

DermaPep A610

An Anti-Aging Peptide



GENERAL DESCRIPTION

One of the critical factors increasing facial wrinkles is the repeated movements caused by muscle contractions. Muscles are contracted when they receive neurotransmitter released from inside a vesicle. The SNARE complex is essential for this neurotransmitter release at the synapsis. It is a ternary complex formed by the proteins VAMP, Syntaxin and SNAP-25. This complex intervenes in the process of docking, fusing and exocytosis of these neurotransmitter-filled vesicles. **DermaPep A610** is a mimic of the N-terminal end of SNAP-25, which competes with SNAP-25 for a position in the SNARE complex, thereby modulating its formation. If this SNARE complex is slightly destabilized, the vesicle is not able to release neurotransmitters efficiently and therefore muscle contraction is attenuated, preventing the formation of lines and wrinkles (Fig. 1). Notably **DermaPep A610** is a non-toxic, injection-free anti-wrinkle peptide that emulates the action of Botulinum neurotoxins.

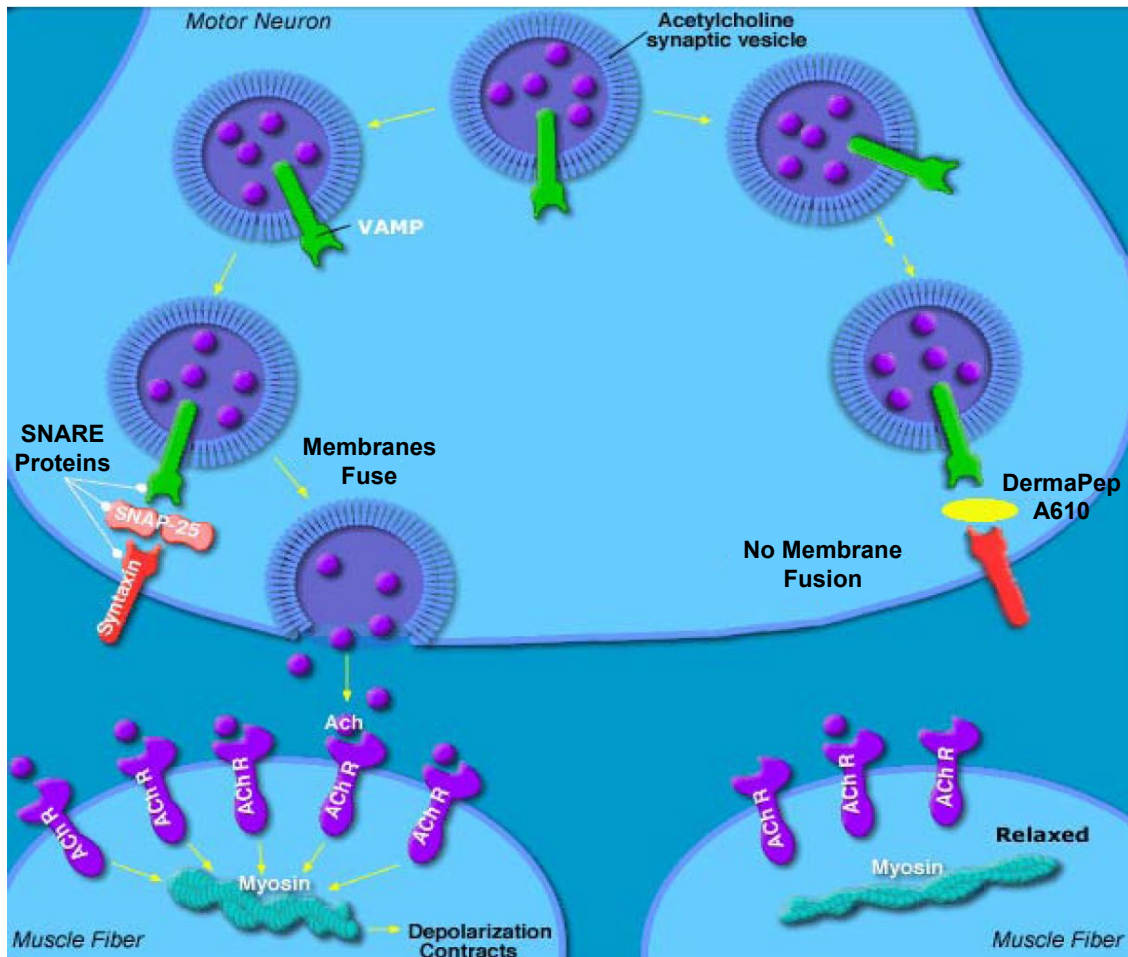


Fig. 1. Biochemical Mechanism of **DermaPep A610**

PROPERTIES AND APPLICATIONS

DermaPep A610 relaxes facial tension leading to the reduction in facial lines and wrinkles with regular use.

DermaPep A610 is a safer, cheaper, and milder alternative to Botulinum neurotoxin, topically targeting the same wrinkle-formation mechanism in a very different way.

DermaPep A610 can be incorporated in cosmetic formulations such as emulsions, gels, sera, creams, etc., where reduction of the deep lines or wrinkles in the forehead or around the eyes area is desired.

TECHNICAL INFORMATION

● Product Specifications

DermaPep A610 Powder	
Chemical Name:	Acetyl-glutamyl-glutamyl-methionyl-glutaminy-arginyl-arginylamide
INCI Name:	Acetyl Hexapeptide-8
CAS No:	616204-22-9
Mass Spectrometry:	$[M+H]^+ = 890.3$
Appearance:	White powder
Purity:	85% up
DermaPep A610 Solution	
Appearance:	Transparent Solution
INCI name:	Water, Acetyl Hexapeptide-8
Active ingredient content:	0.05 % DermaPep A610 powder
Preservative:	0.3% Phenonip

● Processing and Dosage

It is recommended to use 3~10% of the solution in the final formulation.

● Storage and Shelf Life

The products must be kept in a cool, dark and clean place to ensure a shelf life of at least twelve months. For long term storage it is recommended to store at 4°C which extends shelf life to at least two years.

EFFICACY DATA^a

• *In vitro* Tests

(1) DermaPep A610 inhibits SNARE complex formation.

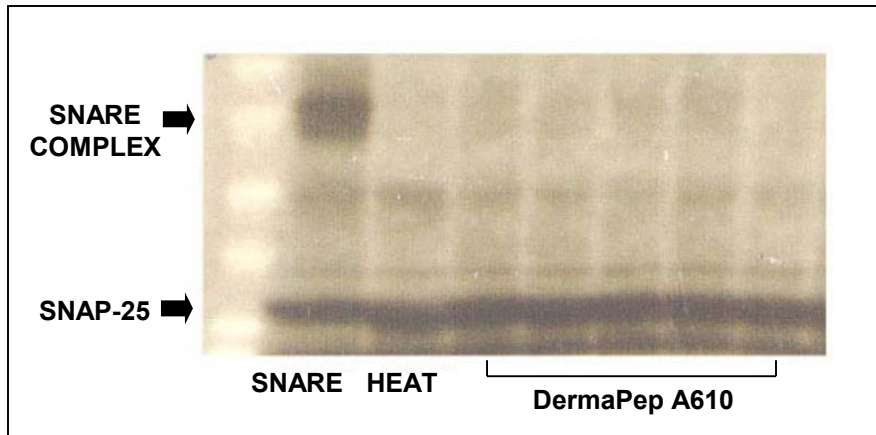


Fig. 2. Modulation of SNARE complex formation by Acetyl Hexapeptide-8.

The electrophoresis shows a top band that corresponds to formation of the SNARE complex and a bottom band that shows presence of SNAP-25. The left lane is a control with intact SNARE complex, the second lane shows SNARE complex destroyed by heat. The rest of the lanes show how DermaPep A610 inhibits the SNARE complex formation.

(2) DermaPep A610 inhibits neurotransmitter release from chromaffin cells.

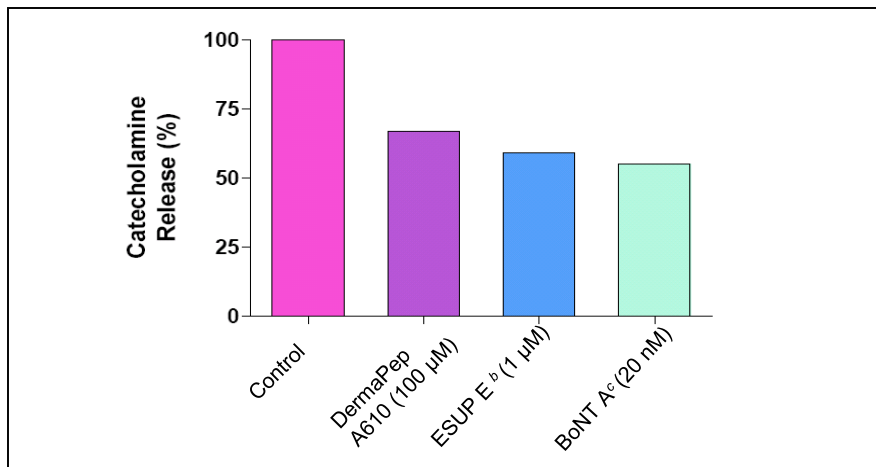


Fig. 3. Modulation of catecholamine release (notice different concentrations).

Catecholamine release was inhibited up to 60% by 20 nM BoNT A and up to 55% by 1 µM of an ESUPE. Remarkably, 100 µM DermaPep A610 inhibited 30% of the total catecholamine exocytosis.

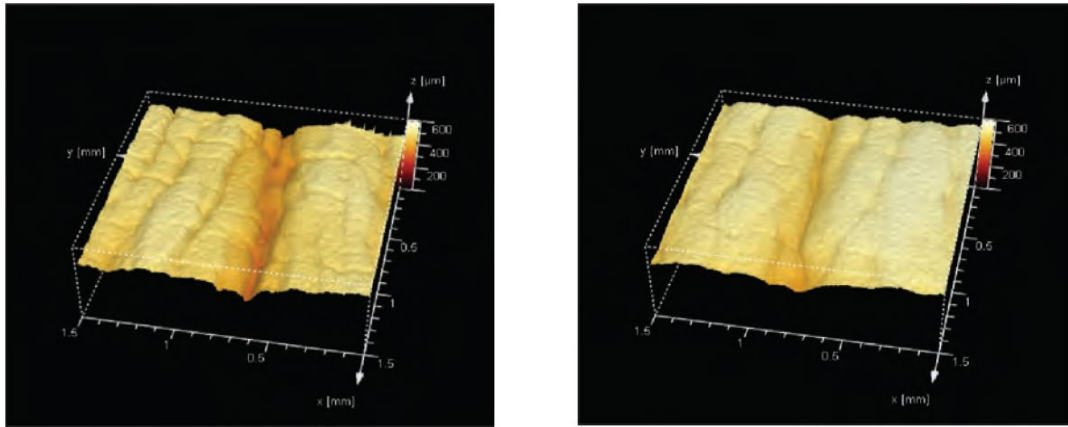
^aEfficacy data were extracted from Lipotec S.A. and *International Journal of Cosmetic Science*, **2002**, *24*, 303.

^bESUPE: 26-Mer peptide from the C-terminal end of SNAP-25

^cBoNT A: Botulinum neurotoxin A

- ***In vivo* Tests**

(A) Cream Containing 10% DermaPep A610 Solution



(B) Cream Containing 5% DermaPep A610 Solution

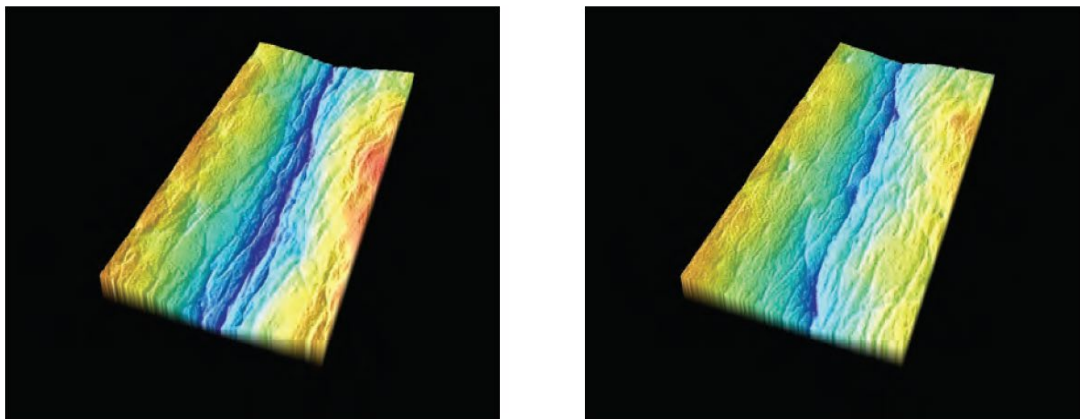


Fig. 4. Anti-Wrinkle Test on Healthy Volunteers by Skin Topography Analysis.

Skin topography analyses were performed by obtaining silicon imprints from around the eyes of healthy women volunteers. Silicon imprints were obtained pre-tests and after 30 days of twice a day applications. *Left*, before treatment; *Right*, after treatment. **(A)** 10 women were tested. The depth of the wrinkle decreased an average of 27%, with maximum values between 50 and 60%. **(B)** 14 women were tested. The depth of the wrinkle decreased an average of 17%, with maximum values of 32%.