

# SCH AZE PEPT CAP

## NEXT GENERATION ENCAPSULATED

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

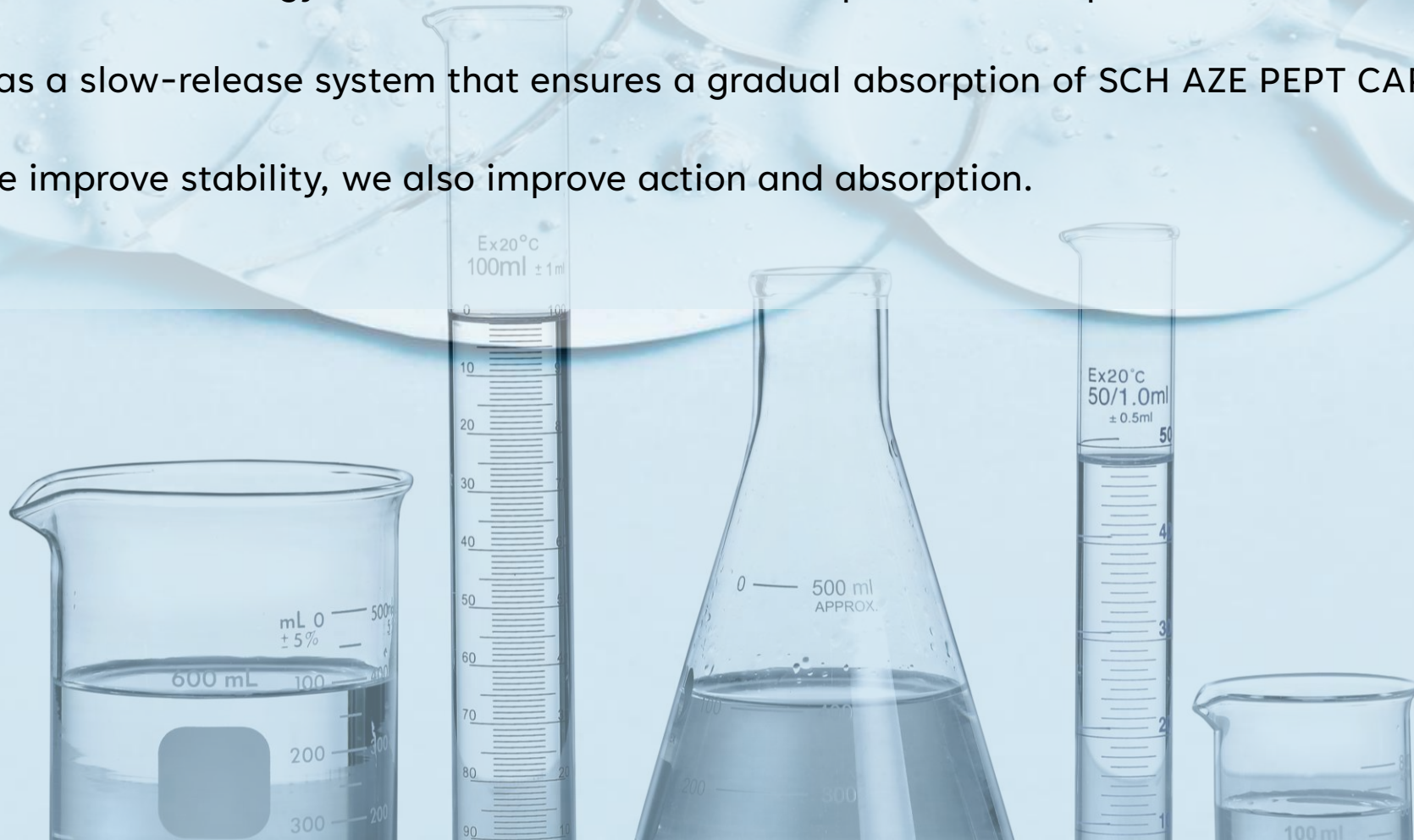


## SCH AZE PEPT CAP

A new encapsulation technology allows SCH AZE PEPT CAP to penetrate deeper into the skin.

The capsule has a slow-release system that ensures a gradual absorption of SCH AZE PEPT CAP.








Not only do we improve stability, we also improve action and absorption.

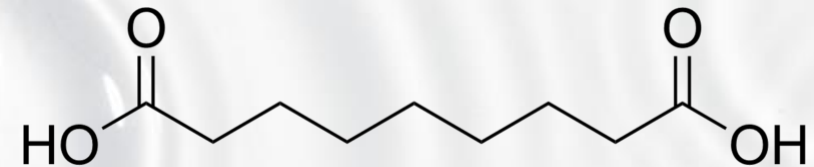


## SCH AZE PEPT CAP

Solution to acne-prone, blackhead-prone & rosacea skin types Solution to PIH (Post-inflammatory hyperpigmentation) & melasma.

(NOI=100%)

-  Inhibit bacterial growth-Anti-acne
-  Balance oil secretion
-  Inhibit melanin production
-  Inhibit inflammation
-  Anti-oxidation
-  Prevents skin hyperkeratosis
-  Buffering Agent

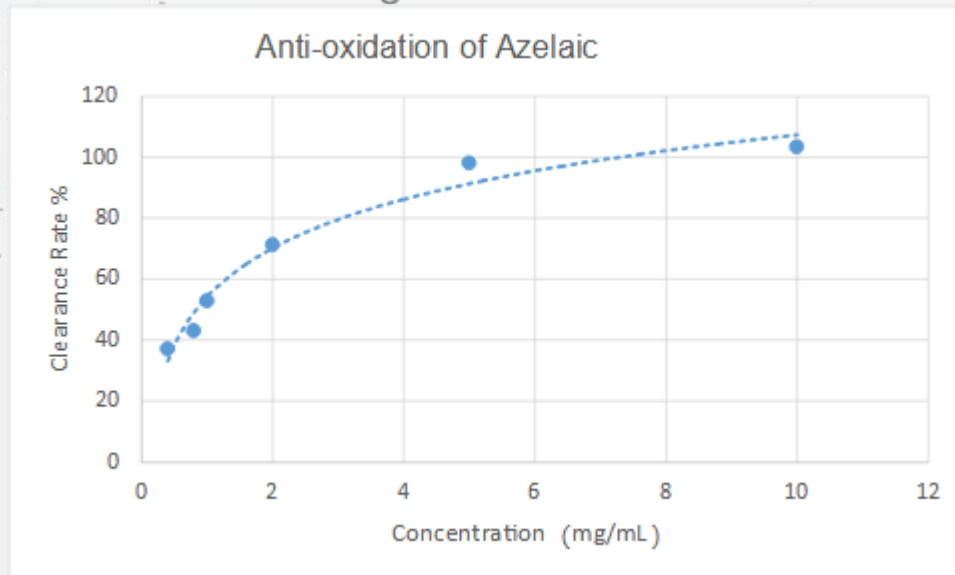


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## The Features of Azelaic Acid

- ① Works against acne-causing *Propionibacterium acnes* (P. acnes), an awesome choice for acne-prone skin.
- ① Works on the cells that line hair follicles by changing the way they mature and proliferate, which decreases follicular 'plugging' & helps prevent blackheads, whiteheads.
- ① Has anti-keratinizing effect on normal skin & reduce the synthesis of filamentous keratin & prevents excessive keratinization of hair follicles.
- ① Inhibits the production of reactive oxygen free radicals and exerts anti-inflammatory effects.
- ① Inhibit tyrosinase activity and pigment synthesis in abnormal pigment cells & inhibits DNA synthesis and mitochondrial enzyme activity in abnormal pigment cells.
- ① Help reducing malignant cell proliferation activity & prevent malignant melanoma from developing in malignant freckles.
- ① Especially effective for post-inflammatory hyperpigmentation (that often comes with acne) and melasma (Not for lightening age spots that are called solar lentigines).
- ① It is a prescription drug in the US but can be freely purchased in the EU in an up to 10% concentration

## Antioxidation of Azelaic Acid (scavenge hydroxyl radicals):



### Conclusions:

According to the testing results, Azelaic Acid showed scavenging ability to hydroxyl free radical, indicating its antioxidant property. The max clearance rate of Azelaic Acid on  $\cdot\text{OH}$  reached to 103.3% at 10 mg/mL and the EC50 value is 0.83 mg/mL. Azelaic Acid is an effective antioxidant agent which can prevent skin and tissue potential damage caused by hydroxyl radicals.

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## Anti-acne Performance of Azelaic Acid:

Antibacterial Performance on *P. acnes* (*C. ances*)— *common pathogenic bacterium of acne*

### Conclusions:

According to above results: Azelaic Acid showed antibacterial performance on *P. acnes* (*C. ances*)— common pathogenic bacterium of acne, if adding more than 0.7 w/w% theoretically, indicating Azelaic Acid can be used as anti-acne agents.

The MIC Value of Azelaic Acid						
ALA Concentration	1.0%	0.9%	0.8%	0.7%	0.6%	0.5%
Bacteriostasis On <i>P. acnes</i> ( <i>C. ances</i> )	++	++	+	+	-	-

The physiological and pathological mechanisms of acne appear to depend on four major factors, namely:

- (1) sebum production and excretion.
- (2) keratinization of follicular pathways.
- (3) microbial colonization of pilosebaceous units per follicle.
- (4) inflammatory responses in the surrounding areas of hair follicles.

## Acne Treatment

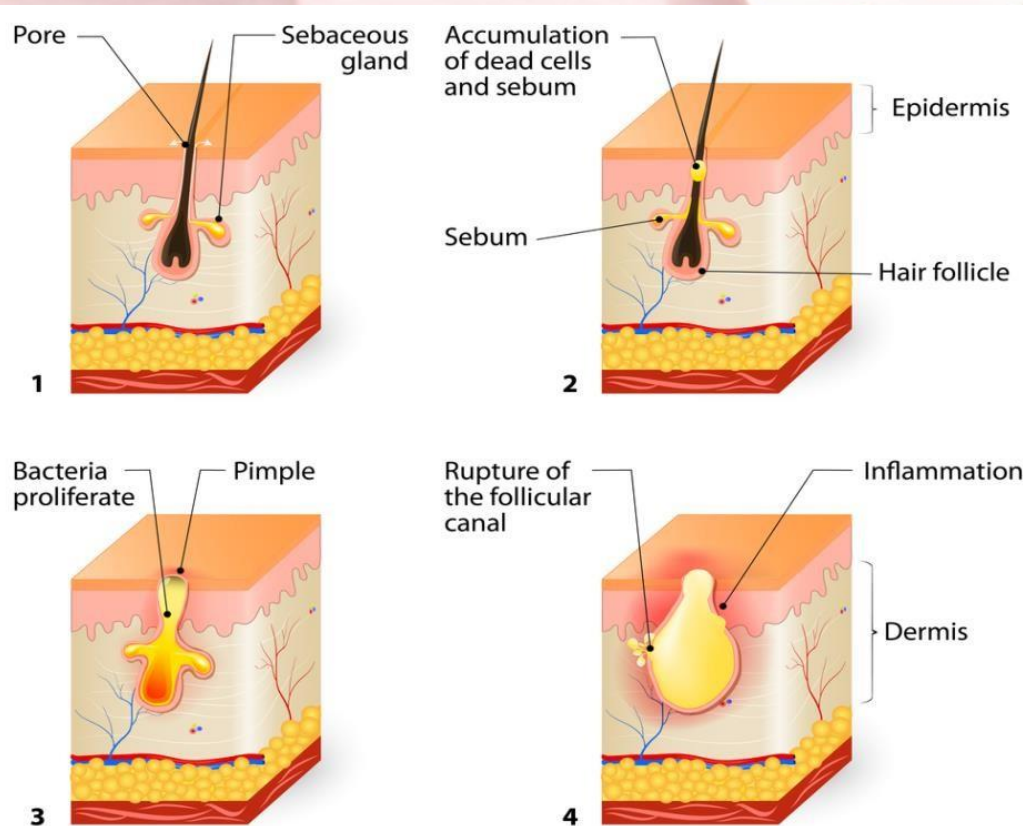
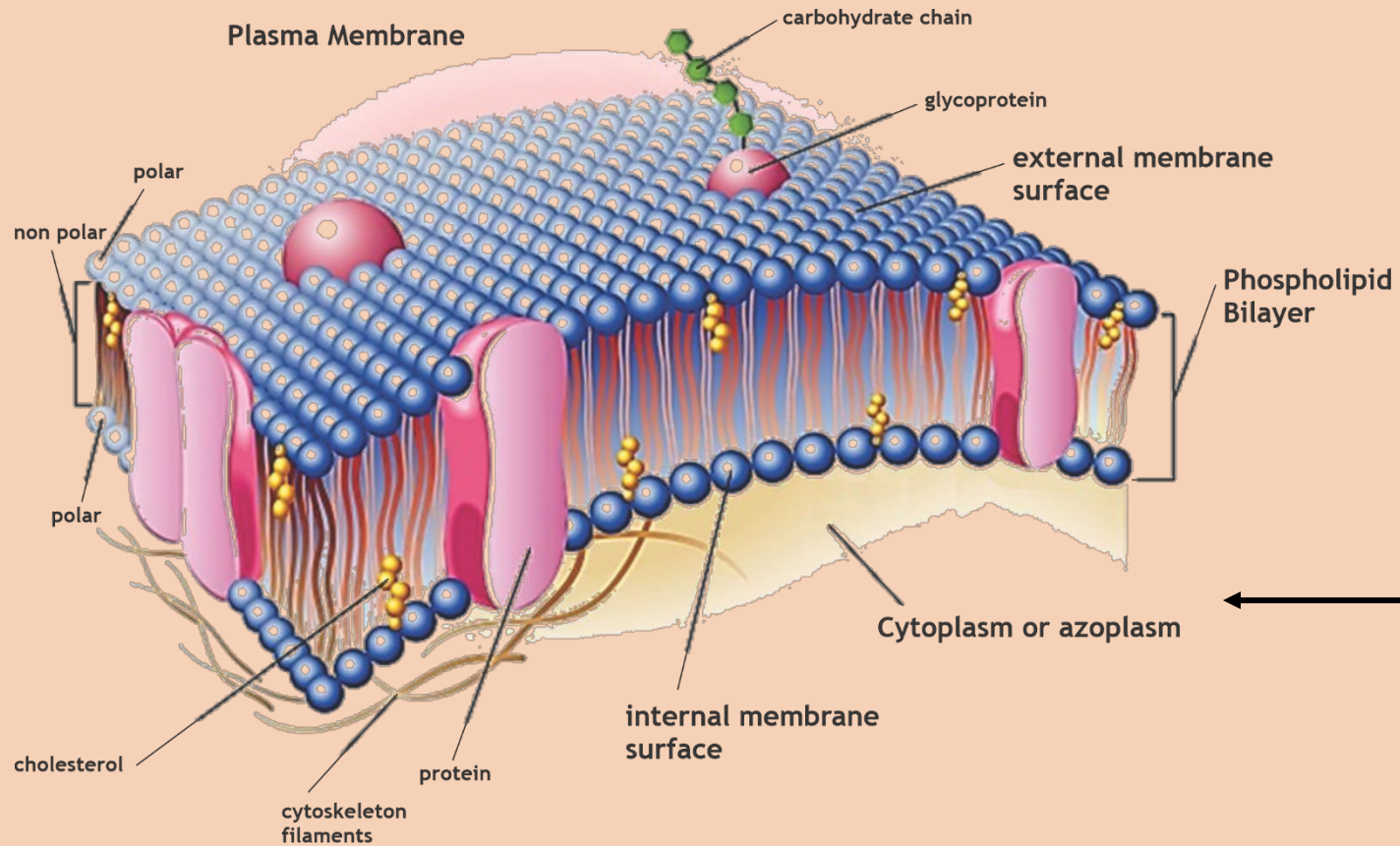


Diagram of acne formation.

- Ⓢ Azelaic acid is effective against acne because of its ability to combat all of these activity.
- Ⓢ Azelaic acid is a competitive inhibitor of mitochondrial oxydoreductases and 5-a-reductase.
- Ⓢ Azelaic acid also has antibacterial properties against aerobic and anaerobic bacteria, including propionibacterium acnes.
- Ⓢ Azelaic acid is an antikeratinizing agent, which can inhibit the proliferation of keratinocytes and modulatiog the differentiation of epidermal cells.

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## Palmitoyl Tripeptide-36



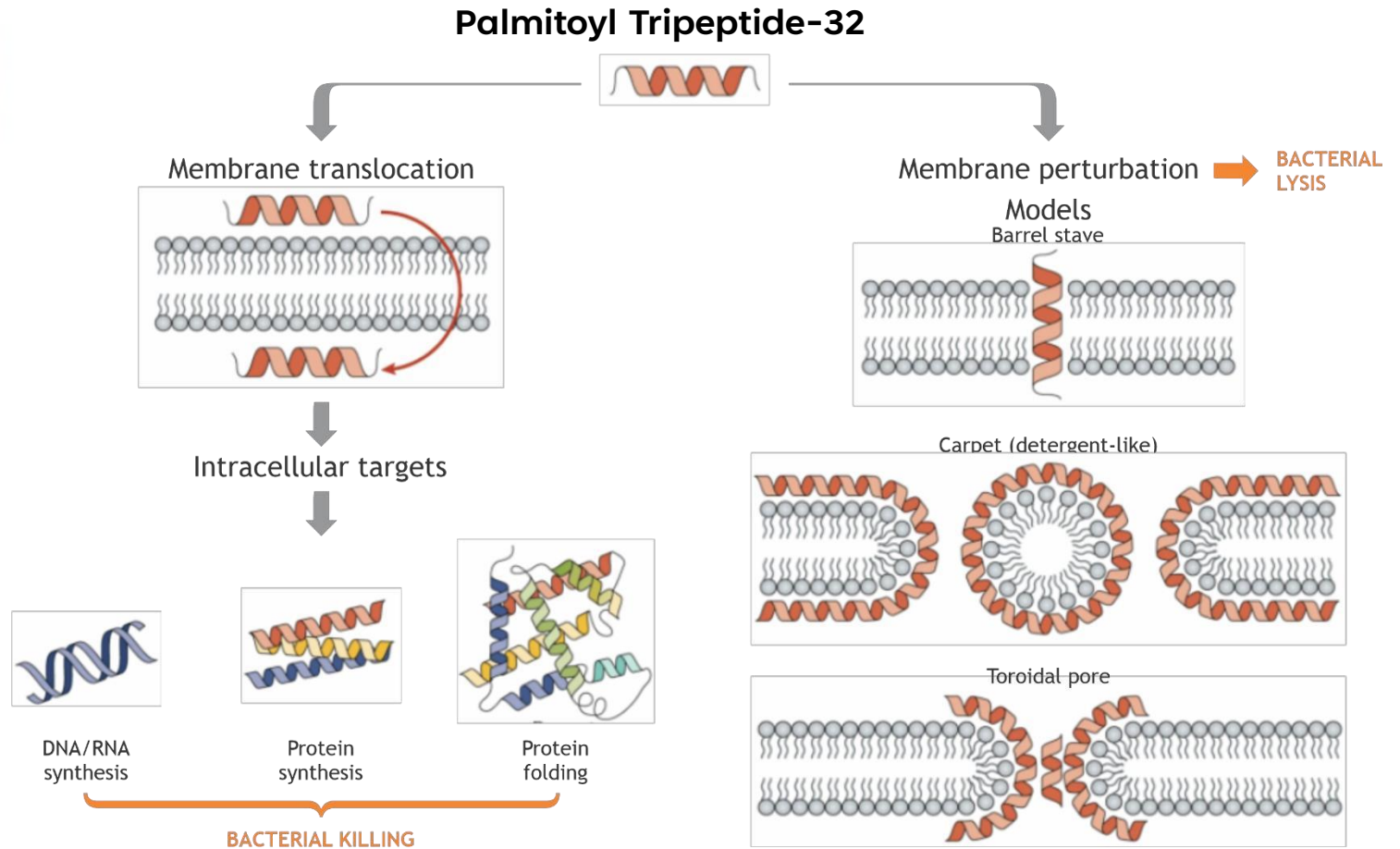
- Ⓢ An active and preservative antimicrobial agent.
- Ⓢ Inhibits *S. aureus* and others bacteria and fungi on the skin surface.

Mechanism of Action of Palmitoyl Tripeptide-36 on lipid bilayer.

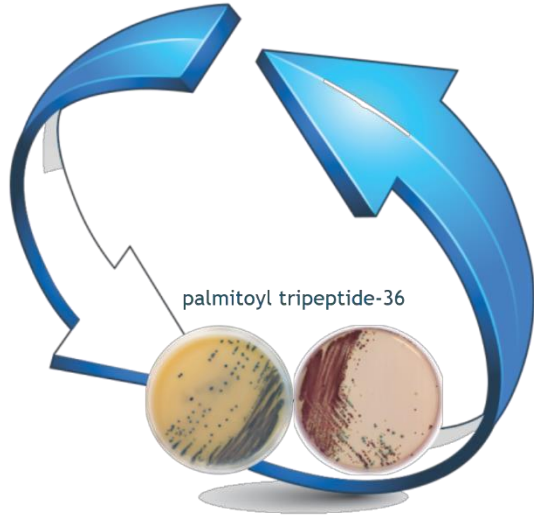
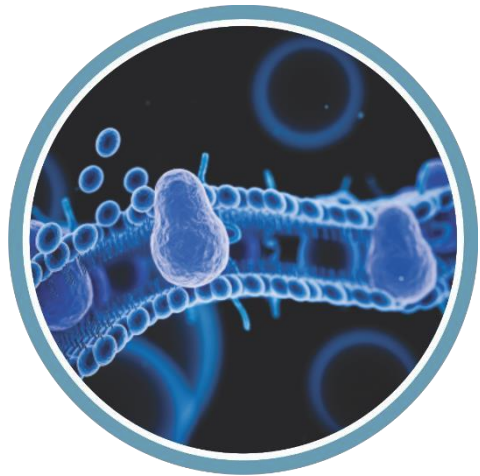
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## Mechanism of Action of Palmitoyl Tripeptide-36



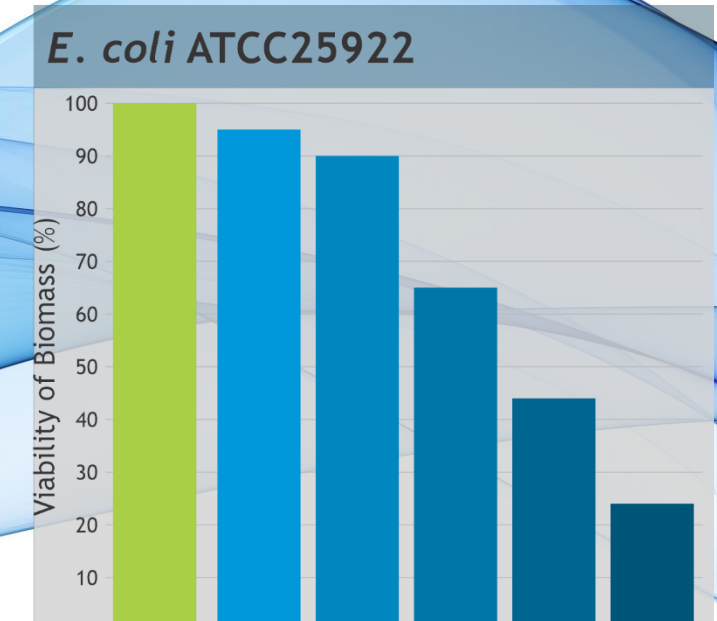
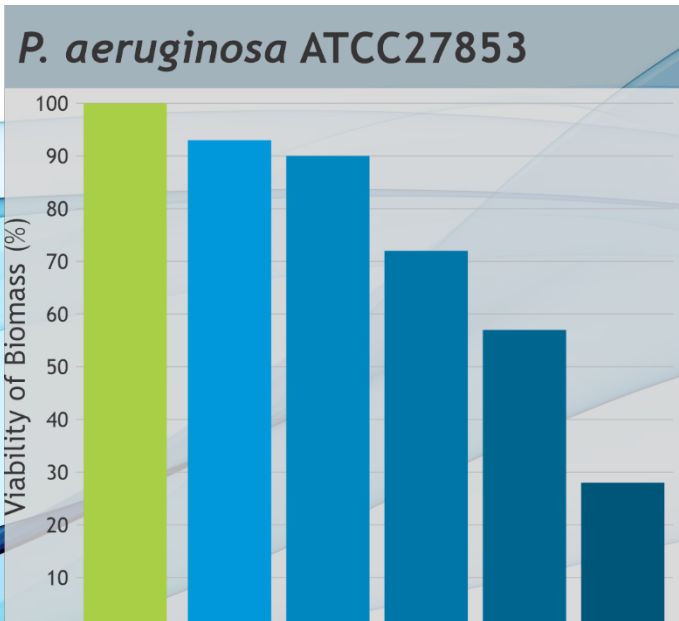
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Potential perturbation of bacterial membrane synthesis

Promotion of very high oxidative stress in bacteria

High antibacterial activity against *Staphylococcus aureus* and *Escherichia coli*



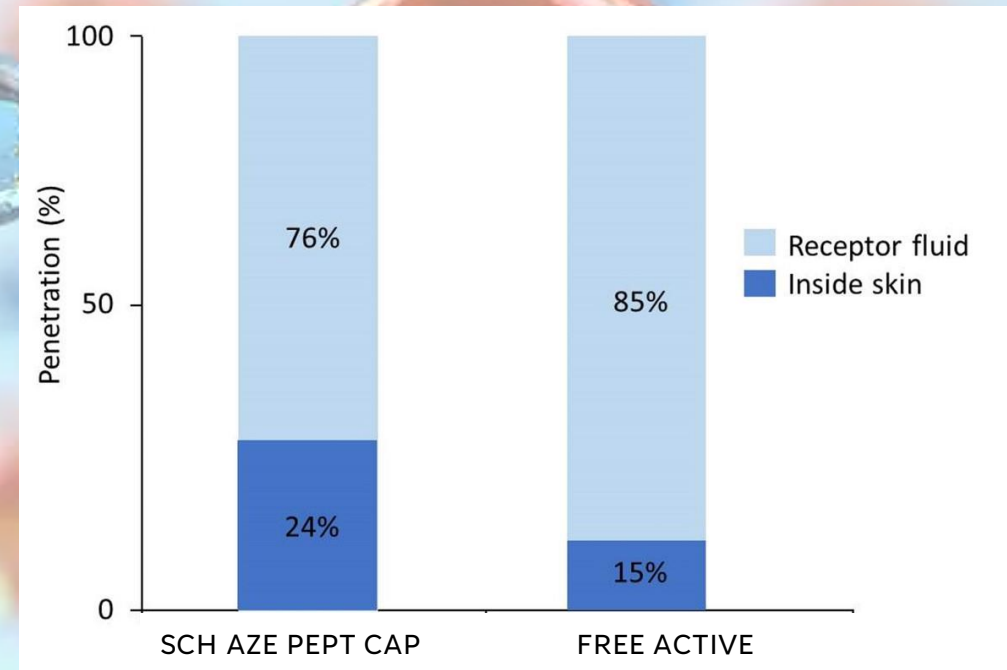
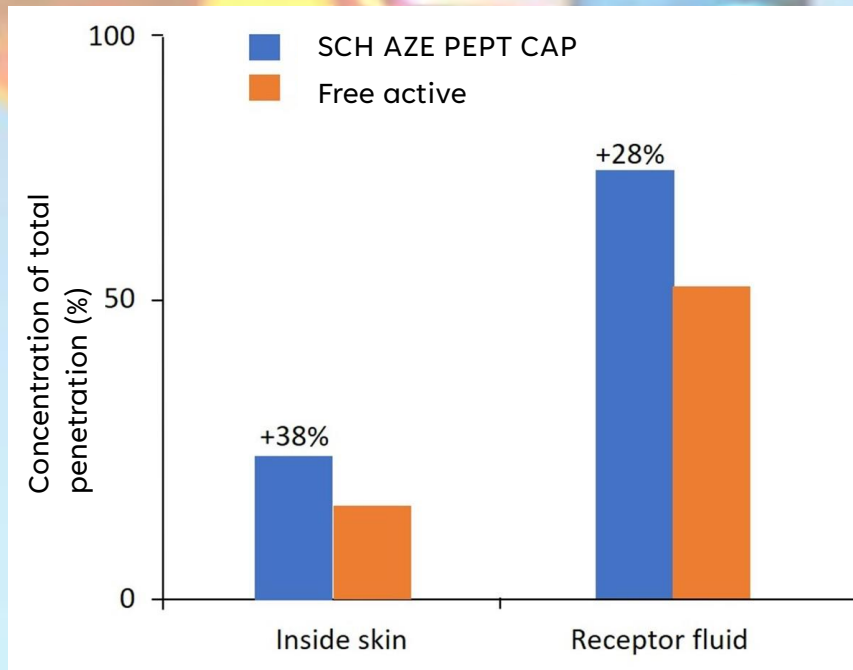
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## Qualitative analysis of penetration and skin retention.

The skin penetration of SCH AZE PEPT CAP capsules have shown the ability to penetrate an average of 30% more than free active administrated alone. Normalizing the total penetrated amounts of all data collected by the quantitative analysis, the relative expression values were 24% and 15% retained inside the skin and 76% and 85% in the receptor fluid.

(Fig 2 and Fig 3).

Fig 2. Penetration at 20 h after application.



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### Speed and depth of penetration into the skin.

There was found a fast and deep penetration of SCH AZE PEPT CAP within skin at 20h of topical application. At 1h of application, capsules started penetrating skin Dermis zone. At 20h, it was much deeper in the Dermis, while when free active was applied in free form it was seen that they remained on the surface of the skin. (Figure 4).

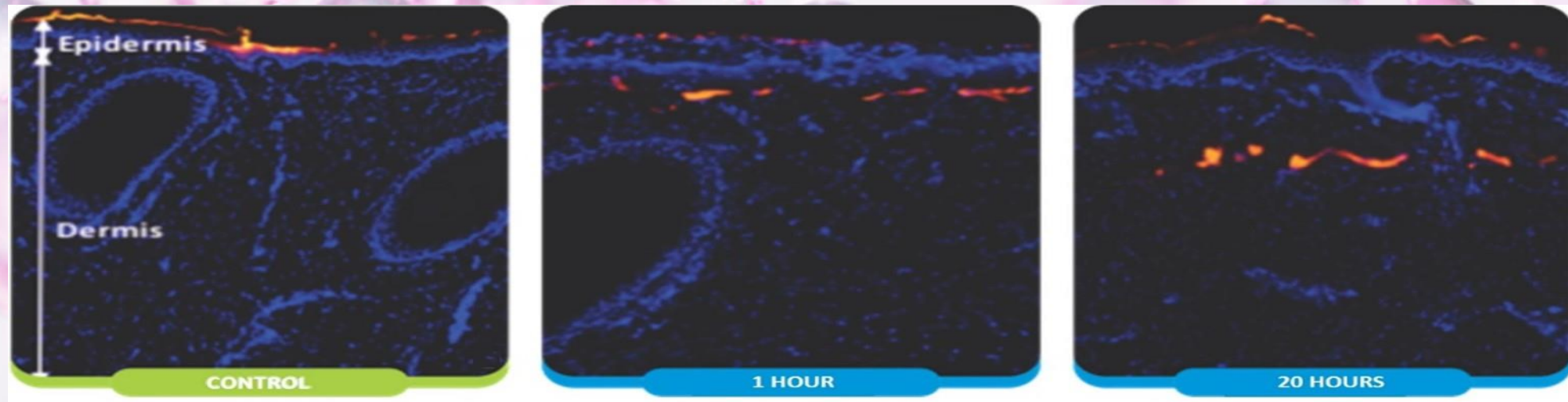


Fig 4. Confocal microscopy images of skin slices at 0, 1 and 20h.

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## Conclusions

The penetration of the SCH AZE PEPT CAP capsules into the skin was favored by 30% compared to free active.

This fact confirms the advantages of the administration system applied, since while the free active is released and acts quickly, the encapsulated one takes more time to release, which will make the effect continue for a longer period.

The morphology and size of capsules were suitable for a deep skin penetration.

## SPECIFICATIONS

- Appearance: solution and powder
- INCI.: Water, Azelaic acid, Palmitoyl tripeptide-36, Xanthan gum, Polycaprolactone, Polyvinyl alcohol, Sorbitan stearate
- Additives: 1,3 propanediol, 1,2 Hexanediol, caprylyl glycol
- Solubility: Dispersible in water
- Recommended dose: 3-5%
- Legal status: EUROPE, USA



# THANK YOU

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



**Special  
chemicals**