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# SYN<sup>®</sup>-AKE

## Stop wrinkling – keep laughing

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## Introduction

Lines caused by facial expressions are always visible. We use about 60 muscles while communicating both through speech and with facial expressions. Frowning, the lifting of eye-brows, laughing, pulling a face are some typical facial expressions that we use to communicate. As time passes and with frequent use of these facial movements, these wrinkles persist and become permanent deep wrinkles on the forehead, laughter lines and crow's feet. Besides injection there is a clear consumer need for effective, safe topical treatments.

SYN<sup>®</sup>-AKE is a small molecular weight synthetic peptide that smoothes expression lines by topical application.

SYN<sup>®</sup>-AKE has a natural inspired mechanism. It mimics the activity of Waglerin-1, a natural occurring peptide found in temple viper venom (*Tropidolaemus Wagleri*). Waglerin-1 has a strong ability to relax muscle contraction.

## Key facts

### Unique product features

- Synthetic tripeptide with mol weight below 500 Da
- Reversible antagonist of the muscular nicotinic acetylcholine receptor (mnAChR)
- Blocks Na<sup>+</sup> uptake at the postsynaptic membrane to attenuate muscle cell contractions
- Mimics Waglerin-1 functionality, a peptide found in the venom of the temple viper
- Safe for topical applications
- Preservative-free, glycerine-based aqueous solution

### Benefits

- Age-killing effect particularly effective against expression lines
- Visible deep wrinkle smoothing after only one month
- Helps your face to relax without losing the ability to express yourself

### Cosmetic application

- Age-defying products particularly effective against expression lines
- Intensive wrinkle-smoothing products

### Suggested concentration

1–4% SYN<sup>®</sup>-AKE

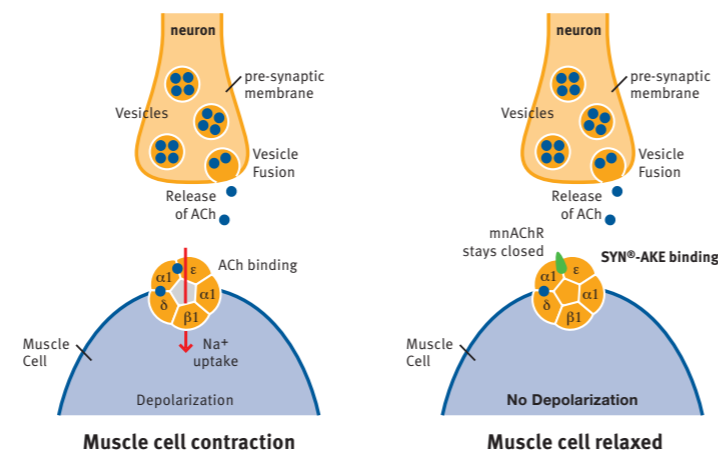
### INCI name

Glycerin, Aqua, Dipeptide Diaminobutyryl Benzylamide Diacetate

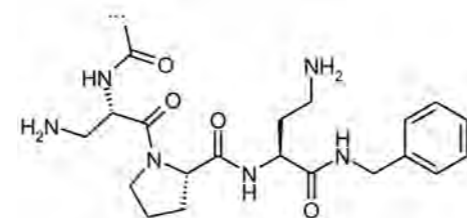
## Mechanism

SYN<sup>®</sup>-AKE is based on a patented mechanism. It mimics the essential amino acid sequence of the Waglerin-1 functionality. SYN<sup>®</sup>-AKE's safety and activity has been thoroughly tested.

Its effect focuses on an immediate and lasting relaxation of mimicry wrinkles by blocking the neuronal transmission on the Nicotinic Acetylcholine receptor. The peptide is an antagonist of the muscular nicotinic acetylcholine membrane's receptor (mnAChR). As the muscular nicotinic ACh receptors are blocked, the ion channel remains closed. There is no uptake of Na<sup>+</sup> and the muscle cells stay relaxed. The transmission of nerve impulses to the muscles is inhibited and facial muscles are relaxed.



### Chemical structure: SYN<sup>®</sup>-AKE

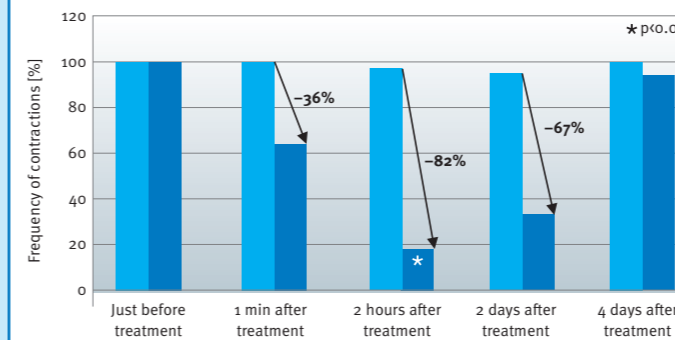


INCI: Dipeptide Diaminobutyryl Benzylamide Diacetate



## Efficacy

### In vitro



The efficacy of the SYN<sup>®</sup>-AKE tripeptide (0.5 mM) has been demonstrated *in vitro* by measuring the frequency of contraction of the innervated muscle cells as a function of the incubation time.

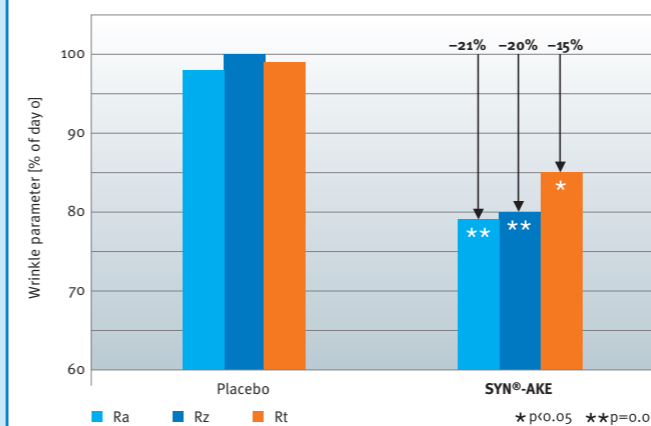
### Results:

- Reduces muscle cell contraction significantly
- Fast-acting
- Long-lasting
- Fully reversible

### In vivo

#### SYN<sup>®</sup>-AKE – Age-killing effect

The measurement of the smoothing and anti-wrinkle effect of SYN<sup>®</sup>-AKE (4%) was compared to a placebo. A cream was applied to the forehead twice daily for 28 days. The study included 15 volunteers per group (age 40–60).



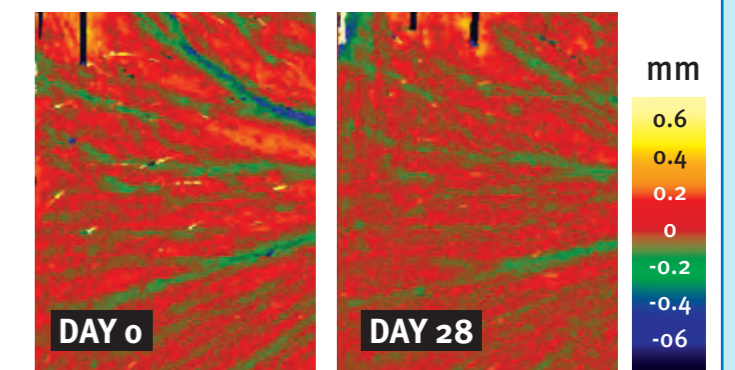
### Results:

Significant improvement in all parameters:

- Up to 52% wrinkle reduction after 28 days
- Measurable smoothing effect on 80% of the volunteers
- Measurable wrinkle reduction on 73% of the volunteers

#### Wrinkles on crow's feet

Measurement of the smoothing (Ra) and anti-wrinkle effect (Rz and Rt) of SYN<sup>®</sup>-AKE (4%) measured on the crow's feet after 28 days.



### Results:

- Depth of wrinkle is visibly reduced
- Overall visibly less wrinkles and a smoother and more even skin surface

