111/jdi.13986. Epub ahead of print. PMID: 36729958.

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