nextida·GC

Science

Targeting natural GLP-1 release with collagen peptides for glucose control

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Rousselot
by Darling Ingredients

Glucose: essential fuel that cannot be left unchecked

Glucose, a simple sugar, is a critical energy source for every cell in the human body – but it is also fast becoming the focus of serious health concerns.[1-5]

Increasingly aware of the negative effects fluctuating glucose levels can have on their wellbeing, consumers around the world are looking to take back control.

To offer an effective science-supported solution to this need, Rousselot developed Nextida® GC, a specific natural collagen composition shown to stimulate the secretion of the hormones glucagon-like peptide-1 (GLP-1) and gastric inhibitory polypeptide (GIP), reducing post-meal glucose spikes.

It's time to explore the science behind this whole new approach to glucose control, and the many opportunities it offers as consumer interest in GLP-1 solutions continues to rise.

The incretin effect: The link between GLP-1, GIP and glucose control

Every minute of every day, the human body works to protect itself from extremes and keep its various systems at a health equilibrium.

The incretin effect is one of these essential methods by which the body preserves balanced glucose levels, involving the secretion of the hormones GLP-1 and GIP, which in turn trigger the production of the most important player in the regulation of our glucose metabolism: insulin.[6]

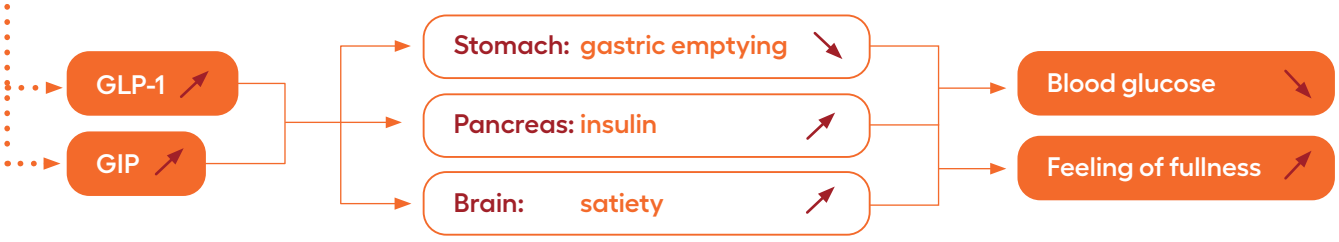


Figure 1: GIP and GLP-1 are secreted by cells located in the intestine. Their combined function is key to maintaining healthy glucose levels after a meal.

The endocrinological chain reaction unfolds as follows: the rapid entry of glucose into the digestive system following a meal triggers the release of GLP-1 and GIP.

This signals the body to increase insulin production, which facilitates the transfer of sugars out of the bloodstream and into the cells, returning glucose levels back to baseline.

In addition, the presence of GLP-1 causes a feeling of fullness by signaling the stomach to slow down gastric emptying, and suppresses hunger by stimulating the brain's satiety center.[6,7]

When the action of any of these hormones is halted due to diseases like diabetes, an individual's capacity for glucose management can be severely disrupted, leading to negative health outcomes. Therapies like Ozempic (GLP-1 receptor agonist analogue) and Mounjaro® (the first GIP and GLP-1 receptor agonist analogue), which were originally developed to treat diabetes, have gained attention in recent years thanks to their ability to mimic the function of these incretins. It's this feature that has become especially relevant to the modern consumer struggling with glucose management, and more recently, weight management.

Modern lifestyles: wreaking havoc on glucose control

Effective glucose management is often challenging due to the bad influence of current lifestyle and diet trends, characterized by the increased consumption of processed and carbohydrate rich foods, insufficient sleep and a sedentary lifestyle.

One consumer study showed that up to 80% of otherwise healthy participants experienced an excessive glucose spike after a simple meal of breakfast cereals and milk.[8] This situation can be compounded by chaotic schedules that push meal times late into the evening, a practice that has been linked to a worsened hyperglycemic state in healthy individuals.[9] Together, these factors disrupt natural regulatory mechanisms, making it more difficult for the body to maintain optimal glucose levels.

If large amounts of carbohydrates are consumed, this can result in the feeling of a 'sugar high' caused by the spike in blood glucose concentration. While this high can make us feel momentarily giddy and energized, it is inevitably followed by a 'sugar crash', where tiredness and sluggishness creep in as glucose levels decrease.[10,11]

Scientific studies show that high variability in blood glucose levels after a meal can lead to cravings and overeating, which begins a vicious cycle of glucose spikes and subsequent crashes.[11,12]

The glucose rollercoaster

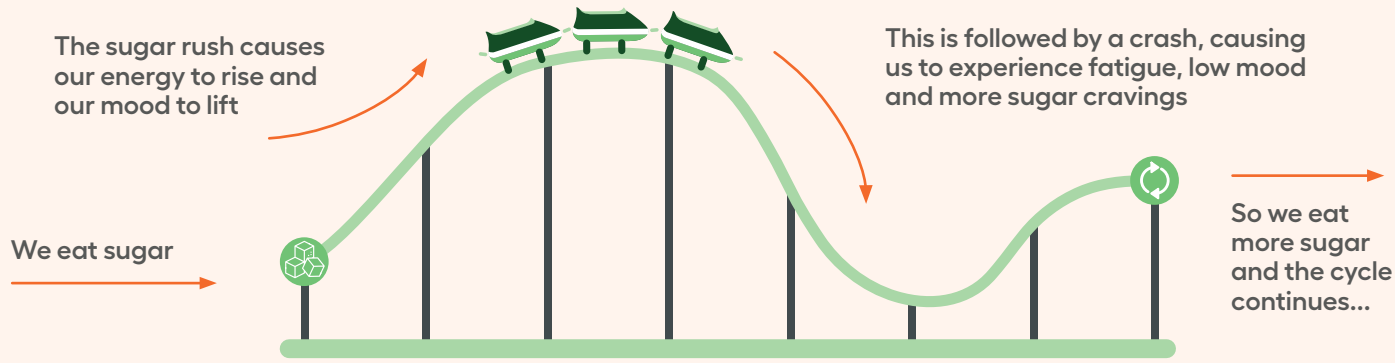


Figure 2: Illustration of post-meal glucose roller coaster

Frequent high variability in blood glucose levels can cause:

- Fatigue[10,15]
- Mood and sleep disturbances[11,13,14]
- **Food cravings and hunger**[11,12] potentially leading to overeating and weight gain
- Stress[13]

The glucose rollercoaster comes with another significant downside. When insulin levels are high, such as after eating a carbohydrate-rich meal, the body is prompted to store excess glucose as fat. Excessive insulin production, therefore, can result in fat storage beyond normal levels, leading to unwanted weight gain.[16] Additionally, these constant fluctuations can reduce cellular insulin sensitivity, making it harder for the body to regulate blood sugar effectively.

So, what can consumers do to step off the glucose rollercoaster?

To the rescue: putting the brakes on the glucose rollercoaster with Nextida GC

Recognizing the importance of incretin hormones like GLP-1, as well as the unexplored potential of collagen as a natural ingredient with multiple health benefits, researchers at Rousselot set out to investigate whether supplementation with a specific collagen peptide composition could increase GLP-1 secretion and support glucose metabolism.

Rousselot screened a comprehensive library of collagen peptide compositions, subjecting viable candidates to *in vitro* gastrointestinal digestion and testing them in an entero-endocrine intestinal cell model (Figure 3). This approach led to the identification of **Nextida GC**, selected for its superior ability to stimulate natural GLP-1 secretion.[17] By decoding the "collagen code"—the bioactive information embedded within collagen proteins—Rousselot has developed the **Nextida** platform, a range of targeted collagen peptide compositions designed to deliver specific health benefits.

Nextida GC collagen peptides delivered an increase in GLP-1 secretion when preclinically tested *in vitro*

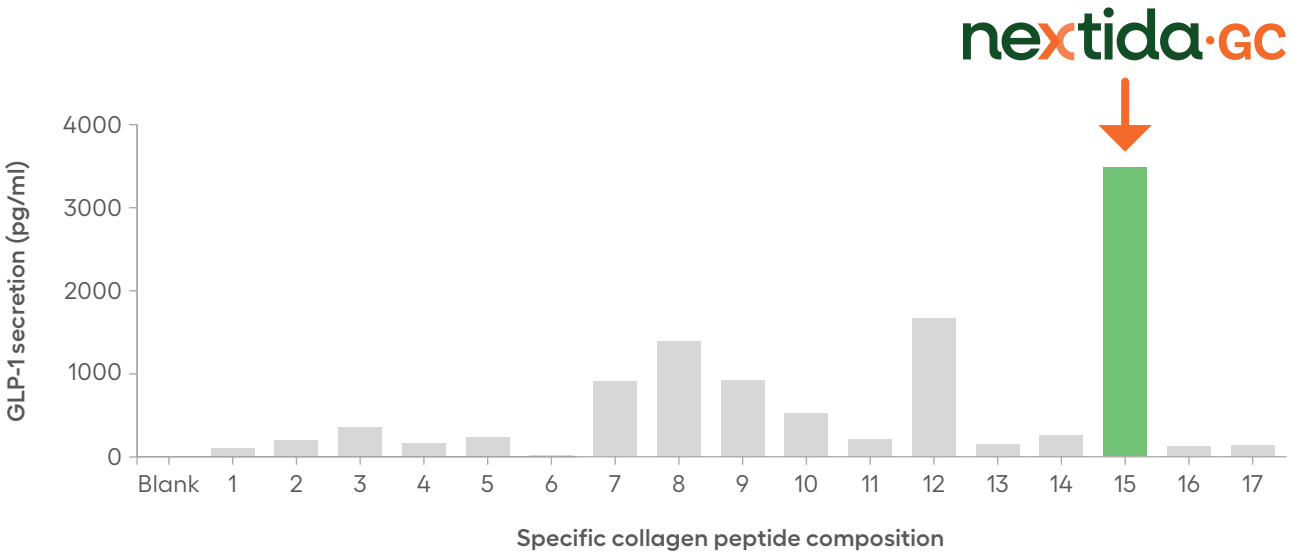


Figure 3: *In vitro* screening of a proprietary library of specific collagen peptide compositions for their ability to enhance natural GLP-1 secretion in murine, gastrointestinal enteroendocrine, STC-1 cells. All screened peptide compositions first underwent an *in vitro* digestive process to mimic human gastrointestinal digestion and maximize the physiological relevance of the results.

The development of Nextida GC is a major breakthrough, unlocking a new frontier for the potential of collagen peptides and their health benefits.

Science-backed benefits in focus

Nextida GC, the first launch of the Nextida platform, was shown to support metabolic health and glucose control in two independent clinical trials[17-19] (Figure 4):

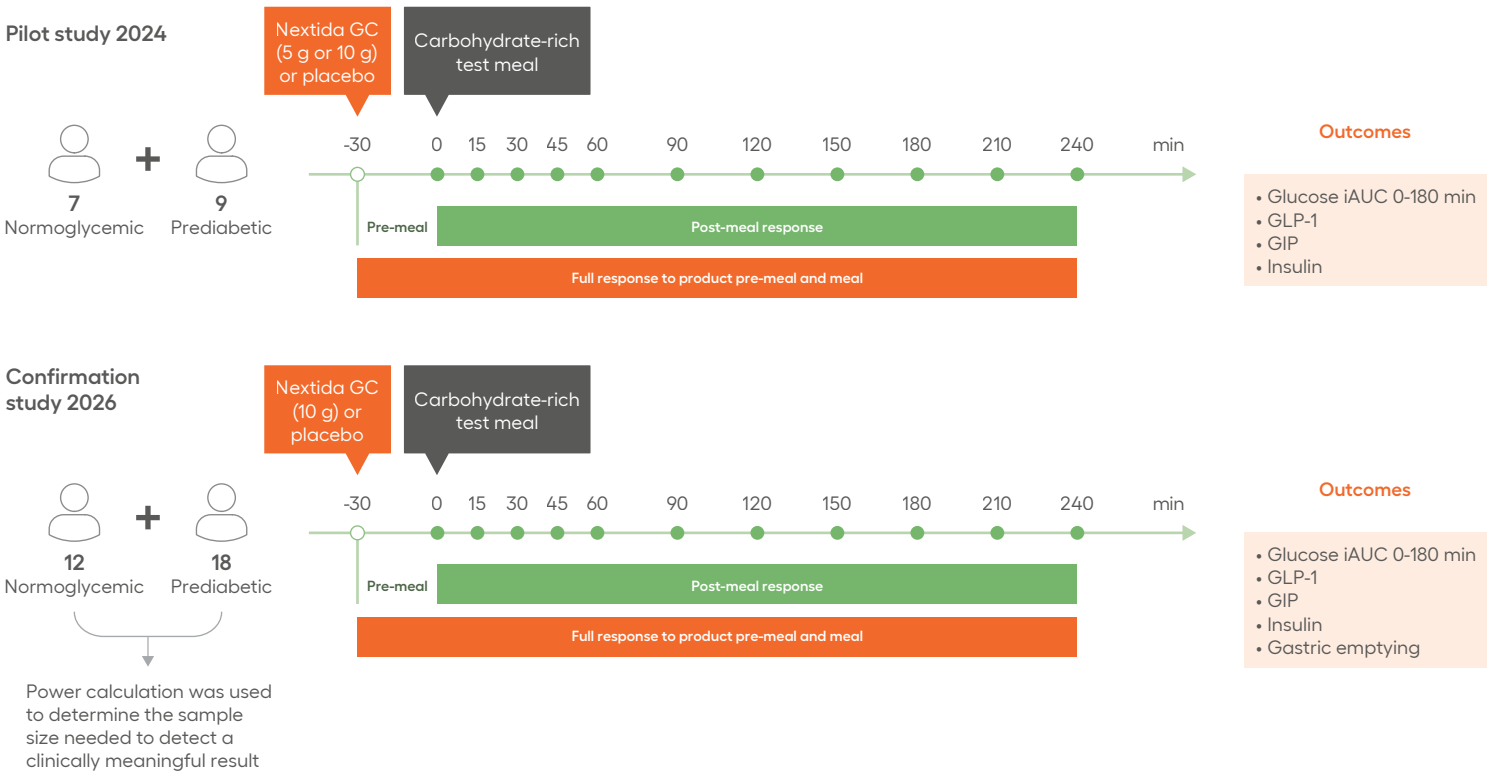


Figure 4: Schematic illustration of the clinical trial protocols. Carbohydrate-rich test meal consisted of 110g white toast, 20 g butter and 43 g strawberry jam.

1. Nextida GC collagen peptides increased GLP-1 and GIP secretion

The Nextida GC composition was tested for its ability to enhance natural GLP-1 and GIP secretion in clinical trials.

Nextida GC (10 g) intake significantly increased total GLP-1 secretion during the pre-meal phase both in the pilot[18] and the confirmation[19] study (Figure 5A and B). This elevation in GLP-1 levels remained significant when compared to the placebo group in both studies. In the pilot study, a 5 g dose of Nextida GC showed a trend towards increased GLP-1 during the pre-meal phase, of note, when zooming in on the prediabetic subpopulation, this elevation turned out to be significant (Figure 5C).[18]

Looking at the GLP-1 evolution after the meal, the GLP-1 levels remained significantly elevated up to 2 hours after the meal in the groups consuming 10 g Nextida GC (Figure 5D).[19]

Nextida GC increased natural GLP-1 secretion in two separate clinical trials

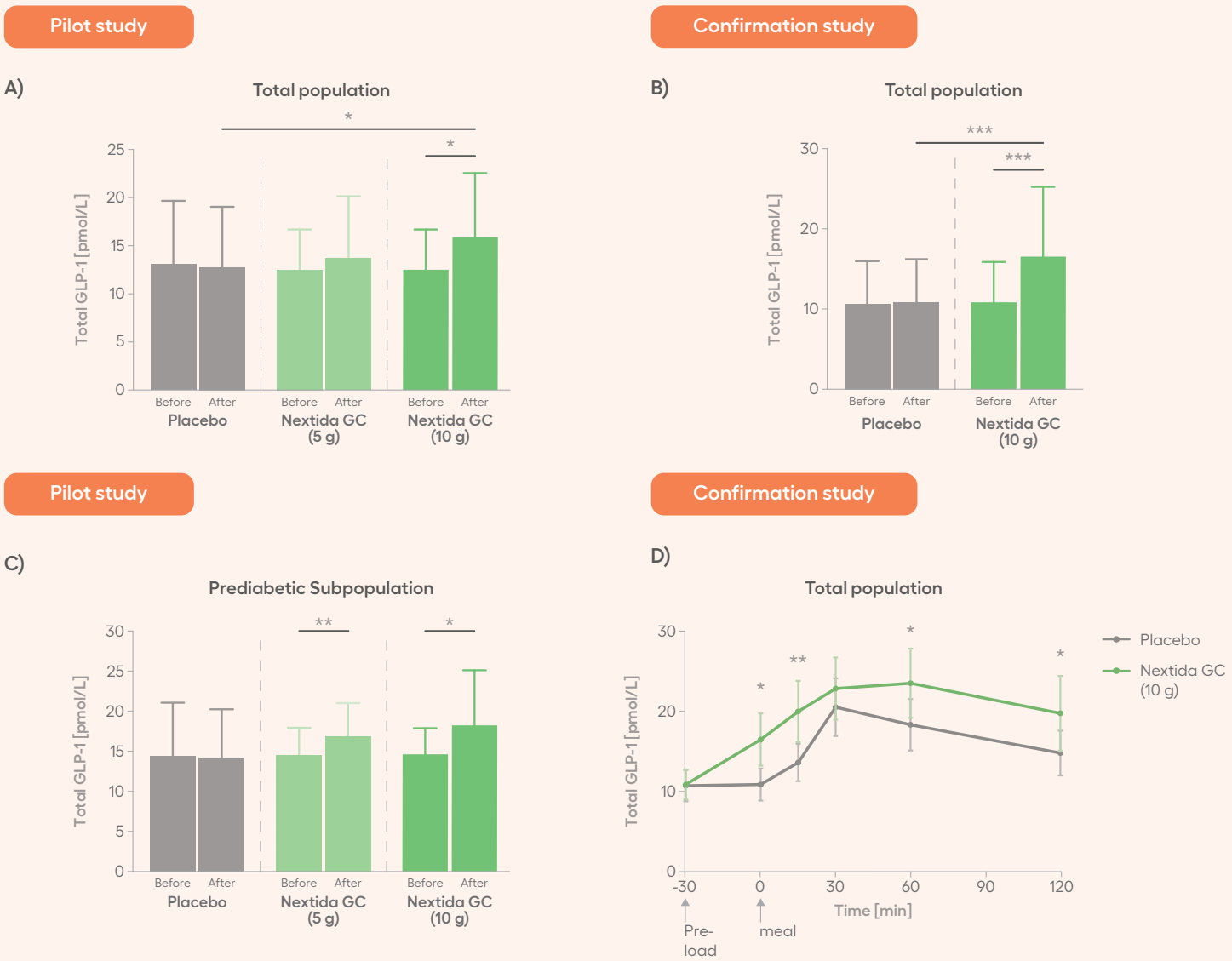


Figure 5: Nextida GC (10 g) significantly increased total GLP-1 secretion in both the pilot (A) and confirmation (B) study, Nextida GC (5 and 10 g) significantly increased total GLP-1 secretion in a prediabetic subpopulation in the pilot study (C). After the meal, GLP-1 levels remained elevated compared to placebo up to 2 hours (D). * ($p < 0.05$); ** ($p < 0.01$); *** ($p < 0.001$).

Nextida GC stimulated the production of both incretin hormones (GIP and GLP-1)

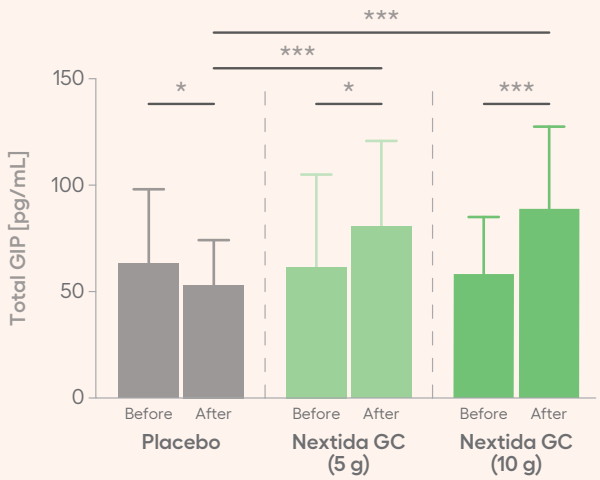
The pilot study demonstrated that both 5 g and 10 g Nextida GC significantly increased GIP levels compared to baseline and placebo (Figure 6A).[18] Increased GIP levels by intake of 10 g Nextida GC were further confirmed in the confirmation study (Figure 6B).[19]

This demonstrates that Nextida GC acted as a dual incretin stimulator, inducing secretion of both GLP-1 and GIP to support the body's natural incretin effect.

Nextida GC triggered natural GIP release before the meal in two separate clinical trials

Pilot study

A)



Confirmation study

B)

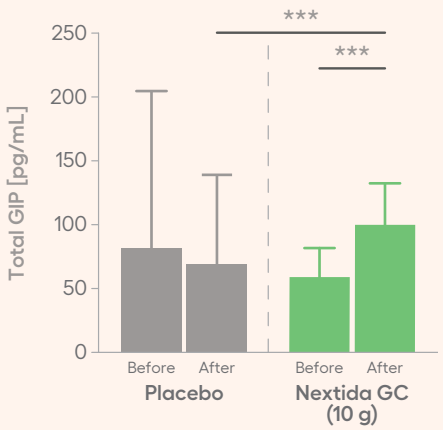


Figure 6: Nextida GC increased GIP secretion in both the pilot (A) and confirmation (B) study.
* ($p < 0.05$); ** ($p < 0.01$); *** ($p < 0.001$).

2. Nextida GC improved insulin response

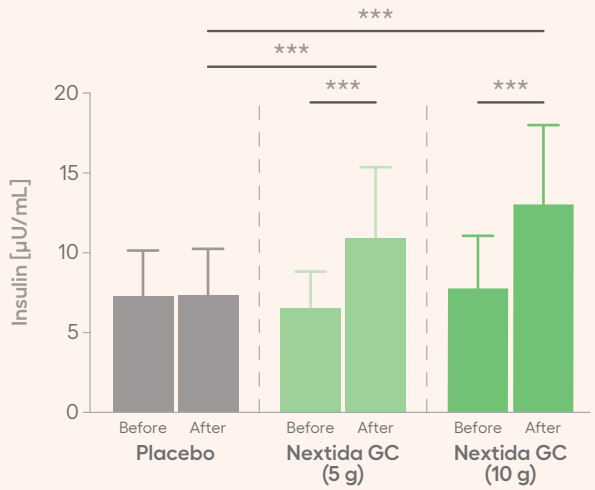
A similar pattern is observed for insulin after Nextida GC supplementation, as 10 g Nextida GC intake before a carbohydrate-rich meal significantly stimulated insulin secretion in the pre-meal phase (Figure 7) while significantly decreasing post-meal insulin levels (Figure 8), also compared to placebo. The pilot study demonstrated the same significant effect for a lower dose of 5 g Nextida GC (Figures 7-8). Together, this indicated an improved insulin response after Nextida GC intake.[18,19]

The increase in GLP-1, GIP and insulin levels before the meal, is also known as the priming effect. Nextida GC is preparing the body for the incoming nutrients to avoid a sudden glucose spike after the meal.

Nextida GC significantly stimulated pre-meal insulin secretion during the pre-meal phase

Pilot study

A)



Confirmation study

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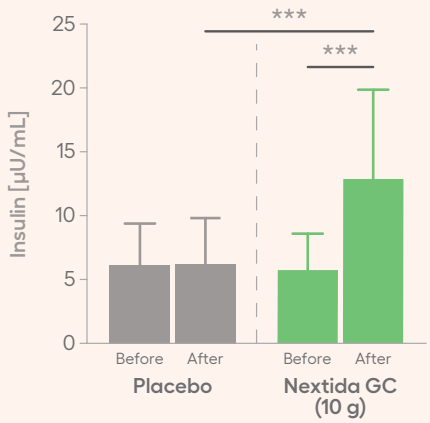
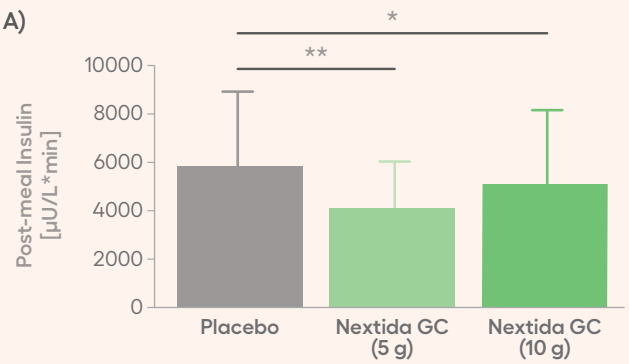


Figure 7: Nextida GC significantly increased insulin levels during the pre-meal phase in both the pilot (A) and confirmation study (B).
* ($p < 0.05$); ** ($p < 0.01$); *** ($p < 0.001$).

Nextida GC significantly lowered post-meal insulin levels

Pilot study

A)



Confirmation study

B)

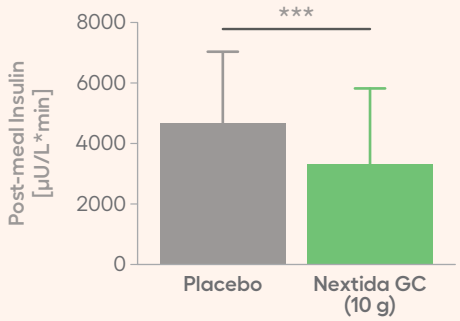


Figure 8: Nextida GC significantly decreased post-meal insulin levels in both the pilot (A) and confirmation study (B).
* ($p < 0.05$); ** ($p < 0.01$); *** ($p < 0.001$).

3. Nextida GC lowered the blood glucose spike in a healthy population

The priming effect of Nextida GC is evidenced by the reduction of the postprandial glucose spike after 5 or 10 g Nextida GC supplementation 30 minutes before the meal (Figure 9).[17,19] The glucose lowering effect of Nextida GC was observed in the two clinical trials, both showing that the glucose spike as well as the glucose peak (maximum concentration of glucose in the blood) were significantly reduced compared to placebo (Figure 10A-D).[17,19]

Nextida GC demonstrated to lower the postprandial glucose spike without increasing post-meal insulin levels.[19]

Nextida GC reduced the postprandial glucose spike in two separate clinical trials

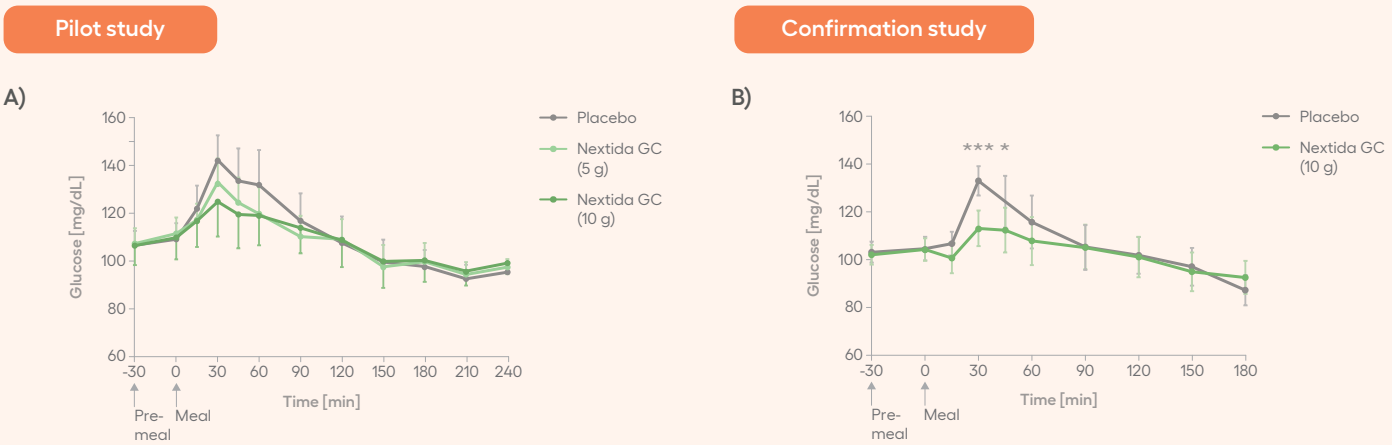


Figure 9: Nextida GC reduced the postprandial glucose spike when taken 30 min before the meal in both the pilot (A) and confirmation study (B). * ($p < 0.05$); ** ($p < 0.01$); *** ($p < 0.001$).

Nextida GC significantly reduced the post-meal blood glucose spike and peak height in two separate clinical trials

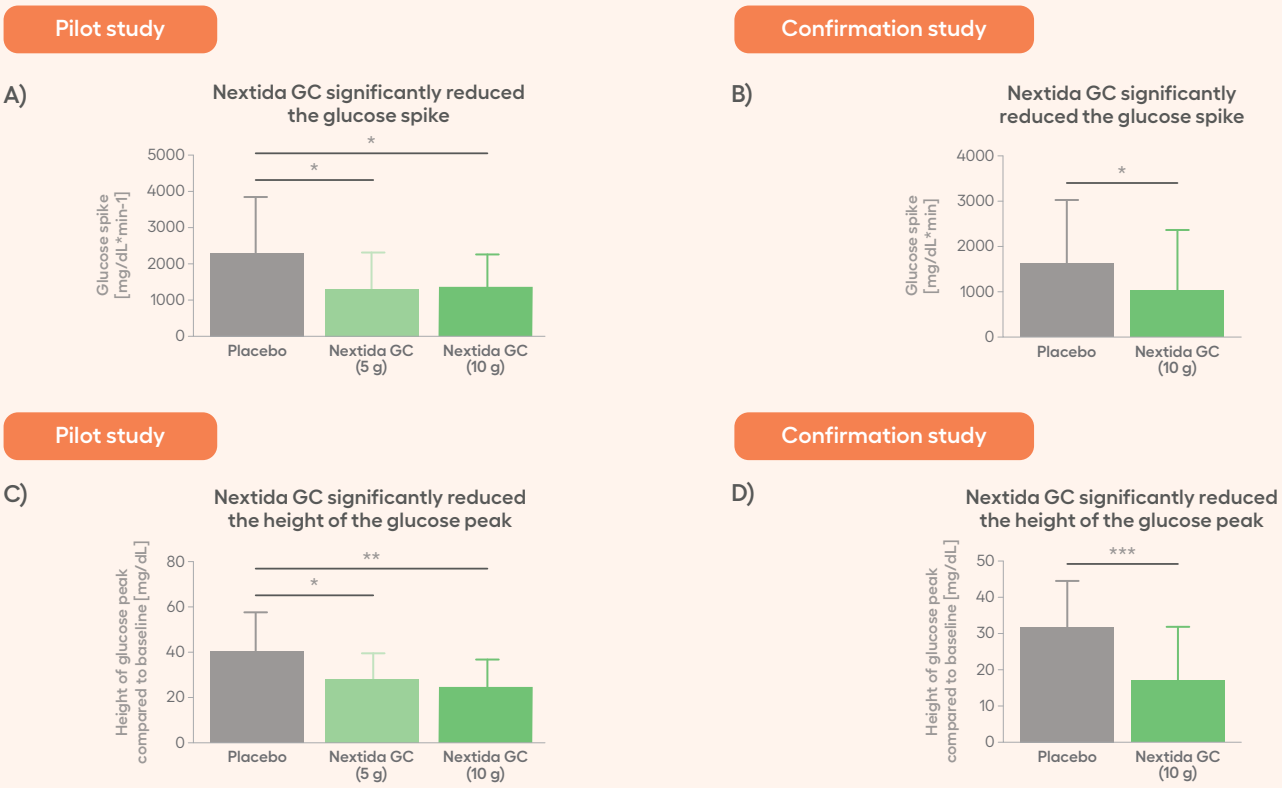


Figure 10: Nextida GC reduced the post-meal glucose spike (area under curve, A and B) and the height of the glucose peak (C and D) when taken 30 min before the meal in both the pilot (A and C) and confirmation study (B and D). * ($p < 0.05$); ** ($p < 0.01$); *** ($p < 0.001$).

Nextida GC has effectively supported post-meal glucose control in clinical trials

Lowering blood glucose spikes may reduce cravings[11] for energy-boosting sugary or starchy foods, helping consumers maintain a healthier lifestyle.

4. Nextida GC slowed down gastric emptying

Slowing down gastric emptying is, next to reduction of the postprandial glucose spike, one of the main effects of GLP-1.[6] The confirmation study showed that Nextida GC was able to slow down gastric emptying by 37.2 minutes compared to the placebo in the prediabetic subpopulation (Figure 11).[19] In literature, slower gastric emptying is linked to increased satiety, decreased food intake and regulation of blood sugar levels.[20,21]

Nextida GC significantly slowed down gastric emptying in a prediabetic subpopulation

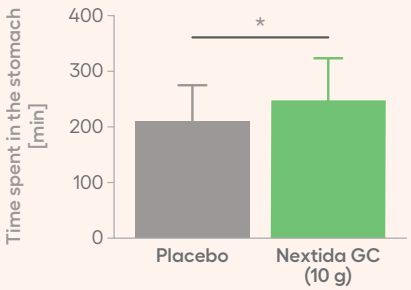


Figure 11: Nextida GC significantly slowed down gastric emptying in a prediabetic subpopulation, as demonstrated in the confirmation study. * ($p < 0.05$).

nextida·GC

A clinically studied ingredient for metabolic health:

- Boosted GLP-1 and GIP secretion
- Lowered the blood glucose spike
- Improved insulin response
- Slowed post-meal gastric emptying

As such, Nextida GC's specific collagen peptide composition could deliver multi-benefit support—from satiety and weight management to mood and stress response—through improved glycaemic control and reduced post-meal glucose spikes.

Marketing data sources

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2. Semrush, 2023
3. Google Trends data 2025
4. MedtechDive/William Blair
5. EY, 2024

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At Rousselot, we know collagen.

With 130 years of experience pioneering science-backed solutions, Rousselot is a trusted world leader in collagen-based solutions. Today, we have taken our understanding of the collagen molecule a step further, decoding collagen's hidden messages to identify previously unknown health benefits, and open new market opportunities.

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As Rousselot's strategic segment dedicated to health and nutrition, we are committed to developing innovative ingredients answering today's demand for solutions offering proven efficacy, full safety, and premium quality.

Our customers can rely on best-in-class products backed by trusted science, as well as on our expert support in formulation, product development, and regulatory advice. Our range of products includes Peptan®, Peptinex®, ProTake®, Colartix® and now Nextida® for a healthier tomorrow.

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