

# NEXT GENERATION PEPTIDES

Developments of new cutting-edge peptidebased drugs and molecules with pharmacological, diagnostic and cosmetic interest.



DIAMOND: The best way to deliver stable resveratrol and palmitoyl pentapeptide-4 to the Skin.

Resveratrol in Cosmetic formulations in chemically unstable and therefore to enhance its stability and tissue penetration a Diamond-delivery system was designed.

Diamond Carrier effectively helps maintain resveratrol and peptide concentration in the skin, and thus prolongation of both protective effect of resveratrol and antiaging effect of this peptide.





# Special Chemicals

#### About the resveratrol:

- Resveratrol is an interesting ingredient from natural source such as red grapes and berries that display extremely exciting antiageing propperties and has the capacity to prolong cel life.
- Resveratrol neutralizes and inhibits the formation of reactive oxygen species and protects both lipids and protein oxidation better that vitamin C and vitamin E.
- It increases ATP levels as a source of cell energy.



#### About the resveratrol:

Its antioxidant activity is superior to coenzyme Q10-idebenone and higher tan catechins and gallic acid to effectively suppress peroxide radicals.

Resveratrol also inhibits cyclooxygenases (COX-1 & COX-2), inducible nitric oxide synthase (iNOS) activity and thromboxane A2 synthesis that support its anti-inflammatory actions. Resveratrol by stopping oxidative stress. Reduces telomere shortening.



SCH DIAMOND RESVE PEPT



Resveratrol suppress senescence in H2O2-treated human primary keratinocytes, a model of oxidative stressinduced celular aging.





Reduced proliferation due to oxidative damage.



Proliferation recovered



NORMAL PROLIFERATION IS RECOVERED BY RESVERATROL TREATMENT.

Resveratrol acts by increasing the activity of sirtuins SIRT1 a protein that not function normally oncekeratinocytes became senescent.

Normal SIRT1 function is necessary for mitochondrial function, maintaining normal energy levels with normal proliferation



#### About Palmitoyl pentapeptide-4:

- Stimulates the collagens production and fibroblast turnover.
- Inhibits extracelular matrix degradation by inhibiting metalloproteinases.
- Stimulates integrins synthesis.
- Reduces Deep wrinkles in 4 weeks.
- Increases integrins synthesis.



Integrins are cell Surface receptors that interact with the extracelular matrix.

They mediate intracelular signals in reponse to the extracelular shape, mobility and progression through the cell cycle.



In Vivo study: Palmitoyl pentapeptide-4 boosts collagen type I in human dermal fibroblasts. Palmitoyl pentapeptide-4 inhibits MMP9 activity induced by TNFa





Effect of SCH Diamond Resve Pept on celular ATP content.

ATP content was determined in cells incubated with vehicle or 0,3% SCH Diamond Resve Pept.

Special

SCH Diamond Resve Pept boosts cells energy by increasing ATP level in fibroblasts.

Fiibroblasts were grown in six-well plates. Once the cells were at 75% confluence, ATP level was measured in untreated and Diamondresl-treated cells incubated for 48h. After incubation the cells were collected by trypsinization and centrifugation at 500 ×g and then resuspended in phosphatebuffered saline, pH 7.4. Cellular ATP content was determined using the PerkinElmer "ATPlite" kit (PerkinElmer) and normalized on protein content. The values represent the means  $\pm$  SEM and significance was calculated \*p < 0.05.





#### SCH Diamond Resve Pept : antiaging effects

- Diamond acts as carrier to assure bioavailability.
- Resveratrol antioxidant that suppress cell senescence.
- Palmitoyl pentapeptide-4 powerful antiaging peptide.

PALMITOYL PENTAPEPTIDE-4

RESVERATROL

#### In vivo: improvement of skin hydratation.

- The study was performed in a group of 20 volunteers over a period of 6 weeks with 0.3% SCH Diamond Resve Pept.
- The volunteers applied on the face twice a day.
- The hydration of the epidermis was evaluated with a corneometer which measures the hydration level of the superficial layers of the skin (stratum corneum), based on electrical conductivity.
- Hydration of the epidermis increases from the start of applying SCH Diamond Resve Pept containing cream to 6 weeks.







#### In vivo study: 0.3 % SCH Diamond Resve Pept twice daily for 12 weeks

#### **Ultrasound Analysis**

Non-invasive ultrasound bioinstrumentation measurements demonstrated the improvement in the epidermal and dermal density week 4 (8.5%) and continuing to week 8 (17.3%) and week 12 (18.9%), with all

- results being statistically significant.
- Comparing the ultrasound images between baseline and
- the subsequent study visits, it was apparent that there was an increase in skin thickness.

SCH Diamond Resve Pept increases skin density.



# SPECIFICATIONS

- Apperance: Solution
- INCL: Water, Diamond powder,
  Resveratrol, Palmitoyl pentapeptide-4
- Recommended dose: 0.30%
- Legal status: EU|US|CN|JP|KR|AUS



# THANK YOU

Thank you for your interesting and attention! If you need sample and technical data, please contact us without hesitation

> Special Chemicals