PROINSULIN INTACT ELISA.

TECAN.

UNLOCK THE FUTURE OF DIABETES DETECTION: PROINSULIN INTACT ELISA FOR EARLY AND ACCURATE DIAGNOSIS.

PRODUCT

RE53061
Proinsulin Intact ELISA

Proinsulin, primarily produced in pancreatic β-cells, undergoes processing into insulin and C-peptide. While typically found in low concentrations in plasma of healthy individuals, insulin resistance (IR) or hyperglycemia prompts increased insulin secretion, leading to a disruption in secretion patterns. Consequently, plasma levels of intact proinsulin rise while insulin levels drop, serving as a specific biomarker for β-cell dysfunction and IR, also independently correlating with cardiovascular disease risk.

In clinical practice, fasting morning intact proinsulin emerges as a highly specific indicator of relevant insulin resistance and β-cell dysfunction, causative of type 2 diabetes. It can be used in guiding insulin resistance therapy selection and monitoring therapeutic efficacy on ß-cell function. Elevated fasting intact proinsulin levels signify insulin resistance and potential prediabetes, urging proactive treatment to mitigate cardiovascular risks.

During the oral glucose tolerance test, 2-hour intact proinsulin levels emerge as a robust predictor of future type 2 diabetes development, often preceding detectable glucose, HbA1c, and insulin changes by up to 4 years. Elevated fasting intact proinsulin levels may also signal conditions like insulinoma or precede type 1 diabetes manifestation.[1,2]

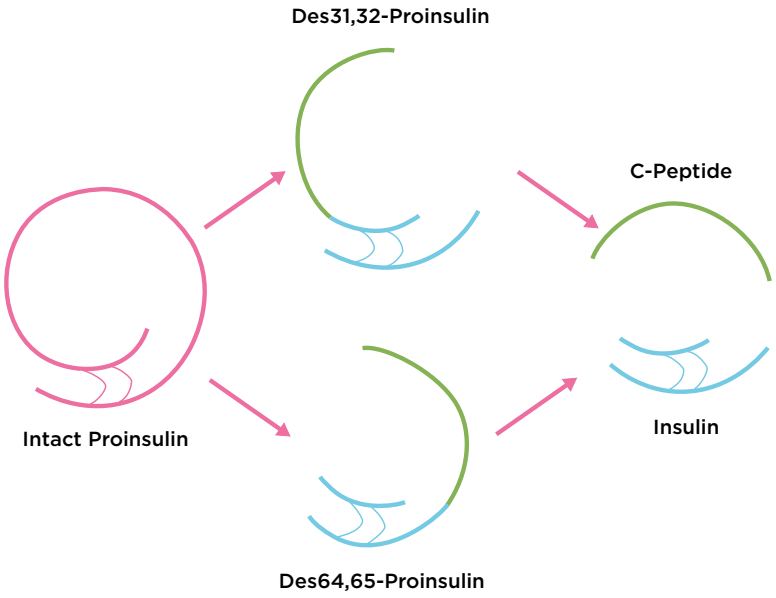

Figure 1: Intact versus total proinsulin.

- Total proinsulin = Intact proinsulin plus cleavage fragments (des32,33)
- Cleavage products are stable for hours, can be up to 30-50% of total proinsulin
- Exclude any possible reason for cleavage products (e.g. intake of fat food hours before blood collection)
- Intact proinsulin allows a better functional assessment of the ß-cell activity / dynamic

Transform diabetes detection with Proinsulin Intact ELISA.

- **Early detection**: Intact proinsulin indicates type 2 prediabetes before glucose changes. It predicts type 2 diabetes up to 4 years before clinical diagnosis.
- **Insight into insulin resistance**: Elevated intact proinsulin levels offer valuable information on insulin resistance, contributing to a comprehensive understanding of metabolic health.

- **Diagnostic accuracy**: The ELISA kit distinguishes itself by measuring intact proinsulin with high specificity, avoiding potential confounding factors present in total proinsulin assays.
- **Clinical utility**: Widely employed in reputable research and clinical studies [3,4], Proinsulin Intact ELISA is recognized for its clinical relevance and reliability.

Intact proinsulin indicates type 2 prediabetes before glucose changes are detectable.

It can predict type 2 diabetes (T2D) development up to 4 years before clinical diagnosis. Glucose, insulin and HbA1c cannot detect prediabetes and predict later T2D development.

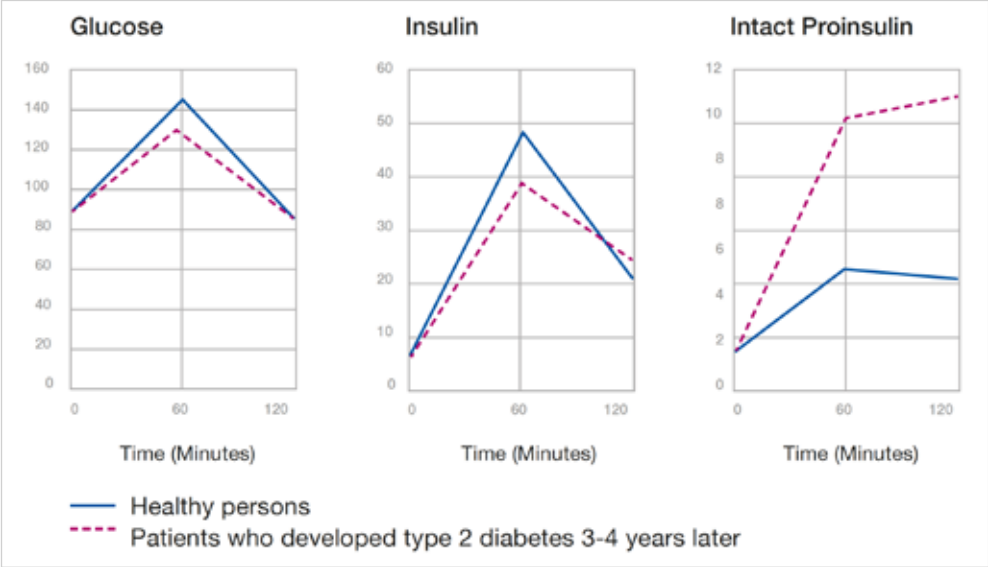

Figure 2: Glucose, insulin and intact proinsulin profiles in oral glucose tolerance test (OGTT) for patients who developed T2D within 4 years from this test. Results are compared to healthy persons who did not develop T2D.

- Only intact proinsulin predicts later T2D development.[5]
- Glucose in mg/dl; insulin in µU/ml; intact proinsulin in pmol/l.

Choose Proinsulin Intact ELISA (RE53061)* for:

- **Trusted results**: Calibrated with the latest WHO Standard 09/296.[6]
- **Precision matters**: Proven performance in external ring trial (published by INSTAND).
- **Ease of use**: Test can be performed within 3 hours.

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3. Sims, E. K., Geyer, S. M., Long, S. A., & Herold, K. C. (2023). High proinsulin: C-peptide ratio identifies individuals with stage 2 type 1 diabetes at high risk for progression to clinical diagnosis and responses to teplizumab treatment. Diabetologia, 1-9.
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