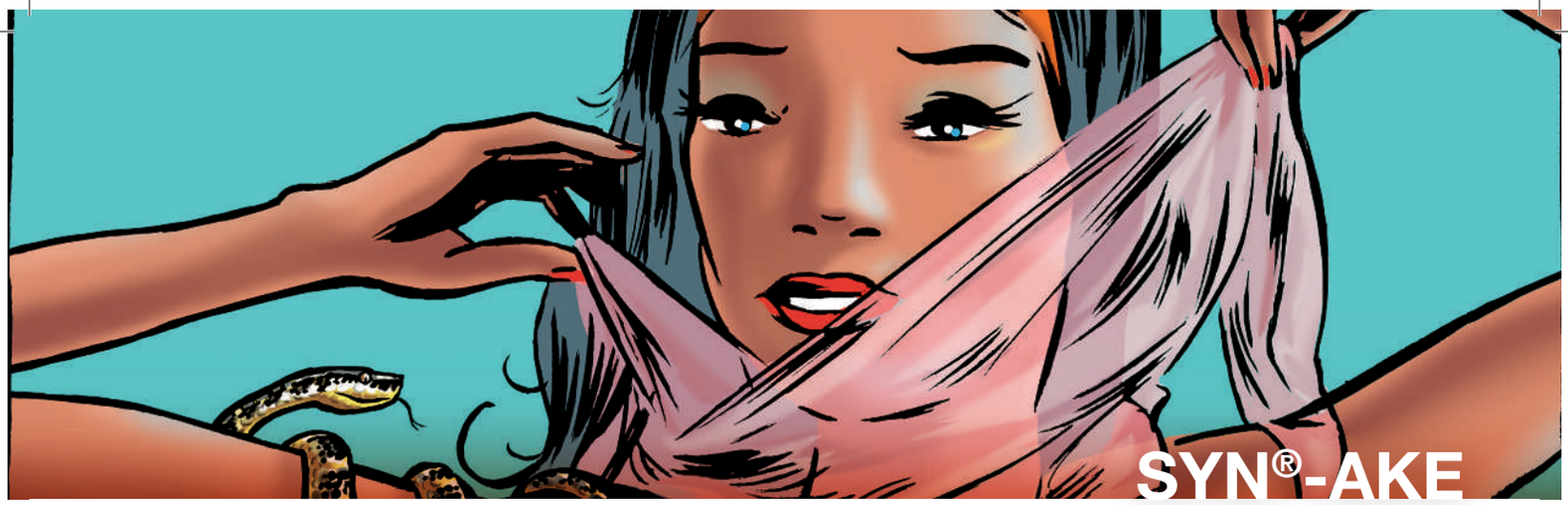


DEFY AGING. STOP THE APPEARANCE OF WRINKLES AND KEEP LAUGHING

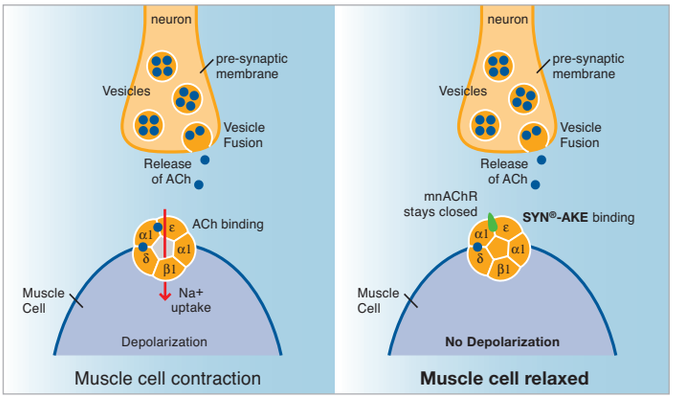
SYN®-AKE is an effective wrinkle smoothing compound based on a synthetic tripeptide that mimics the effect of *Waglerin 1,* a peptide found in the venom of the Temple Viper, *Tropidolaemus wagleri.* SYN®-AKE helps to smoothen the appearance of expression lines.

DSM has developed, over the past 30 years, a unique approach for the breeding and housing of venomous snakes whose venom is used for therapeutic (anti-coagulants, haemostatics) and diagnostic products. The long experience of DSM with Pentapharm in snake venom research made the investigation of venom peptides for cosmetic applications possible.
The Temple Viper's hunting method makes use of the venom protein *Waglerin 1,* which has a strong muscle-relaxing effect. The tripeptide SYN®-AKE mimics the essential amino acid sequence of this functionality.

SYN®-AKE's activity is attenuated compared to *Waglerin 1* and has been thoroughly tested. It is a safe, effective, and painless cosmetic alternative to controversially discussed muscle-relaxing anti-aging treatments like botulinum toxin.

Mechanism

SYN®-AKE's mode of action is similar to that of *Waglerin 1* which acts at the postsynaptic membrane. 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^+ and the muscle cells stay relaxed.



Awards

In 2006 SYN®-AKE won the well reputed and highly coveted Swiss Technology Award.

SWISS TECHNOLOGY® AWARD

Literature

McArdle, JJ, T L Lentz, V Witzemann, H Schwarz, SA Weinstein & JJ Schmidt. 1999. Waglerin-1 selectively blocks the epsilon form of the muscle nicotinic acetylcholine receptor. J. Pharmacol. Exp. Therap. 289:543-550.

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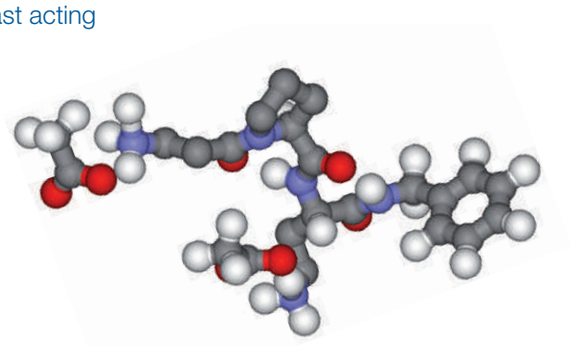
SYN®-AKE

Functions
- SYN®-AKE is an excellent wrinkle smoothing compound.
- Smoothes the appearance of mimic wrinkles in a short period of time.

Properties
- Reversible antagonist of the muscle nicotinic acetylcholine receptor (mnAChR)
- Blocks Na^+ uptake at the postsynaptic membrane
- Attenuates muscle cell contractions
- Fast acting



Cosmetic applications
- Age-defying effect particularly effective against expression lines
- Intensive wrinkle smoothing care

Suggested concentration
1–4% SYN®-AKE

Formulation
SYN®-AKE is a clear preservative-free glycerine-based aqueous solution that can easily be incorporated into the aqueous phase of a formulation.

INCI name
Glycerin, Aqua, Dipeptide Diaminobutyroyl Benzylamide Diacetate

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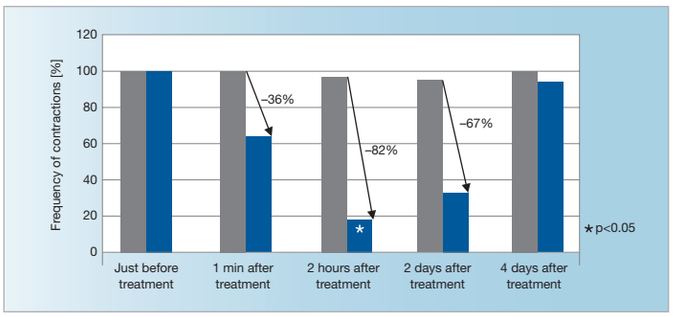
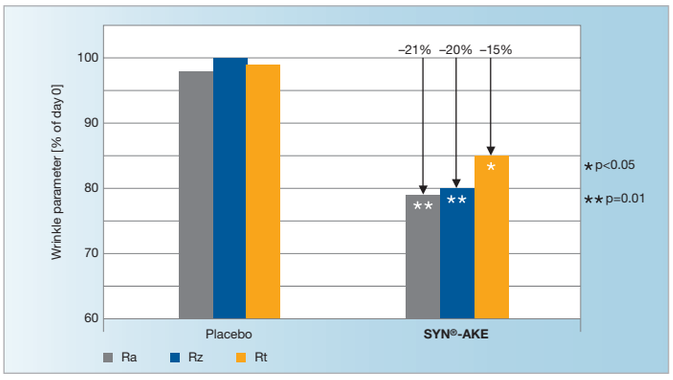
EFFICACY TESTS

In vitro
The efficacy of the SYN®-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.



SYN®-AKE peptide reduces muscle cell contraction and its action is reversible.

In vivo
The measurement of the wrinkle smoothing effect of SYN®-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).



SYN®-AKE – Age-Defying Effect. The smoothing effect (reduced Ra) was measured on 80% of the volunteers and reducing the appearance of wrinkles was (reduced Rz and Rt) measured on 73% of the volunteers.

Results showed up to 52% reduction in the appearance of wrinkle size after 28 days application!

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