

**NEW**  
EFFICACY STUDIES



## SYN<sup>®</sup>-COLL

Reverse visible signs of photo-aging  
in just 4 weeks



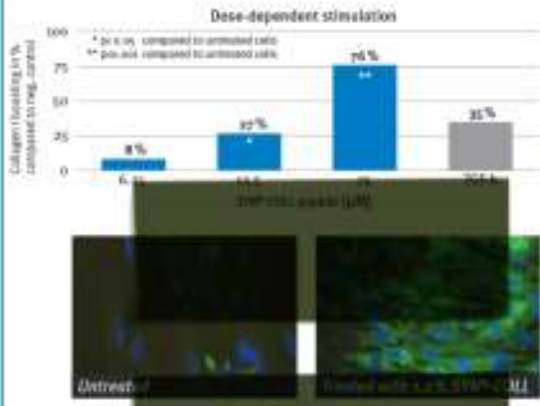
HEALTH · NUTRITION · MATERIALS



*In vitro* – dual action on the collagen

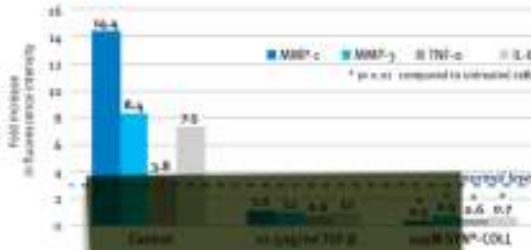
**BOOSTS COLLAGEN!**

**SYN<sup>®</sup>-COLL increases the collagen level +76% in the skin!**



**PROTECTS COLLAGEN!**

**SYN<sup>®</sup>-COLL promotes the skin's power against aging!**



The expression of cytokines and MMPs after chemically induced (PMA) stress (5% h) in normal human keratinocytes (NHK).

The fold increase in fluorescence intensity is compared to control cells (=1.00).

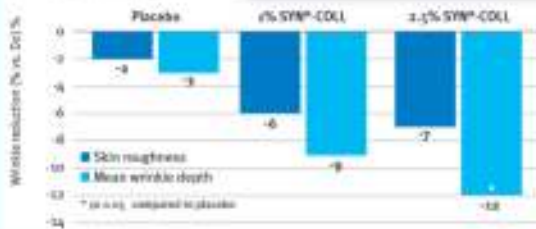
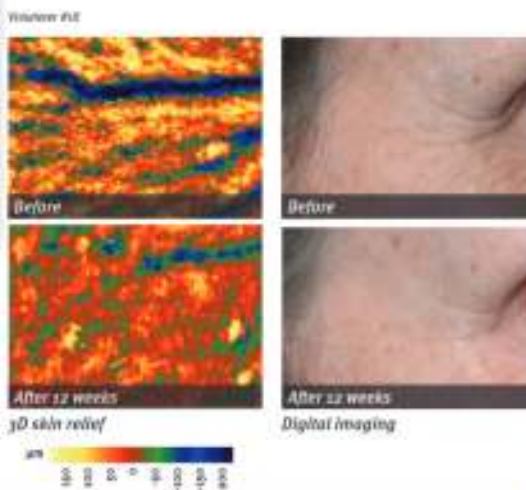
*In vivo* on Caucasian skin

**SYN<sup>®</sup>-COLL significantly reduces wrinkles vs. placebo!**

To prove the anti-wrinkle effect of SYN<sup>®</sup>-COLL, a study with 35 healthy volunteers per group has been performed. Two formulations of SYN<sup>®</sup>-COLL (1% and 2.5%) and a placebo were applied twice daily for 84 days. Wrinkle parameters have been measured by the Primos<sup>®</sup> technique.



3D skin relief, skin topography indicated by different colours using Primos<sup>®</sup> technique. Use level: 2.5% SYN<sup>®</sup>-COLL.



# Powerful collagen boosting Mechanism

With age, skin loses its elasticity and firmness, leaving visible fine lines, wrinkles and sagging skin as evidence of the signs of aging. This is accelerated when induced by external factors such as chronic UV exposure.

Collagen is one of the major building blocks of the extra-cellular matrix. It serves as a natural structural support, "holding" the skin together, and giving it firmness and elasticity. With age, or in particular, when induced by chronic UV exposure, collagen breaks down and skin gets thinner and weaker, leading to the formation of wrinkles and sagging skin.

SYN®-COLL – a small molecular synthetic peptide – has been designed to prevent the formation of wrinkles and to reduce their appearance. The SYN®-COLL molecule has a dual effect. Firstly, it boosts collagen by mimicking the human body's own mechanism to activate latent transforming growth factor beta, TGF-β (Tissue Growth Factor), a key element in the synthesis of collagen. It also protects collagen from degradation through the inhibition of matrix metalloproteinases (MMP). Both activities work synergistically to maintain complete structural integrity of the skin.

## Key facts

### Unique product features

- SYN®-COLL is a small tripeptide with a unique sequence that imitates the human body's own mechanism to produce collagen via TGF-β
- Boosts Collagen significantly and also inhibits its degradation
- Compared to other anti-aging peptides on the market, SYN®-COLL gets better results *in vivo* with superior cost-effectiveness
- Proven ethnic anti-aging expert
- Glycerine-based aqueous solution

### Benefits

- Visibly reduces appearance of wrinkles in age-prone zones
- Significantly reverses visible signs of photo-aging damage
- Rejuvenates and smoothens the skin
- Refines pore appearance
- Improves skin firmness and elasticity
- Improves skin texture

### Cosmetic applications

- Any type of anti-aging products treating age-prone zones to reduce the appearance of wrinkles and fine lines
- Volume-boosting products to improve facial contour
- Treatments concentrating on pore size reduction
- Suitable for facial and body care

### Suggested concentration

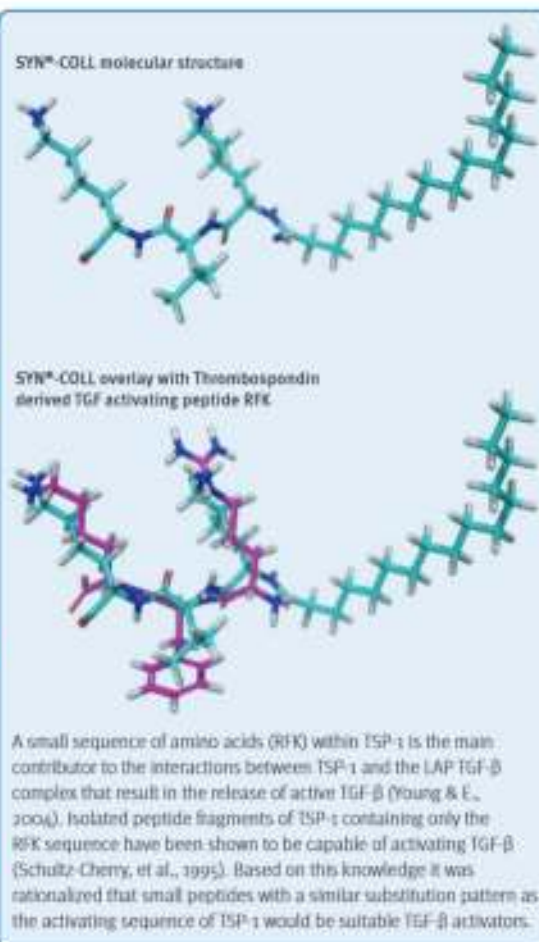
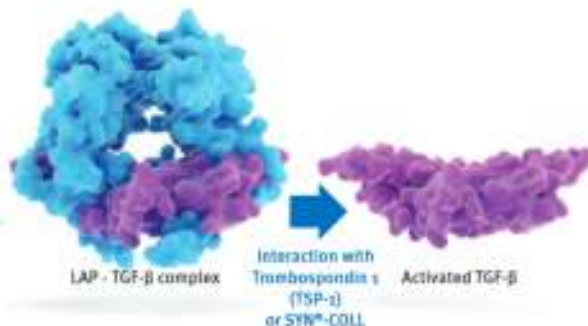
1–3% SYN®-COLL

### INCI name (active)

Palmitoyl Tripeptide-5

Collagen represents the main component of the ECM (Extracellular Matrix) of the dermal connective tissue. Thrombospondin 1 (TSP-1) is a multifunctional protein that activates the latent (but biologically inactive) form of TGF-β, known as the key element in the synthesis of collagen.

This innovative mechanism made SYN®-COLL the first TGF-β booster on the market.



## Revealing the Power of Chinese Women

DSM recently explored the beauty aspirations of Chinese women and their attitudes toward aging. Our research indicated a strong contrast in women's perceived aging signs to those in the western world and additional influences from the environment. Recent scientific publications revealed that Asian skin ages similarly but later than Caucasian skin\*.

This indicated a need to tailor the existing SYN®-COLL peptide to the precise needs of Chinese consumers regarding anti-aging treatment – beyond the treatment of lines and wrinkles.

Taking this as a starting-point, a new *in vivo* study was conducted by DSM on Chinese volunteers. It revealed a reduction in the appearance of lines and wrinkles, even when combating the effects of photo-aging.

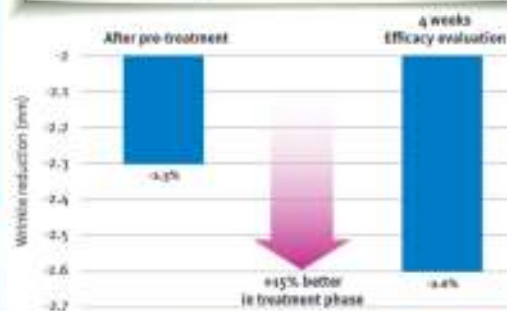
These results – achieved in just one month – are statistically better than a competitive benchmark. SYN®-COLL also helps reveal a more lifted, sculpted look, and refined pore appearance for smoother, younger-looking skin.

### SYN®-COLL efficacy study *in vivo* vs. a competitive peptide

vs. a competitive benchmark, an *in vivo* efficacy study was conducted amongst 31 female Chinese volunteers with an average age of 46. A moisturizer containing 2.5% of active ingredient was applied twice daily. Wrinkle evaluation was measured by the FORTIS technique.

**+15% BETTER EFFICACY  
IN JUST ONE MONTH!**

**SYN®-COLL significantly out-performs  
a competitive benchmark!**



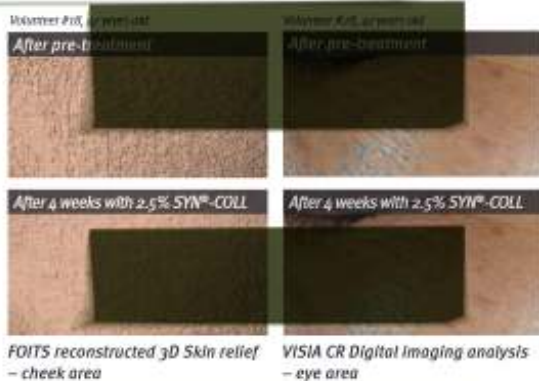
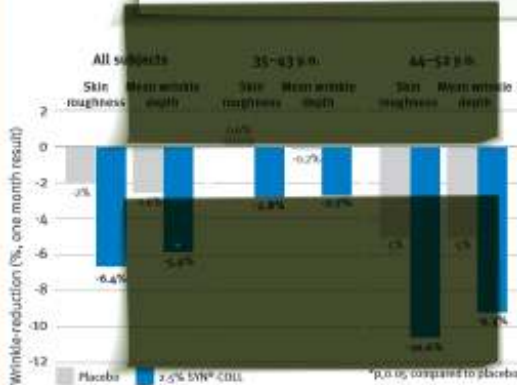
\* Skin aging: a comparison between Chinese and European populations. A pilot study. S. Naoussou-Arthart et al. Journal of Dermatological Science (2005) 40, 187-192

**NEW**  
EFFICACY STUDIES  
ON ASIAN SKIN

**SYN<sup>®</sup>-COLL efficacy study in vivo vs. placebo**

SYN<sup>®</sup>-COLL efficacy was evaluated in an eight-week, split-face, vehicle-controlled, randomized study conducted among 33 female Chinese volunteers with an average age of 43. 2.5% SYN<sup>®</sup>-COLL containing moisturizer was applied twice daily. Results evaluations were performed by the FOITS and Cutometer<sup>®</sup> techniques, pictures taken by VISIA CR.

**FAST ACTION** SYN<sup>®</sup>-COLL significantly reverses signs of photo-aging damage in just 4 weeks – better results for those in older age groups!



**SYN<sup>®</sup>-COLL**  
helps reveal a more lifted, sculptured look!

**+7% SKIN FIRMNESS**  
improvement in just 4 weeks

**+5% SKIN ELASTICITY**  
improvement in just 4 weeks



**RESULTS: 77%**

of in-vivo study participants felt the formula with SYN<sup>®</sup>-COLL visibly improved the firmness of their skin.

**SYN<sup>®</sup>-COLL Vs. PORE VISIBILITY**  
60% of volunteers noticed visible pore size reduction in just 4 weeks!



3D skin relief, graphically reconstructed from the FOITS data on the cheek area

VISIA CR Digital imaging, pore area highlighted

## Europe

DSM Nutritional Products Europe Ltd.  
P.O. Box 2676, 4002 Basel  
Switzerland  
Phone: +41 61 815 7777  
Fax: +41 61 815 7860  
Email: [info.pc-emea@dsm.com](mailto:info.pc-emea@dsm.com)

## Asia Pacific

DSM Singapore Industrial Pte Ltd.  
trading as DSM Nutritional Products Asia Pacific  
30 Pasir Panjang Road  
Mapletree Business City #13-31  
Singapore 117440  
Phone: +65 6632 6617  
Fax: +65 6632 6600  
Email: [info.pc-apac@dsm.com](mailto:info.pc-apac@dsm.com)

## North America

DSM Nutritional Products, LLC  
45 Waterview Boulevard, Parsippany, NJ 07054  
United States of America  
Phone: +1 800 526 0189  
Fax: +1 973 257 8580  
Email: [info.pc-na@dsm.com](mailto:info.pc-na@dsm.com)

## Latin America

DSM Produtos Nutricionais Brasil S.A.  
Avenida Engenheiro Billings, 1729 – Prédio 31  
Sala A - CEP:05321-010, São Paulo – SP  
Brasil  
Phone: + 55 11 3760 6409  
Fax: + 55 11 3760 6492  
Email: [info.pc-latam@dsm.com](mailto:info.pc-latam@dsm.com)

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