

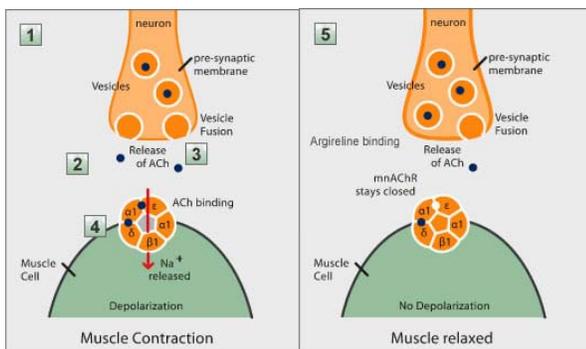
Reptile Venom Erases Wrinkles

VIPOX® 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*. **VIPOX®** helps to smooth expression lines and to relax your face.

A unique approach for the breeding and housing of venomous snakes whose venom is used for therapeutic (anti-coagulants, haemostatics) and diagnostic products has been developed over the past 30 years. Snake venom research has 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 in **VIPOX®** mimics the essential amino acid sequence of this functionality.

VIPOX® activity is attenuated compared to *Waglerin 1* and has been thoroughly tested. It is a safe, effective, and painless alternative to controversially discussed musclerelaxing anti-aging treatments like botulinum toxin.



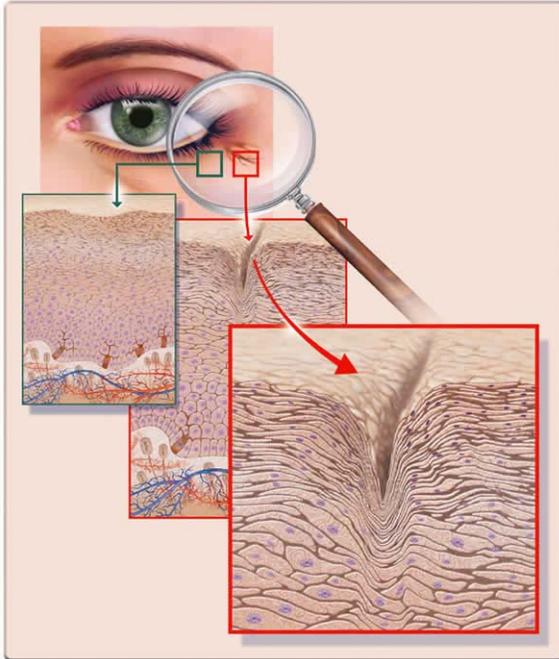
VIPOX® is an excellent anti-wrinkle compound with a snake-venom-like mode of activity. **VIPOX®** smoothes mimic wrinkles in a short period of time. **VIPOX®** is a clear preservative-free glycerine-based solution.



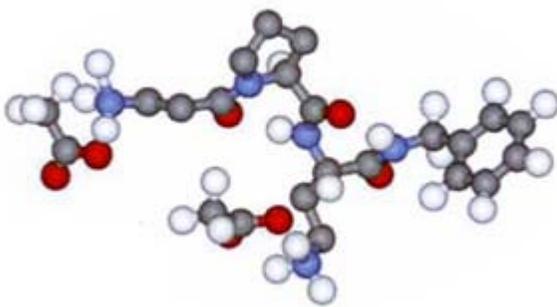
Why does the Skin Wrinkle?

The aging process begins when we enter the world and the effects of aging are evident in our bodies through out our lives. Beginning in our 20's, the signs of aging start to become noticeable. Genetically programmed chronologic aging causes changes in collagen and elastin, the connective tissues that supply firmness and elasticity to the skin. The genetic program of individuals is different, so the loss of skin firmness and elasticity occurs at different rates and different times in one individual as compared to another. As skin becomes less elastic, it also becomes drier and underlying fat padding begins to disappear. With the loss of underlying support by fat padding and connective tissues, the skin begins to sag; it appears less supple and wrinkles form.

We know we don't want them. But do we know exactly what they are? Wrinkles are fine lines or deep furrows, where the skin has become thinned and damaged. As we age, our skin undergoes changes that make it more difficult for the skin to repair itself, and these changes lead to wrinkles. Dry skin is one of the top causes of premature wrinkles. People with dry skin will usually get wrinkles before people with normal skin or oily skin. Sun exposure is one of the top causes of premature wrinkles, mostly because the sun's rays dry out the skin. Smoking also leads to premature wrinkles, again because it dries out the skin. Heredity and fair skin can also be contributing factors. People with fair skin tend to get premature wrinkles more often than other people.



VIPOX® mode of action is similar to that of *Waglerin1* 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.



Properties:

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

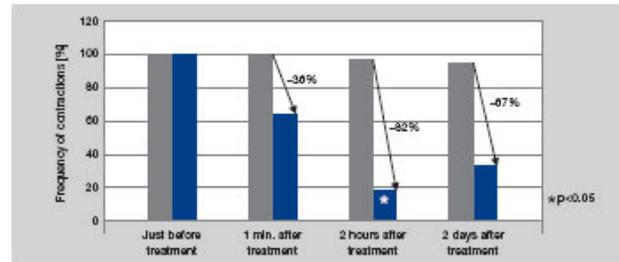
*Cosmetic applications:

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

*Suggested concentration: 1–4%

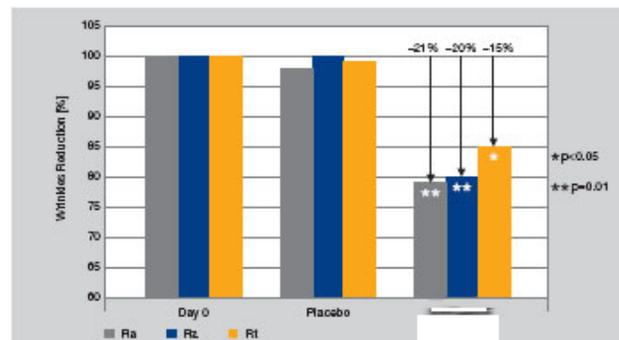
In vitro:

The efficacy of the **VIPOX®** 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. **VIPOX®** peptide reduces muscle cell contraction and its action is reversible.



In vivo:

The measurement of the smoothing and anti-wrinkle effect of **VIPOX®** (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). 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!

In 2006 the developer of this formula won the well reputed, and highly coveted Swiss Technology Award.



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