

# SYN<sup>®</sup>-Peptides

## SYN<sup>®</sup>-TACKS



Boosting beauty through  
the dermal-epidermal junction



# Slow down the touch of time Mechanism

It's the dermal-epidermal junction (DEJ) that connects the dermis to the epidermis. This interface between the two skin layers is vitally important in the ageing process. The functionality of the dermal-epidermal junction depends strongly on the activity of specific structural proteins, in particular various Collagen types, Laminins, and Integrins.

The cells of the epidermis are continually moving upward, building up the stratum corneum layer at the surface and then finally desquamate. This natural movement of keratinocytes is an integral part of skin renewal. It would not be possible without the dermal-epidermal junction (DEJ) maintaining the relationship between the two main layers of skin, allowing for healthy communication from the top all the way down to the bottom.

The DEJ is also responsible for the exchange of nutrients back and forth from the epidermis to the dermis. Vitamins, antioxidants and other nutrients are needed for cellular repair, new cell production, protection from outside elements and oxidative stress and more. In youth, this junction is an intact, wavy terrain. At around the age of 30 as we start to age visibly, it tends to flatten out. If the junction completely flattens the communication and nutrient exchange comes to a halt, the skin is losing elasticity and firmness and starts to wrinkle.

## Key facts

### UNIQUE PRODUCT FEATURES

- Specific, patented combination of two highly active synthetic peptides
- Significantly stimulates Laminin V, Collagens IV, VII and XVII, and Integrin  $\beta 4$  all at once
- Restructures skin by improving anisotropy
- Improves molecular communication and structural integrity

### BENEFITS

- Improves skin tonicity, firmness, and suppleness after only two months
- Improves nutrient exchange, reduces signs of premature skin ageing and damage
- Smoother skin and reduced appearance of wrinkles
- Rejuvenated, more compact skin

### COSMETIC APPLICATION

- Anti-wrinkle and anti-ageing products
- Skin restructuring and smoothing products
- Skin nourishing and skin repair treatments

### SUGGESTED CONCENTRATION

1% SYN®-TACKS

### INCI NAME

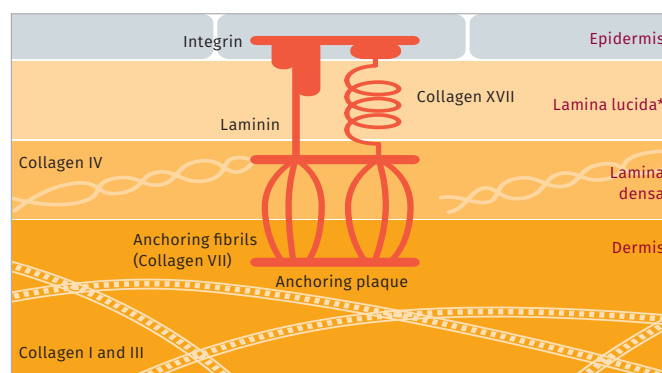
Palmitoyl Dipeptide-5 Diaminobutyroyl Hydroxythreonine, Palmitoyl Dipeptide-5 Diaminoxybutyrate

The DEJ that provides structural and functional integrity to the skin, starts to weaken at around the age of 30. This process goes along, and is even accelerated by external influences such as UV light, with decreasing skin compactness, elasticity and a lack of skin firmness.

As a rule of thumb, skin can be characterized as follows:

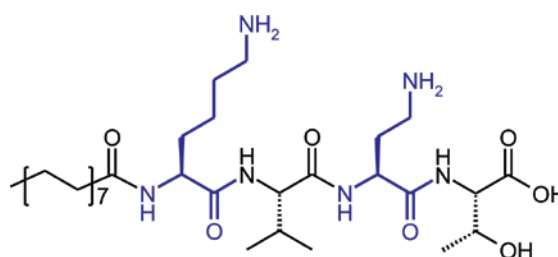
Young skin → folded DEJ → even skin, no wrinkles  
Mature skin → even DEJ → wrinkles, less elasticity & firmness

SYN®-TACKS significantly stimulates Laminin V, Collagens IV, VII and XVII and Integrin  $\beta 4$ . Only by this broad-spectrum activity it is guaranteed to achieve the utmost structural benefit for the skin. By increasing the amount of these proteins the whole structure of the DEJ is improved. This finally leads to a visible cosmetic benefit.



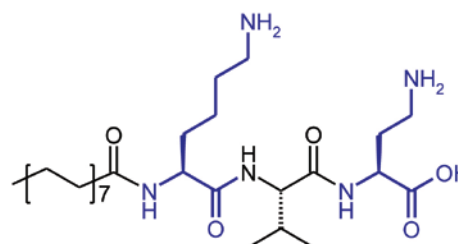
\*DEJ formed out of Lamina lucida and Lamina densa.

### Chemical structures:



Palm-Lys-Val-Dab-Thr-OH

INCI: Palmitoyl Dipeptide-5 Diaminobutyroyl Hydroxythreonine



Palm-Lys-Val-Dab-OH

INCI: Palmitoyl Dipeptide-5 Diaminoxybutyrate

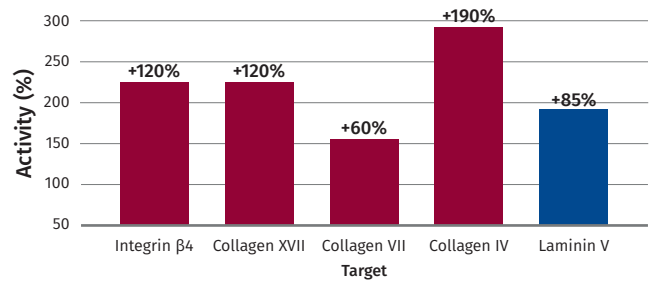
# Efficacy

## In vitro

Stimulation of the synthesis of relevant DEJ proteins by Palm-Lys-Val-Dab-Thr (50  $\mu$ M, in blue) and Palm-Lys-Val-Dab (100  $\mu$ M, in orange).

### Results

All tested proteins are significantly upregulated.



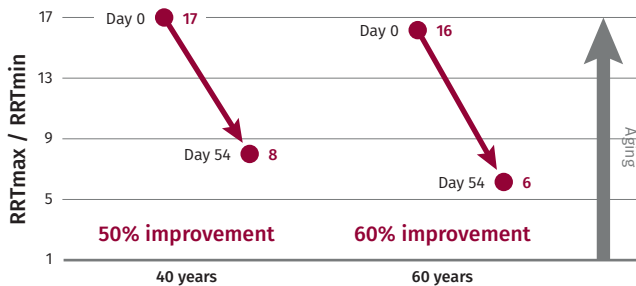
## In vivo

In a human study on 30 healthy volunteers the product has been tested at a 1% level. Measurements have been performed either at day 56 or day 84 depending on the protocol.

### Skin anisotropy

Anisotropy is a key parameter that describes the ageing process in the dermis. As we age, anisotropy is increasing and these changes can be measured via the so-called RRT (Resonance Running Time).

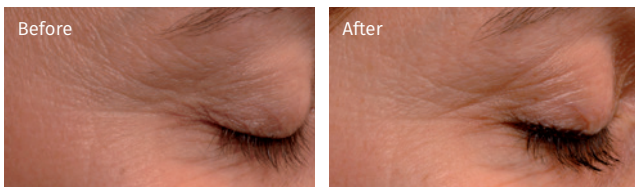
The higher the RRT is, the less organized is the collagen network and the skin is less resilient.



### Results:

- The anisotropy of collagen fibers increases. SYN®-TACKS treatment leads to a “younger” collagen anisotropy.
- SYN®-TACKS improves skin anisotropy up to 62%.

### Macrophotograph

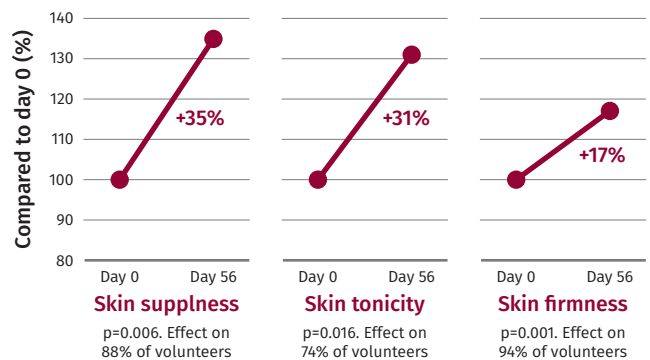


Macrophotograph of a 45-year-old volunteer after 56 days of treatment with 1% SYN®-TACKS shows the benefit of using the product.

### Results

- Visible reduction of wrinkle appearance.
- SYN®-TACKS has been excellently rated in the evaluation questionnaire – 87% would purchase the product.

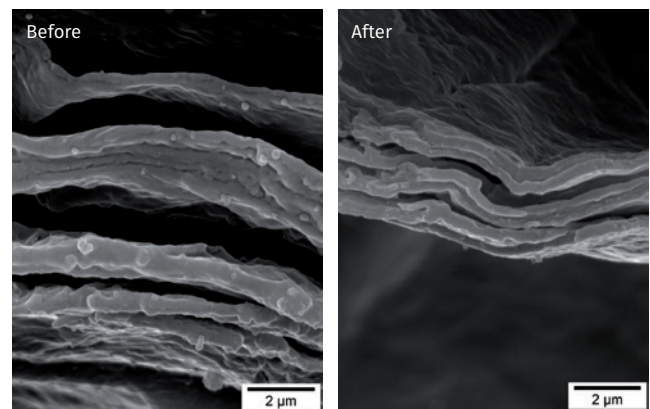
### Cutometer measurements



### Results

SYN®-TACKS improves skin tonicity, firmness, and suppleness after only two months.

### Tape stripping



Scanning electron microphotographs of tape stripping of a 62-year-old volunteer after 84 days of treatment with 1% SYN®-TACKS.

### Results

SYN®-TACKS improves cellular cohesion up to 23%, showing improved epidermal compactness.

For more information, please visit [www.dsm.com/personal-care](http://www.dsm.com/personal-care)

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