

WHITEPAPER

The studies that change the collagen conversation

*Science repeatedly proves vegan collagen alternative
VeCollal® to be as or even more effective in skincare
supplements than animal-derived collagen.*



Introduction: the context & the breakthrough

For decades, the collagen industry has revolved around animal-derived ingredients. From bovine hides to fish scales, collagen products have long relied on animal by-products as their sole functional base. While effective to a degree, these sources come with increasing concerns around sustainability, ethics, consumer acceptance, and supply chain volatility.

For years, the question lingered: could a vegan alternative ever match the efficacy of traditional collagen?

That question now has an answer.

A groundbreaking independent clinical study conducted by the **University of Pavia in Italy** has demonstrated that VeCollal®, a biomimetic, plant-based collagen alternative, not only matches — but in some respects even outperforms — the results historically associated with animal collagen.

With visible improvements in **skin hydration, dermal collagen density, cellulite appearance, and skin surface structure**, this research marks a turning point for the collagen category.

This comes **on the heels of a first clinical study (2023)*** that already proved **32.99% visible wrinkle reduction and enhanced skin elasticity**, and has since been **peer-reviewed and published in the Journal of Functional Foods**. Together, these two studies make VeCollal® the **first and only vegan collagen alternative** with multi-angle, scientifically validated skin benefits.

But the implications go far beyond clinical metrics. This moment represents a shift in how brands, R&D teams, and consumers will define collagen performance moving forward. The industry is no longer limited by outdated assumptions. A vegan collagen alternative is no longer hypothetical. It's clinically proven. And it's ready to scale.

*Oral supplementation of vegan collagen biomimetic has beneficial effects on human skin physiology: A double-blind, placebo-controlled study. (Yung-Kai Lin, Chia-Hua Liang, Yung-Hsiang Lin, Tai-Wen Lin, Josué Jiménez Vázquez, Anthony van Campen, Chi-Fu Chiang)

The collagen market: between growth and growing pains

The collagen sector is expanding rapidly, propelled by demand across beauty, wellness, and functional nutrition. According to a recent [Grand View Research report](#), the global collagen market was valued at USD 9.9 billion in 2024, with projections reaching USD 18.7 billion by 2030, growing at a CAGR of 11.3%. The global oral collagen supplements market alone is expected to grow from USD 1.99 billion in 2021 to USD 2.88 billion by 2028, at a CAGR of 5.5%.

But that growth comes with points of concern.

Consumer demands have evolved.

Sustainability, transparency, and animal-free claims are no longer 'nice-to-haves'—they're purchase drivers.

Brands feel the squeeze.

They must innovate to differentiate in saturated markets without compromising on compliance or efficacy.

Supply chains face pressure.

Volatility in pricing, quality, and availability of animal by-products disrupt predictability and scalability.

Regulatory scrutiny is increasing.

Global markets are tightening claims, demanding more evidence, and favoring clean-label formats.

In short: the collagen category is expanding—but the old model is running out of headroom.

Brands need an alternative that's:



Effective and proven



Scalable and cost-efficient

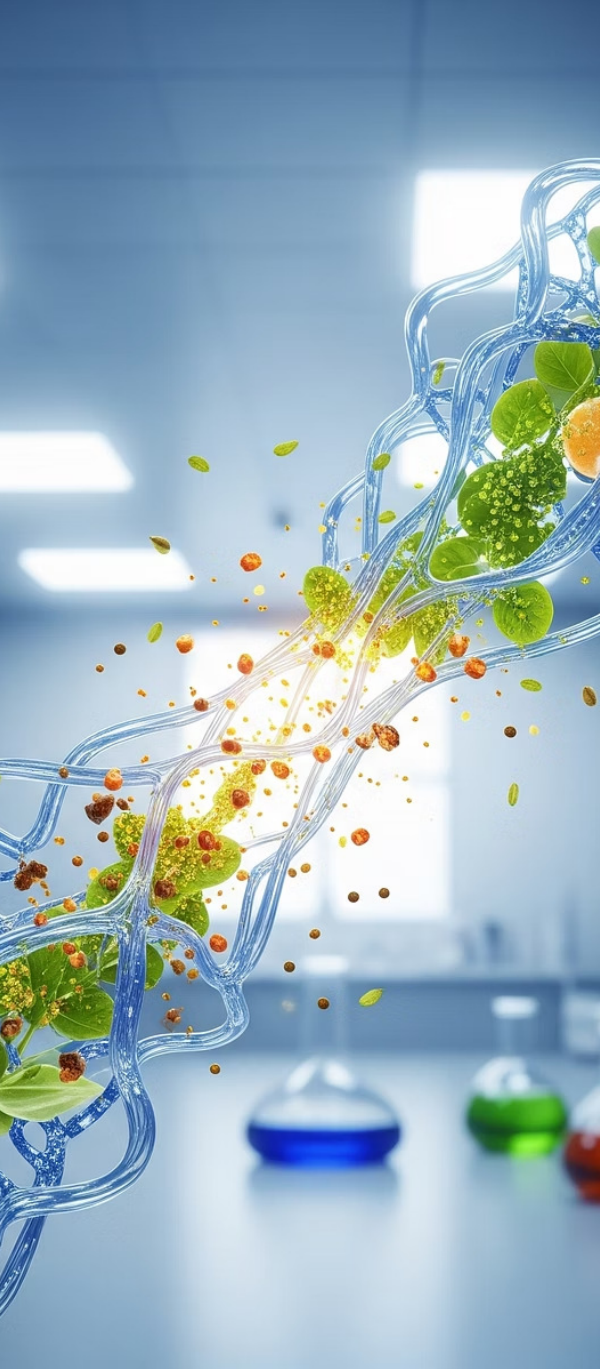


Aligned with ESG goals



Appealing to the next generation of consumers

That's where VeCollal® enters the picture.



Vegan collagen alternative: the promise, the problem, and the missing proof

The idea of a vegan collagen alternative has been circulating for over a decade. Many brands have already responded to market demand by launching so-called "collagen boosters" based on vitamin C, hyaluronic acid, or herbal blends.

But none of these truly mimic the biological role of collagen. Why? Because collagen is a complex protein with a very specific amino acid profile—rich in glycine, proline and hydroxyproline—that until recently could only be found in animal tissue.

Most "vegan" collagen products on the market are therefore not real collagen, nor are they molecularly close. They support skin indirectly, but they do not provide the necessary building blocks to trigger collagen regeneration in a biomimetic way.

Until now.

VeCollal® was developed with a different philosophy: to build a true vegan alternative that actually replicates the amino acid sequence of human type I collagen. Not just a booster. Not just a support agent. A functional, plant-based, biomimetic collagen source. Powerful inductors that stimulate the body on a genetic level to create more collagen complete this science-based approach.

That proposition remained theoretical—until science delivered proof.

The studies that change the collagen conversation

What the studies examined

In 2025, the Department of Drug Sciences at the University of Pavia conducted a randomized, double-blind, placebo-controlled clinical trial to test the efficacy of VeCollal®.

The objective was clear: to determine whether a biomimetic, plant-based collagen alternative could produce measurable cosmetic and structural improvements to the skin — and how it would compare to known effects of traditional animal collagen.

Unlike many studies in the supplement industry, this one applied instrument-based measurements — not just subjective questionnaires — to objectively assess the impact on the skin. That is a crucial distinction for the scientific and business community alike.



Study design & methodology

1

Study type

Randomized, double-blind, placebo-controlled

2

Sample size

60 healthy women aged 39–65

3

Duration

56 days (8 weeks)

4

Groups

Active (VeCollal®) vs placebo

5

Dosage

5 grams/day VeCollal®

Instrumentation:

- Antera 3D skin imaging to assess surface structure and cellulite appearance
- DermaLab ultrasound to measure dermal collagen signal
- Corneometer to measure skin hydration

These parameters allowed researchers to capture real, quantifiable changes in skin tissue, hydration, and appearance — far beyond what a consumer self-assessment could offer.

Breaking down the benefits: what the study reveals — and why it matters.

The clinical trial conducted at the University of Pavia offers more than just numbers — it offers proof that VeCollal® is a high-performance ingredient capable of delivering measurable results across a range of key skin health markers.

In this chapter, we break down each of those findings, unpack their significance, and explain why they matter for product development, brand positioning and consumer experience.



Faster results at a lower daily dose



Visible improvement in skin surface texture



-21:10% net reduction in cellulite



+21% improvement in skin hydration



+10.5% increase in dermal collagen signal

Faster results at a lower daily dose

The context:

Most collagen supplements on the market rely on high doses — 10 to 20 grams per day — and require long-term use before delivering visible effects. Many brands recommend 12+ weeks of daily intake.

For consumers, that creates friction: the powder volume is inconvenient, the flavor may be unpleasant, and the waiting time delays satisfaction. Drop-off rates are high.

Why this matters:



Easier formulation in capsules, sticks, shots or liquids



Faster consumer results = stronger word-of-mouth and repeat purchases



Lower ingredient volumes = better cost-efficiency and higher margins

What the study shows:

VeCollal® delivers clinically measurable results with just 5 grams per day, over a span of 8 weeks.

That's half (or less) of the typical dose — and in half the time.

VeCollal® unlocks a better ratio of performance vs. volume — and offers clear advantages for formulation, compliance and ROI.



Visible improvement in skin surface texture

The context:

Skin texture is one of the most visible markers of age and health. As collagen production decreases — starting around age 25 and accelerating by age 35 — the skin begins to lose firmness, smoothness and elasticity.

Consumers actively seek products that can improve the appearance of fine lines, roughness, and uneven surface structure.

What the study shows:

Using 3D optical imaging, the clinical trial found a statistically significant improvement in skin surface appearance after 8 weeks of daily VeCollal® use.

In contrast, the placebo group showed a slight deterioration over the same period.

Why this matters:

3D imaging offers objective, visual data — ideal for marketing, training and investor decks

Texture improvements deliver visible proof consumers can recognize

Performance on this front is core to anti-aging and beauty positioning

With VeCollal®, brands can confidently claim smoother, younger-looking skin — and back it up with real data.

-20.10% net reduction in cellulite

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Why this matters:

Cellulite is an emotionally charged concern — and a strong motivator for supplement use

Most competing products make unsubstantiated claims

This trial provides hard clinical evidence of improvement in a common, visible condition

This makes VeCollal® one of the few scientifically backed oral solutions for cellulite reduction, validated by third-party instrumentation and university-level clinical research.

What the study shows:

After just 8 weeks of daily 5g VeCollal® intake, participants saw a 20.10% net reduction in cellulite appearance, measured via Antera 3D skin imaging.

The placebo group, in contrast, showed no improvement — and in some cases, worsening of skin surface structure.

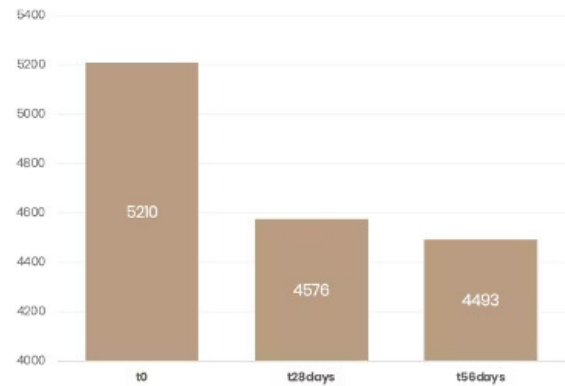


Effect On The Appearance Of Cellulite

VeCollat®

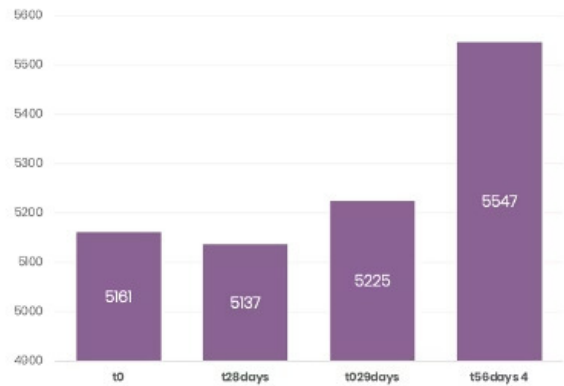
- 20,10% In Only 56 Days

Superficial Alteration Volume



Product Group

Superficial Alteration Volume



Placebo Group



+21% improvement in skin hydration

The context:

Skin hydration is a fundamental pillar of skin health. Dryness leads to irritation, reduced elasticity, dullness, and accelerated aging.

As people age — especially women entering perimenopause and menopause — the skin's ability to retain moisture declines. Hydration is also strongly associated with visible glow and comfort.

What the study shows:

Using a Corneometer, the researchers observed a +21% increase in skin hydration among VeCollal® users.

This improvement was statistically validated and significantly higher than any change observed in the placebo group.

Why this matters:

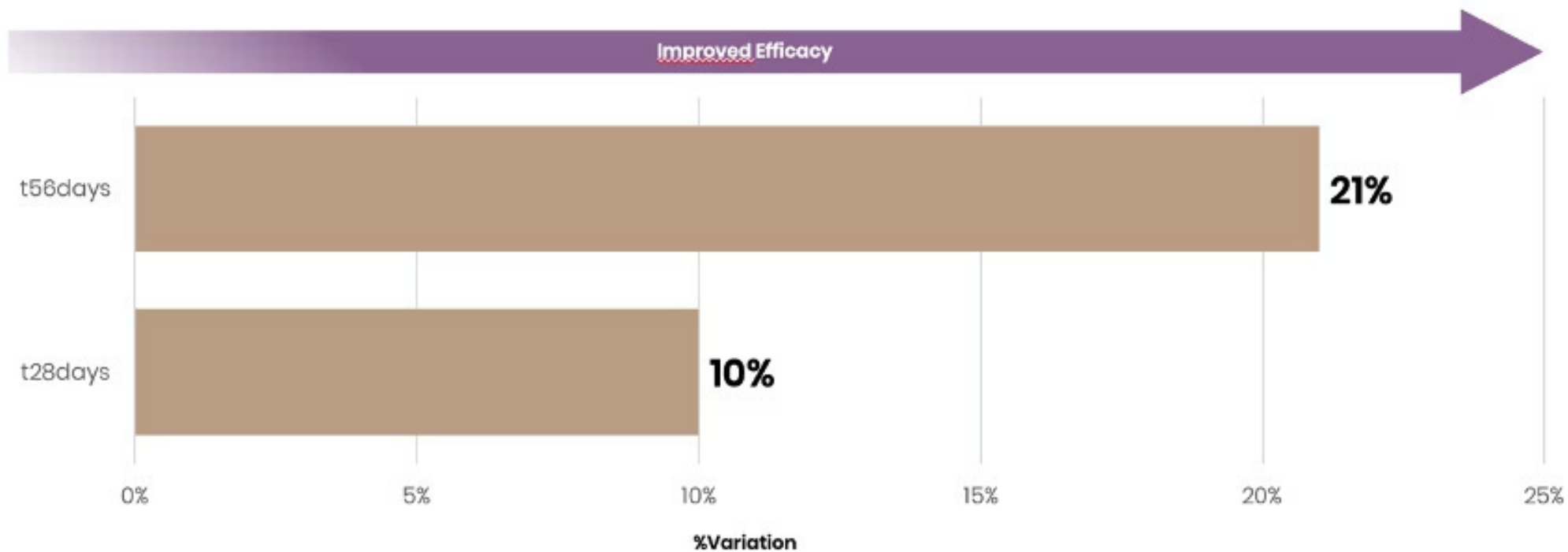
Hydration is one of the most requested and expected outcomes in nutricosmetics

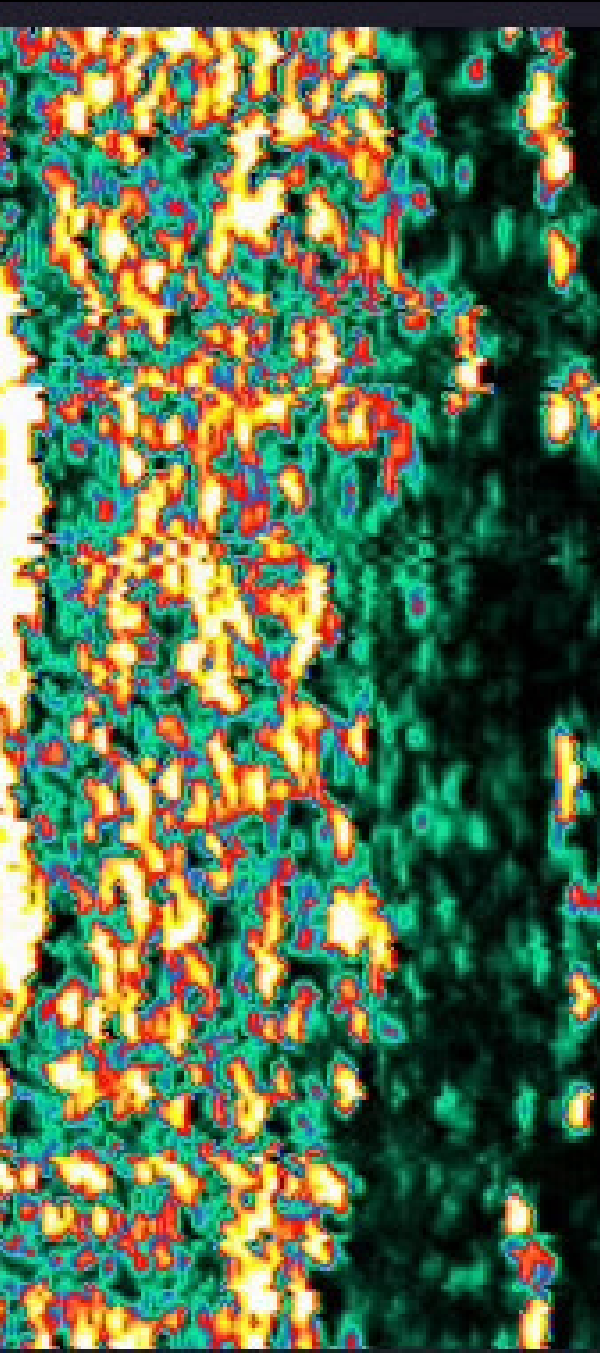
The Corneometer is a gold-standard tool — widely accepted for clinical skin testing

Moisture supports barrier function, radiance, and product satisfaction

This result enables brands to make credible claims around skin glow, plumpness, and comfort — all underpinned by real-world performance.

Moisturizing Effect





+10.5% increase in dermal collagen signal

The context:

The holy grail of any collagen supplement is this: not just supplement, but stimulate. Most products claim to support the body's own collagen synthesis, but few can prove it.

Measuring dermal collagen signal via ultrasound allows researchers to determine whether the body is indeed responding — and rebuilding.

What the study shows:

The VeCollal® group saw a **+10.5% increase in dermal collagen signal**, measured with DermaLab ultrasound tools.

This increase indicates enhanced extracellular matrix activity and collagen remodeling — a sign of true physiological effect.

Why this matters:

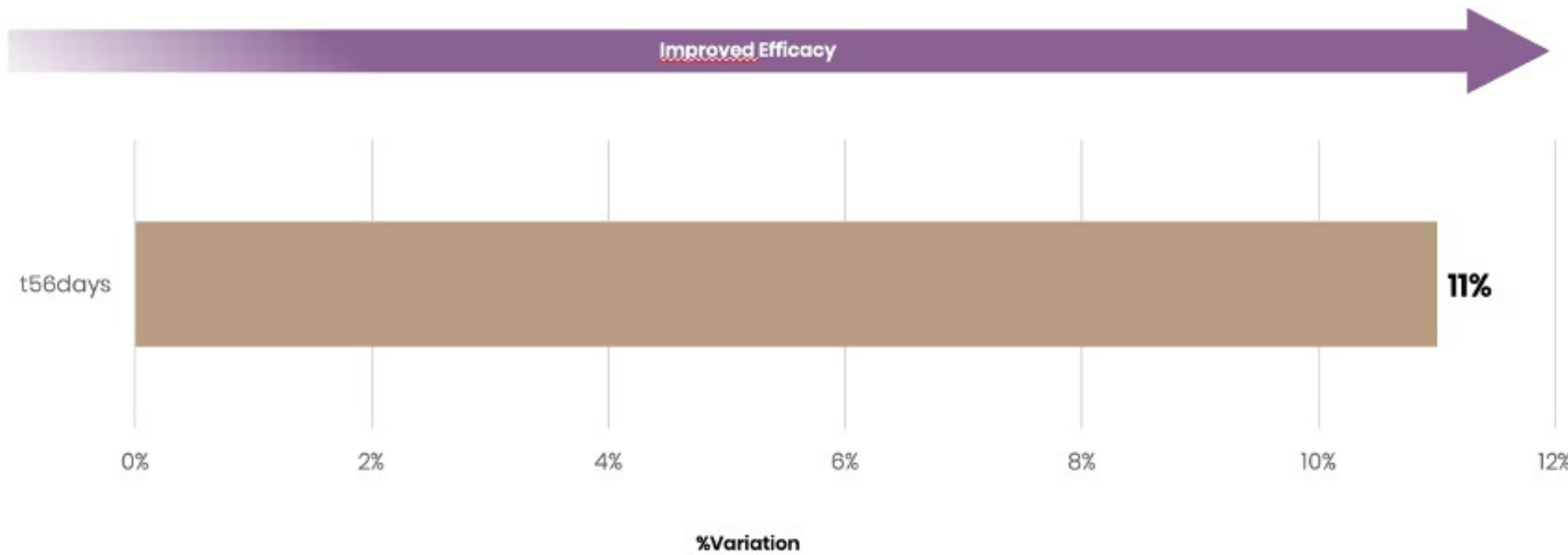
It shows actual biological activity, not just surface-level change

It validates the biomimetic principle behind VeCollal®: plant-based signals that activate real regeneration

For R&D and regulatory teams, this is core evidence of mechanism-of-action

This finding puts VeCollal® in a category of its own: not just mimicking collagen — but triggering it.

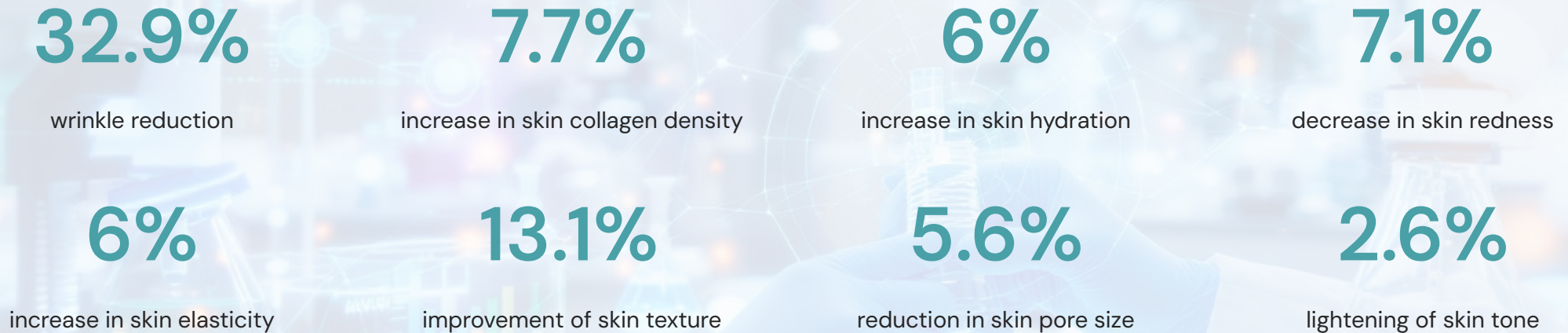
Plumping Effect



A growing body of clinical and scientific proof

These new results build on [VeCollal®'s first human clinical study](#) (2023), conducted in Taiwan, and **peer-reviewed and published in the Journal of Functional Foods (2024)***.

That earlier trial found:



❶ Combined, both studies demonstrate that **VeCollal® improves the full spectrum of visible skin aging**, making it the first vegan alternative to match — and potentially outperform — animal collagen across multiple beauty benefits.

*Oral supplementation of vegan collagen biomimetic has beneficial effects on human skin physiology: A double-blind, placebo-controlled study. (Yung-Kai Lin, Chia-Hua Liang, Yung-Hsiang Lin, Tai-Wen Lin, Josué Jiménez Vázquez, Anthony van Campen, Chi-Fu Chiang)



VEGAN
COLLAGEN
ALTERNATIVE

VEGAN
COLLAGEN
ALTERNATIVE

What does this mean for supplement brands?

A paradigm shift — and a business opportunity

This study doesn't just validate VeCollal®'s formula — it redefines the rules of the collagen game. For the first time, supplement brands can offer a vegan, animal-free collagen alternative that performs at the same level as — and in some cases better than — traditional animal-derived collagen.

The implications for product development, branding, sourcing and market positioning are profound.

The collagen category is undergoing the same evolution that plant-based milks, meat alternatives and cruelty-free cosmetics already have. Brands that move first stand to gain the most — not just in new customers, but in market credibility and brand equity.

But different roles within the decision-making unit (DMU) care about different things. Here's what this breakthrough means for each of them.



For R&D and Product Development

1

Backed by science

With a clinical trial conducted by a reputable academic institution, VeCollal® brings the kind of evidence R&D teams demand.

2

Low dosage, easier integration

Just 5g/day delivers clinically proven effects — far lower than many animal collagens, allowing for better product design and user experience.

3

No compromise on taste, solubility or stability

Plant-based doesn't mean less functional. VeCollal® is neutral-tasting, easy to formulate, and compatible with powders, sachets, tablets, shots and more.

4

Simplifies innovation

You can launch a vegan collagen product without needing to invent a new delivery system or change your production infrastructure.

For Procurement and Operations

1

Stable supply chain

Unlike animal collagen, which relies on by-products from meat and fish processing, VeCollal® uses plant-based inputs with more predictable pricing and less exposure to market shocks.

2

Certifications already in place

VeCollal® is vegan and halal certified, kosher suitable, non-GMO and allergen free — eliminating the need for multiple sourcing lines.

3

Shelf-stable, globally transportable

With fewer logistical restrictions, VeCollal® is easier to store, ship and scale internationally.





For Marketing and Brand Management

1

Taps into powerful consumer trends

Vegan. Cruelty-free.
Backed by science.
Clinically proven.
These are not niche preferences anymore — they are mainstream expectations.

2

A true differentiator

Most brands still rely on conventional collagen and weak animal-free alternatives.
VeCollal® allows you to tell a category-defining story.

3

Educates and converts

Consumers skeptical about vegan collagen can now be persuaded with scientific credibility, measured results and a clear comparative advantage.

For Executive Leadership and Strategic Decision-Makers

1

Future-proofs your product line

Vegan collagen is no longer a "nice to have." It's the next big segment in skin health — and it will be led by early adopters.

2

Aligns with ESG and CSR goals

VeCollal® helps reduce reliance on animal by-products, shrink your environmental impact and meet stakeholder expectations around sustainability.

3

Mitigates regulatory and reputational risk

With increasing scrutiny on supply chains and animal welfare, VeCollal® offers a more transparent, scalable, and ethically sound option.

4

Increases optionality

Whether you're extending a current line or launching a new one, VeCollal® offers flexibility to diversify without duplicating effort.



Summary: VeCollal[®] gives your brand the power to launch a next-generation collagen product



Vegan



Clinically validated



Scalable



Globally certified



Low-dose & high-impact



In line with modern consumer values

In a market ripe for change, you don't need to wait for the shift. You can lead it.

Conclusion: the shift is real — and it's already happening

The collagen market is entering a new era. One where science, consumer values and business strategy finally align. The data is in. The demand is there. And the moment to act is now.

"For years, vegan collagen alternatives lived in a grey zone: promising in theory, unproven in practice. Brands hesitated, scientists remained sceptical, and consumers settled for compromise — or gave up on collagen altogether. But with the University of Pavia study, we now have something concrete: hard evidence that a biomimetic, plant-based collagen alternative can match — and even exceed — the effects of animal collagen in a controlled, instrument-measured trial. That's not marketing spin. That's a scientific milestone."

This matters for three key reasons:



1. Scientific validation closes the credibility gap.

No more guesswork. No more hope-based marketing. You now have a vegan collagen solution that stands up to rigorous, academic testing — and comes out strong. With results including:

- +21% skin hydration
- +10.5% increase in dermal collagen signal
- Visible improvements in 3D skin appearance
- -20.10% net cellulite reduction

... all achieved with a low 5g daily dose in just 8 weeks. That performance, combined with plant-based sourcing, opens the door to innovation without trade-offs.



2. The consumer shift is unstoppable.

Today's consumer expects more. They want:

- Vegan, cruelty-free formulations
- Clinically proven effectiveness
- Ethical sourcing and clean labels
- Tangible results they can feel and see

VeCollal® answers that call. It fits not just into a niche lifestyle — but into the mainstream evolution of beauty, wellness and ethical consumption. Waiting is not a strategy anymore. Consumers are already looking — and switching.



3. There's a first-mover advantage on the table.

This is a moment for bold brands. For product managers and founders, R&D teams and executives who see the signs and act before the rest. Because history doesn't wait for consensus — it rewards those who lead.

VeCollal® offers a rare convergence of:

- Product performance
- Market readiness
- Operational viability
- Strategic alignment

It's not just a new ingredient. It's a new conversation — and an opportunity to own it.

Next steps: lead the change, don't chase it.

Are you're ready to:

- Extend your product line with a **proven vegan collagen?**
- Tap into **growing consumer demand** with a clear story and science to back it up?
- Reduce sourcing complexity and **future-proof your supply chain?**
- Differentiate your brand in a crowded category?
- Hit ESG and sustainability goals **without compromising performance?**

...then it's time to connect. Let's talk about how VeCollal® can help your brand make the next big move in skin health and supplement innovation.

 info@vecollal.eu

 www.vecollal.eu