

SYN[®]-TC

Experience a new dimension of skin
smoothing in only 28 days

Total Collagen Care

Looking young and beautiful is widely accepted to be a source of professional success and personal happiness. Collagens play a major role in the skin, ensuring proper functionality and thus perfectly smooth, young-looking skin. During the process of ageing our body's natural production of collagen in the skin decreases, and as its functionality is reduced typical signs of ageing become visible.

Whilst traditional anti-ageing approaches mostly focus on dermal collagen type I, SYN[®]-TC follows a more holistic approach that focuses on total collagen care. A particular focus is set on collagen type III – the so-called youth collagen – that is known for its skin smoothing properties, especially in young skin. Additional focus is set on the collagens of the dermal-epidermal junction (DEJ), especially on collagen IV, VII and XVI, the so-called anchoring collagens that are essential for skin functionality and support skin firmness.

Key facts

Unique Product Features

- Patented synthetic Tri- and Tetrapeptide technology
- SYN[®]-TC significantly increases *in vitro* the amount of collagens to facilitate their unique contribution to beautiful smooth skin
- Combines best performance in a tailor made peptide complex

Benefits

- Skin is smoother with a softer touch and improved overall young looking appearance
- Skin appears plumper
- Skin appears firmer
- Skin elasticity is improved
- Appearance of fine lines and wrinkles is visible reduced

Cosmetic Application

- Skin smoothing products
- High performing facial
- Anti-ageing formulas
- Anti-wrinkle and anti-photo ageing solutions
- Plumping beauty products

Suggested Concentration

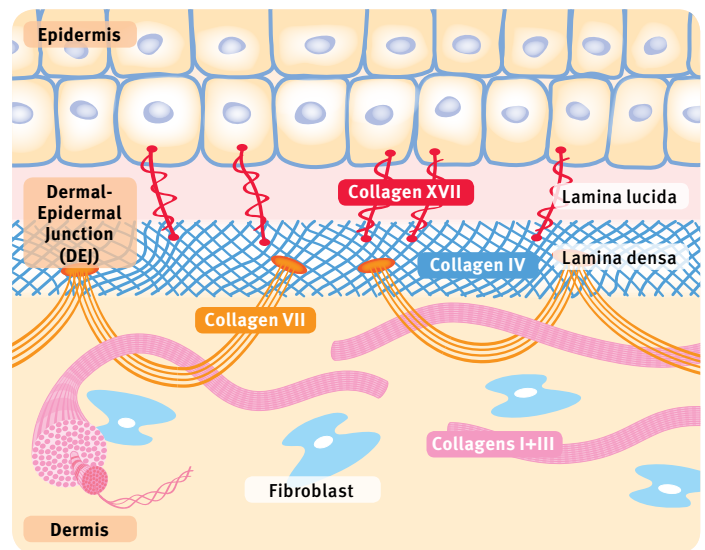
- Recommended concentration: 2.5%

INCI Name

Glycerin, Aqua, Tetradecyl Aminobutyrylvalylaminobutyric Urea Trifluoroacetate, Palmitoyl Tripeptide-5, Palmitoyl Dipeptide-5 Diaminobutyryl Hydroxythreonine

Mechanisms

Collagens are the most abundant proteins in the skin, making up 75 percent of the skin proteins. Collagens are mainly responsible for the skin's strength and smoothness as they provide structure and firmness. However, over time collagen levels decrease and their proper function is reduced. SYN[®]-TC is a synthetic peptide-based complex tailor-made for optimal activity. *In vitro*, SYN[®]-TC peptides increase the formation of undamaged, stable and homogeneous collagens to facilitate their unique contribution to beautiful smooth skin.



The picture above shows the tight interaction between the dermal collagens I and III and the DEJ collagens IV, VII, and XVII. Each of these collagens varies in structure and functionality. DSM's key finding was that in order to ensure highest collagen level and functionality *in vitro* different tailor-made peptide sequences have to be combined. SYN[®]-TC is a combination of those peptide sequences that work *in vitro* on dermal collagens I and III as well as on the DEJ collagens IV, VII, and XVII – all in one product.

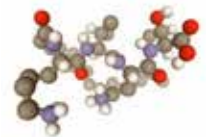
Chemical structure

Palm-Lys-Val-Lys-OH

INCI: Palmitoyl Tripeptide-5

MW: 840 g/Mol

Activity: Significant effect on collagen III



Tetradecylaminocarbonyl-Dab-Val-Dab

INCI: Tetradecyl Aminobutyrylvalylaminobutyric Urea Trifluoroacetate

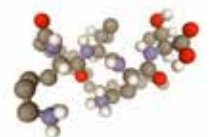
MW: 785 g/mol



Palm-Lys-Val-Dab-Thr-OH

INCI: Palmitoyl Dipeptide-5 Diaminobutyryl Hydroxythreonine

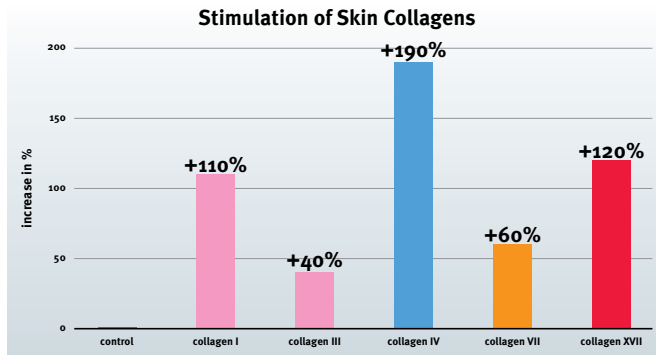
MW: 913 g/mol



Efficacy

In vitro

Collagen synthesis

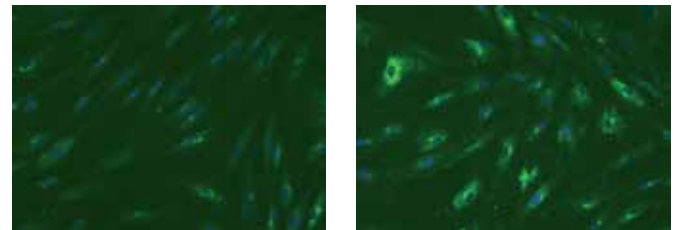


Results:

SYN®-TC leads to a significant up-regulation of dermal collagens and DEJ collagens.

Collagen III stimulation

Young skin is characterized by high levels of Type III collagen, accounting for its softness and suppleness.



Negative control

SYN®-TC (10 µmol PALM KVK)

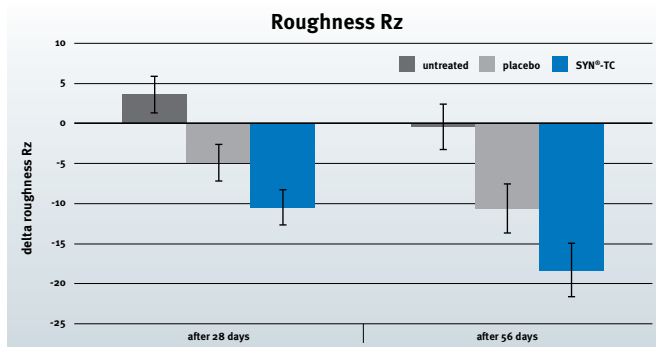
Results:

SYN®-TC increases production of collagen III, the youth collagen, in human fibroblasts.

In vivo

Skin roughness (smoothness)

Formulation with/without 2.5% SYN®-TC. Application twice daily to 30 volunteers, age 30–50y (average 42y) using PRIMOS technology on the forearm.

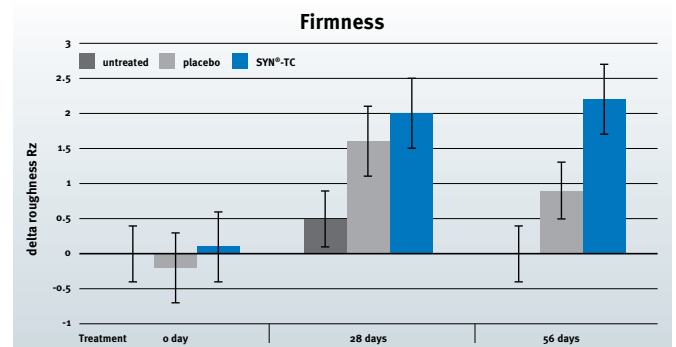


Results:

SYN®-TC shows a significant effect (−9.1%) after just one month, and the effect is even more pronounced after two months (−12.2%).

Skin firmness

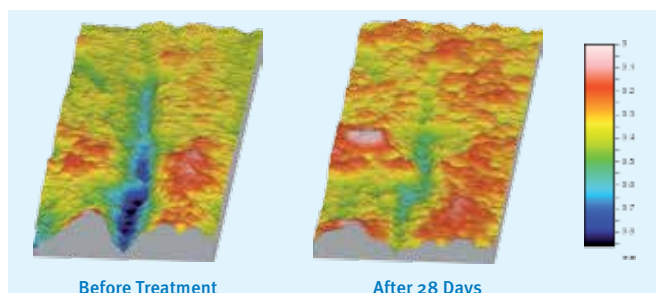
Formulation with/without 2.5% SYN®-TC. Application twice daily to 30 volunteers, age 30–50y (average 42y) on forearm, using Cutometer®.



Results:

SYN®-TC shows a significant skin firming effect after just one month (+7.6%) that is further enhanced after two months (+10.8%).

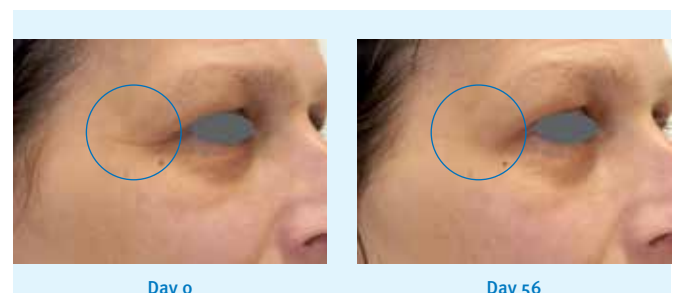
3D computer-based analysis of crow's foot area



Results:

The skin surface becomes smoother with an overall reduced appearance of wrinkles (depth, area, volume) in only 28 days.

Macro photographs of crow's foot area



Results:

Wrinkle appearance in the crow feet area is reduced, the skin looks younger.

The Personal Care division of DSM Nutritional Products is a leading supplier of vitamins, bio-active ingredients and UV filters to the cosmetics industry. The brand Pentapharm forms our innovative portfolio of active ingredients for skin care. Every product comes with claim substantiation and an extensive product dossier, including safety aspects and *in vivo* as well as *in vitro* studies.

We offer innovative ingredients produced by means of peptide synthesis, extraction of natural substances and biotechnology. Our ALPAFLOR® product line extends our portfolio in the broad field of natural substances; following strict organic rules, the high-quality extracts developed are certified by ECOCERT and NATRUE as raw materials for natural and organic cosmetics.

Our knowledge and years of experience in marketing and claim substantiation, our comprehensive support in formulation and application, and our regulatory expertise, together with a global distribution network, enable us to best meet our customers' needs.

For more information, please visit us online at www.dsmnutritionalproducts.com

Europe

DSM Nutritional Products Europe Ltd.
P.O. Box 2676, 4002 Basel
Switzerland
Phone: +41 61 815 7777
Fax: +41 61 815 7860
Email: marketing.dnpe@dsm.com

Asia Pacific

DSM Nutritional Products Asia Pacific
2 Havelock Road #04-01
Singapore 059763
Phone: +65 6632 6617
Fax: +65 6632 6600
Email: Unlimited.PersonalCare@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: webshop.dnpna@dsm.com

Latin America

DSM Productos Nutricionais Brasil Ltda.
Av. Engº Billings, 1729 Prédio 31
Jaguaraé – São Paulo – SP – Brasil 05321-010
Phone: + 55 11 3760 6409
Fax: + 55 11 3760 6492
Email: america-latina.dnp@dsm.com