



SYN[®]-AKE

WITH AGE-KILLING EFFECT TO STOP WRINKLING AND KEEP LAUGHING

SYN[®]-AKE is an effective anti-wrinkle 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 expression lines and to relax your face.

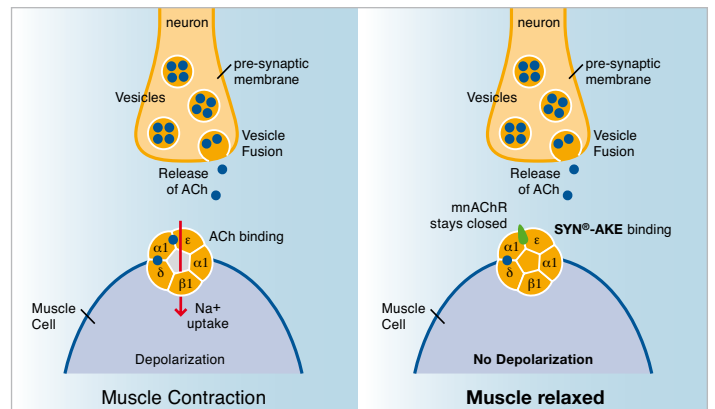
DSM has developed, over the past 30 years, a unique approach for the breeding and housing of venomous snakes whose venom is used for therapeutic (anti-coagulants, haemostatics) and diagnostic products. The long experience of DSM with Pentapharm in snake venom research made the investigation of venom 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 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 muscles stay relaxed.



Awards

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



Literature

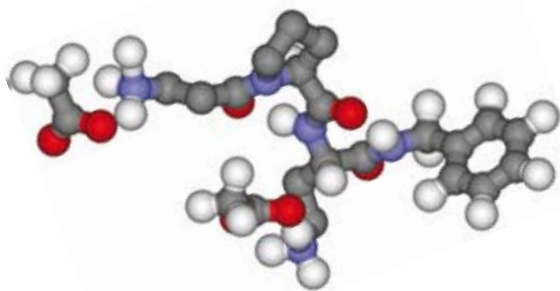
McArdle, JJ, T L Lentz, V Witzemann, H Schwarz, SA Weinstein & JJ Schmidt. 1999. *Waglerin-1 selectively blocks the epsilon form of the muscle nicotinic acetylcholine receptor. J. Pharmacol. Exp. Therap.* 289:543-550.

Functions

- SYN[®]-AKE is an excellent anti-wrinkle compound with a snake-venom-like mode of activity.
- Smooths 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 contractions
- Fast acting



Cosmetic applications

- Age-killing effect particularly effective against expression lines
- Intensive anti-wrinkle 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.

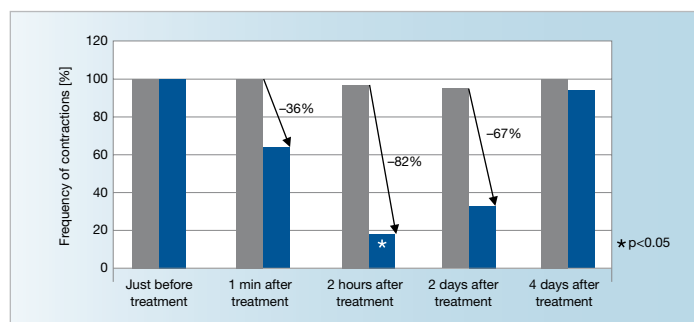
INCI name

Glycerin, Water, Dipeptide Diaminobutyroyl Benzylamide Diacetate

EFFICACY TESTS

In vitro

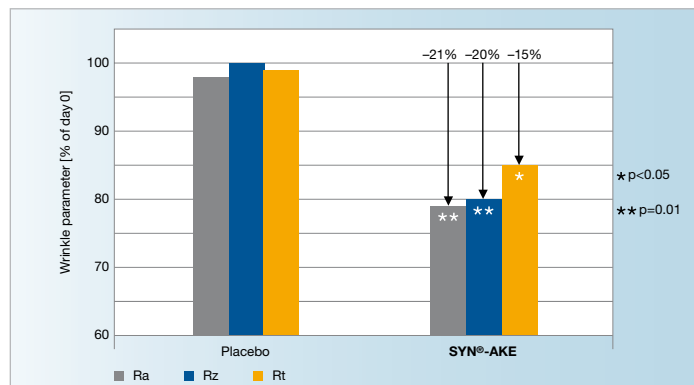
The efficacy of the SYN[®]-AKE tripeptide (0.5 mM) has been demonstrated *in vitro* by measuring the frequency of contraction of the innervated muscle cells as a function of the incubation time.



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

In vivo

The measurement of the smoothing and anti-wrinkle 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-Killing Effect. The smoothing effect (reduced Ra) was measured on 80% of the volunteers and the anti-wrinkle effect (reduced Rz and Rt) measured on 73% of the volunteers.

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