

What Is Hexapeptide ?



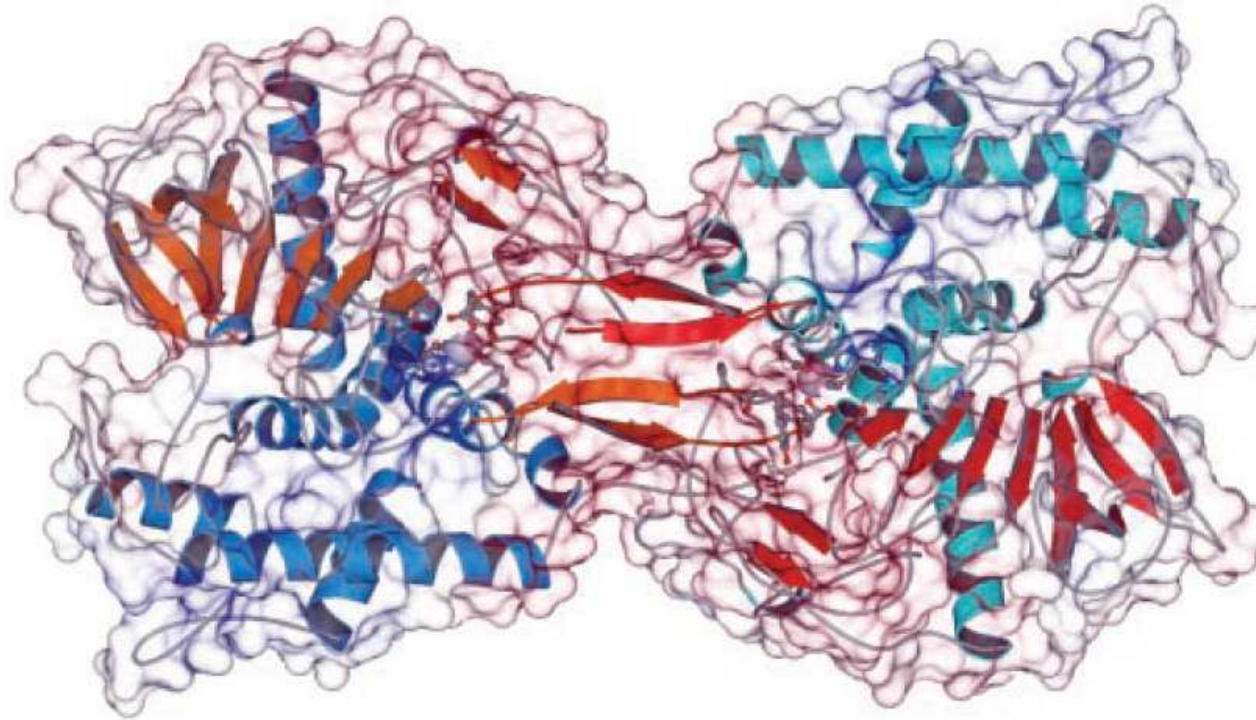
BF-Tek Hexapeptide :

Hexapeptide is a very effective material for tackling the biochemical mechanism of wrinkle formation.

The **anti-wrinkle** mechanism of acetyl hexapeptide-3 is very similar to the **botulinum toxin (BOTOX)** which is widely used in the facial injections of the orthopaedy. **BF-Tek Hexapeptide** is powder type with high purity. It's easy to be processed and preserved. That makes it perfectly compatible for the cosmetic uses.

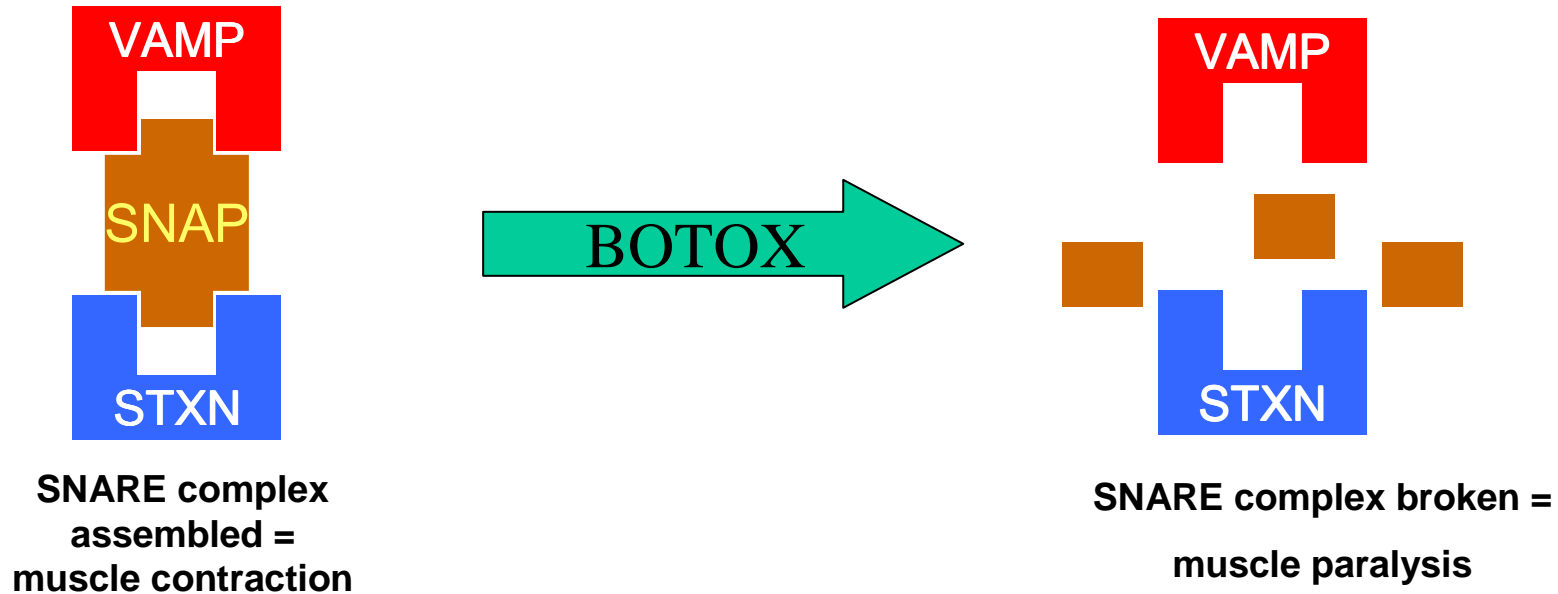
Introduction of Botulinum Toxin (BOTOX)

Clostridium botulinum produces seven different toxins which cause muscle paralysis. One of the toxins, botulinum neurotoxin type A was first purified in 1946. In 1970s Dr. Scott found that by injecting a small amount of botulinum toxin in the hyperactive ocular muscles, he was able to correct the strabismic condition. It is now available for medical and cosmetic use under the trade name BOT



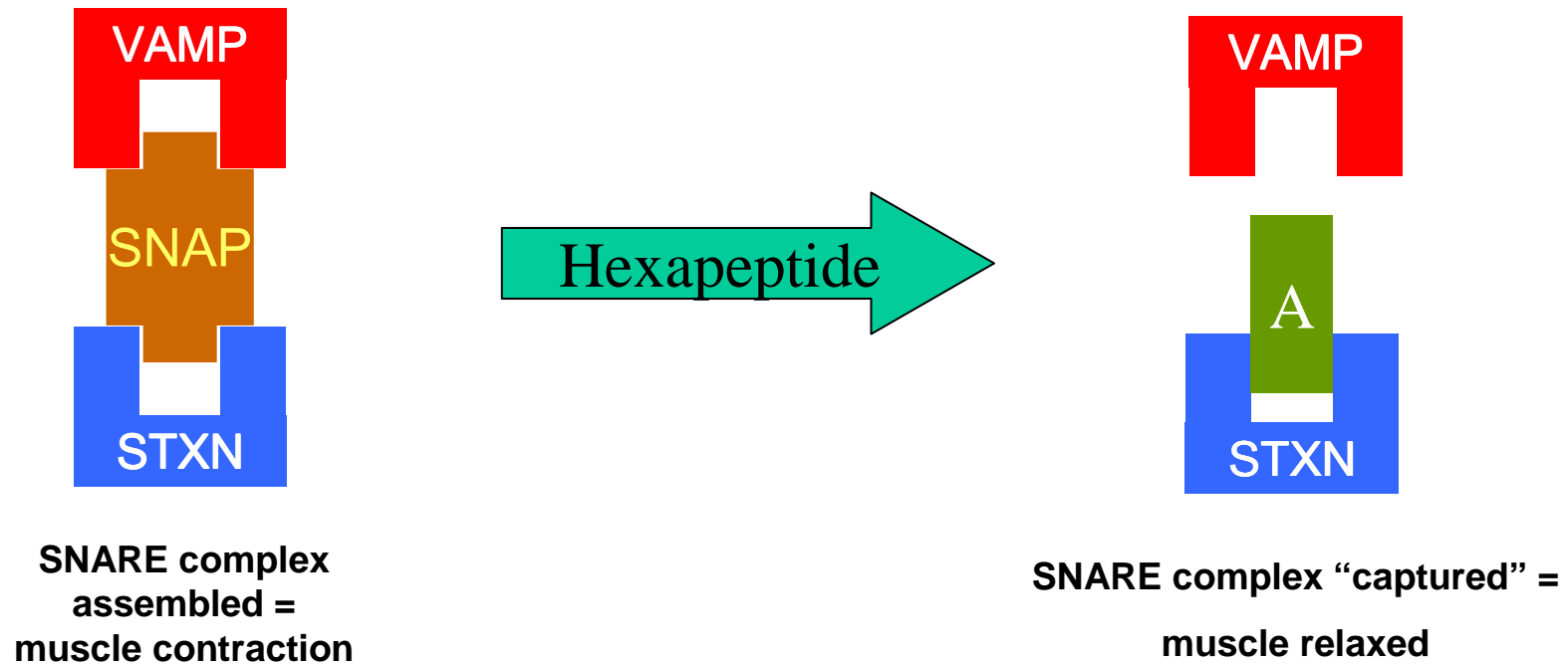
Anti-wrinkle Mechanism of BOTOX

BOTOX paralyse by selectively blocking acetylcholine release at the neuromuscular junction. This is achieved by cleaving a protein called **SNAP-25**.

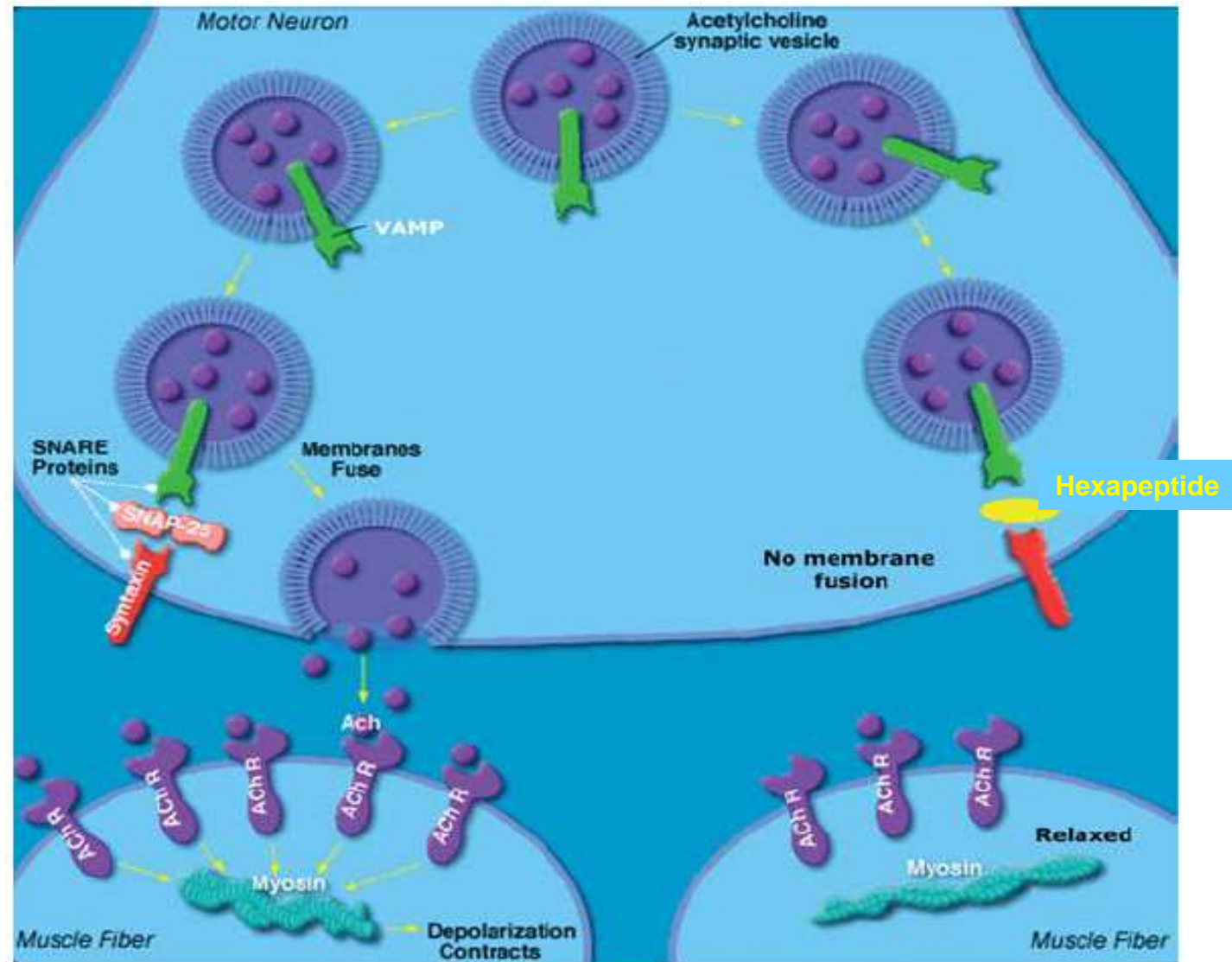


Anti-wrinkle Mechanism of Hexapeptide

Acetyl Hexapeptide-3 competes with **SNAP-25** in formation of the SNARE complex. That moderately relaxes facial muscle tension.



Anti-wrinkle Mechanism of Hexapeptide



Feature of Hexapeptide

Anti-wrinkle

Before use, we can see deep wrinkles on volunteer's forehead



After 14 days use, volunteer has a smoother forehead.



Feature of Hexapeptide

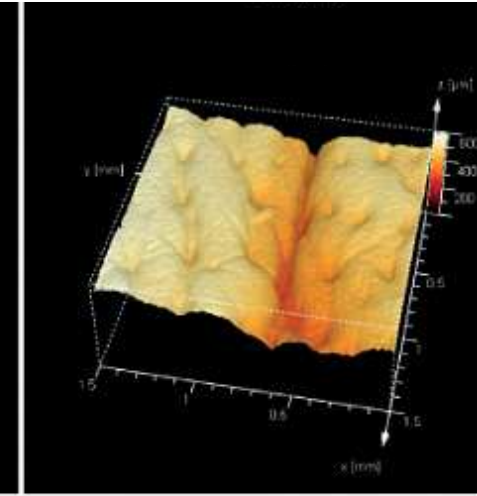
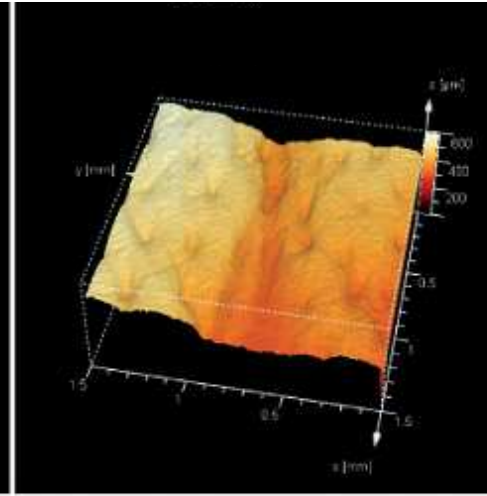
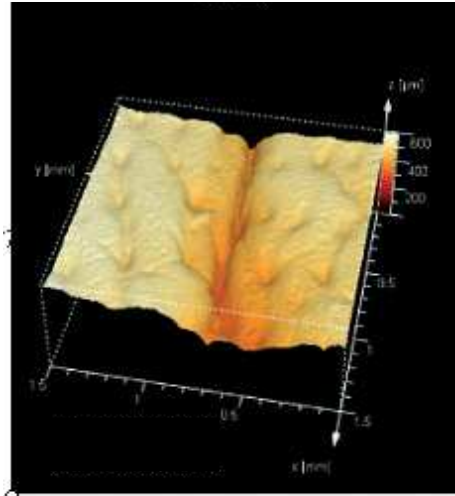
Anti-wrinkle

0 day

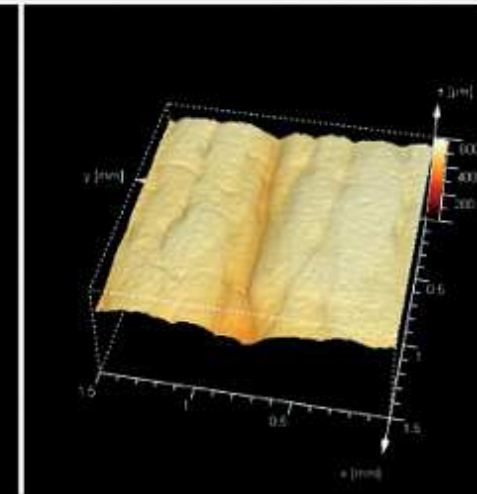
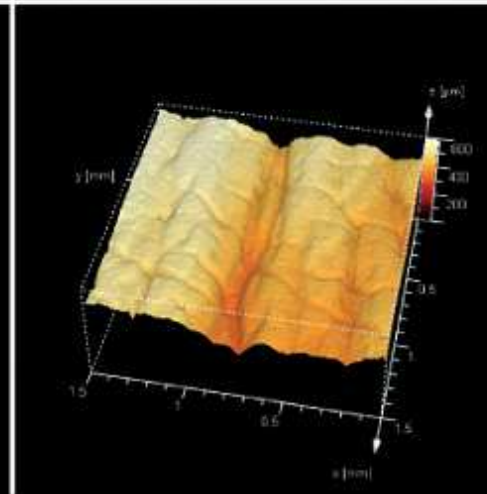
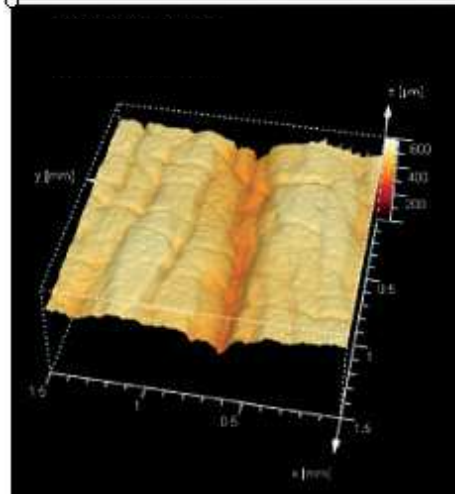
15 days

30 days

**Without
Hexapeptide**



**With
Hexapeptide**



Safety Tests

In Vitro

- ▶ **Citotoxicity test on human dermal fibroblasts**
 - No signs of citotoxicity at concentrations between 10 μ g/ml and 1 mg/ml with a cell density of 21,000 cell/cm².
- ▶ **Citotoxicity test on human epidermal keratinocytes**
 - No signs of citotoxicity at concentrations between 10 μ g/ml and 1 mg/ml with a cell density of 15,000 cell/cm².
- ▶ **Genotoxicity test (Ames test)**
 - The results showed no genotoxicity under the conditions assayed.
- ▶ **Ocular Irritation (NRU - Neutral Red Uptake test)**
 - The product is potentially not irritating for the eyes.

Safety Tests

In Vivo

- ▶ **Primary skin irritation test**
 - No signs of irritation redness or edema were observed in albino male rabbits after 7 days from the removal of the tested compound (Argireline® Solution 0.05%).
- ▶ **Acute oral toxicity test**
 - Analysis design allowed to conclude that DL50>2500 mg/Kg body weight in rats and therefore Argireline® shows no acute oral toxicity at the dosage tested.
- ▶ **Skin sensitisation (Hypoallergenicity)**
 - An HRIPT (Human Repeated Insult Patch Test) was performed on 50 volunteers aged 18 to 70. Argireline® Solution 0.05% did not cause sensitisation in any volunteer so it can be classified as Low Sensitisation.

Reference

1. ***FEBS Letters*, 372, 39-43, 1995**
2. ***J. of Biological Chem.*, 272, 2634-2638, 1997**
3. ***J. Cosmetic Sci.*, 24, 303-310, 2002**
4. ***Biochem. J.*, 375, 159–166, 2003**
5. ***FEBS Letters*, 435, 84-88, 1998**
6. ***Annales de réadaptation et de médecine physique*, 46, 361–374, 2003**
7. ***Drug Discovery Today*, Volume 10, Number 8, April 2005**

Comparison Between BOTOX and Hexapeptide

	BOTOX	Hexapeptide
Usage	Injection	External use
Size of molecule	Bigger	Smaller
Effectiveness	Faster	Slower (About 2 weeks continuously use)
Price	Higher	Lower
Chances of side effects	Higher	Lower

COA of Hexapeptide

ITEM	STANDARD
INCI name	Acetyl hexapeptide-3
Formula	C₃₄H₆₀N₁₄O₁₂S
MW	888.42
Appearance	White powder
Purity	> 80%
Preservation	Avoid light, heat and moisture, can be stored in 4°C at least 3 months.