

A decorative graphic on the left side of the slide consists of a cluster of teal hexagons. Each hexagon contains a black icon related to medicine or health. The icons include: a face with a vertical line through the center, a person lying on a gurney, a pair of underwear, a hand holding a syringe, a flame, a foot, a head with dots, a hand with a flame, a bandage, a circular arrow with a hexagon inside, a wavy line, a drop with a plus/minus sign, and a circular arrow with a dollar sign and a cross.

TOPSKIN

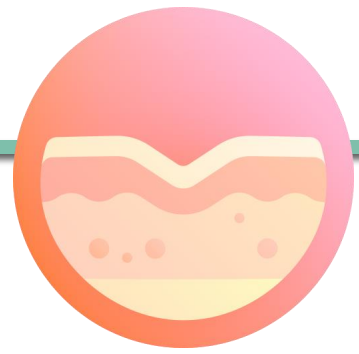
A NEW TECHNOLOGY WITH A LARGE POTENTIAL FOR SKIN APPLICATIONS
protected with the patent application PCT/IB2023/056516 (pending)

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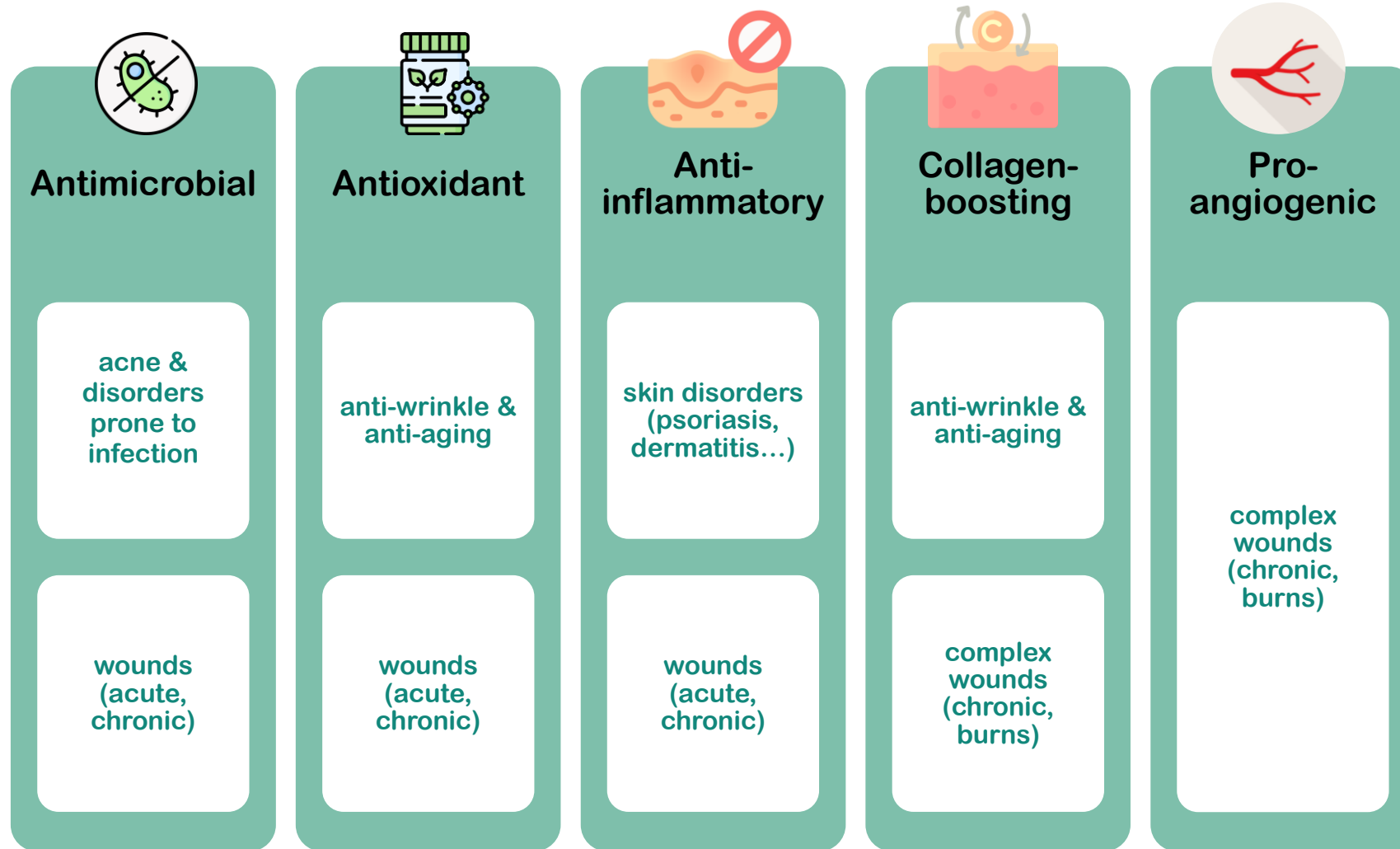
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What is TOPSKIN

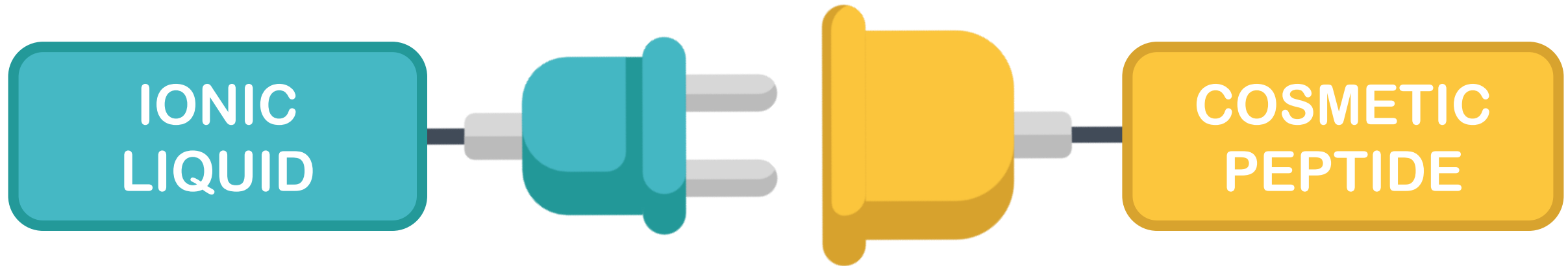
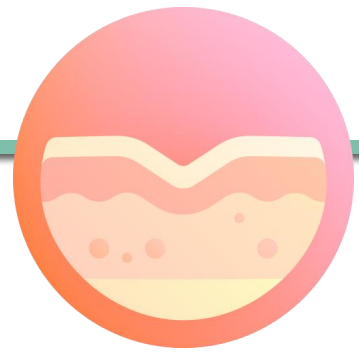


- a new technology offering collagen-boosting, antimicrobial, anti-inflammatory, antioxidant and pro-angiogenic properties in a single product

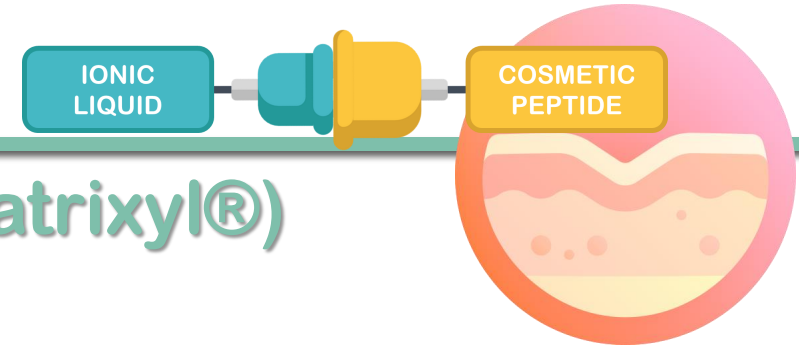


What is TOPSKIN

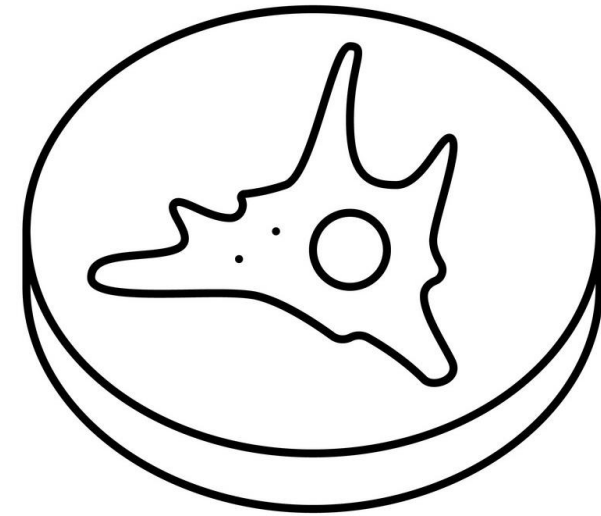
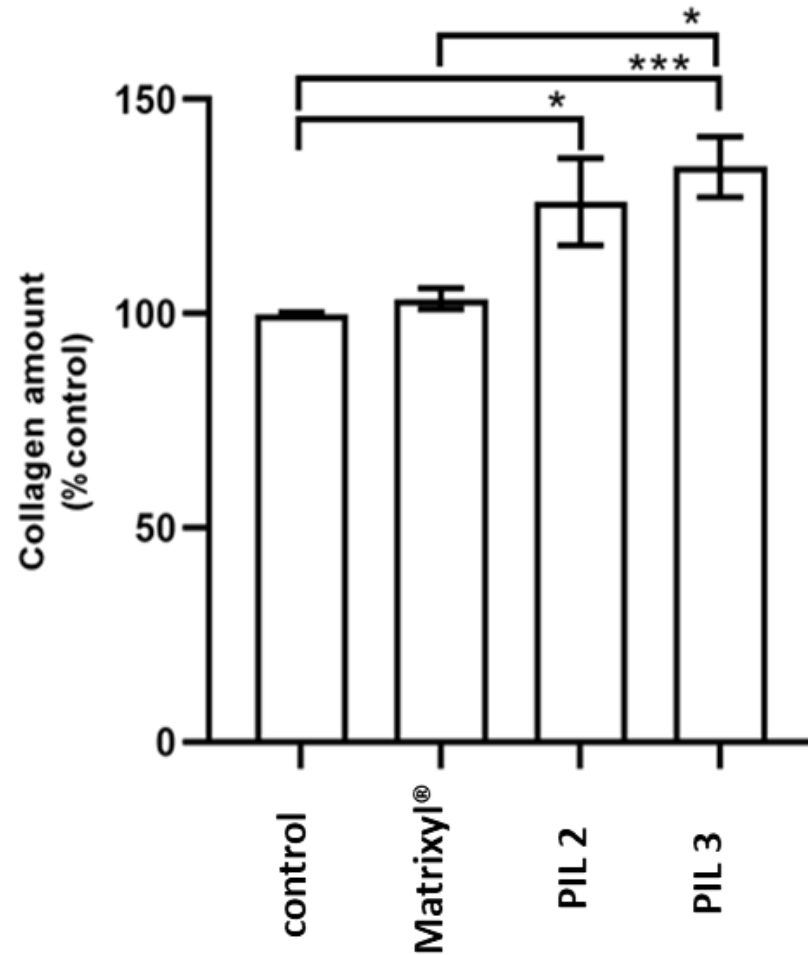
- based on a clean&simple modification of small peptides (3 to 5 amino acids) already used in high-end cosmetics, using antimicrobial ionic liquids



TOPSKIN's main features

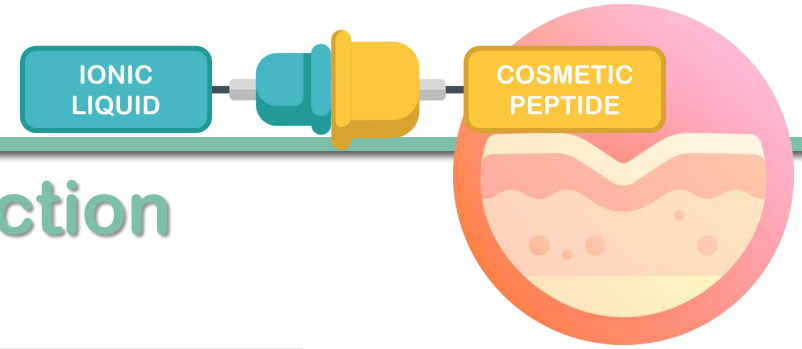


collagen-boosting action superior to PPP-4 (Matrixyl®)

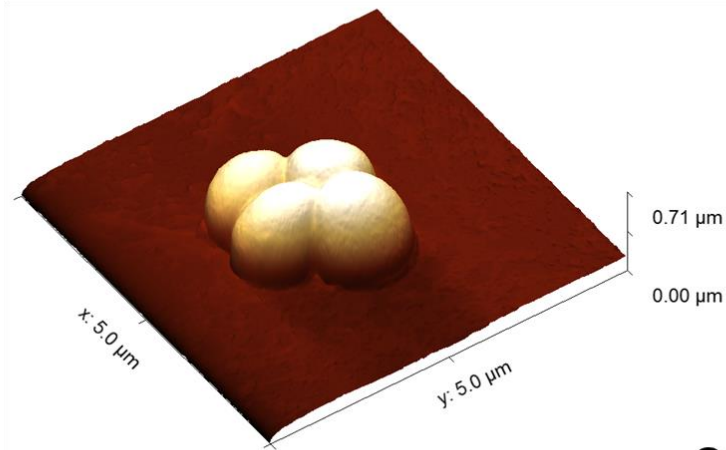
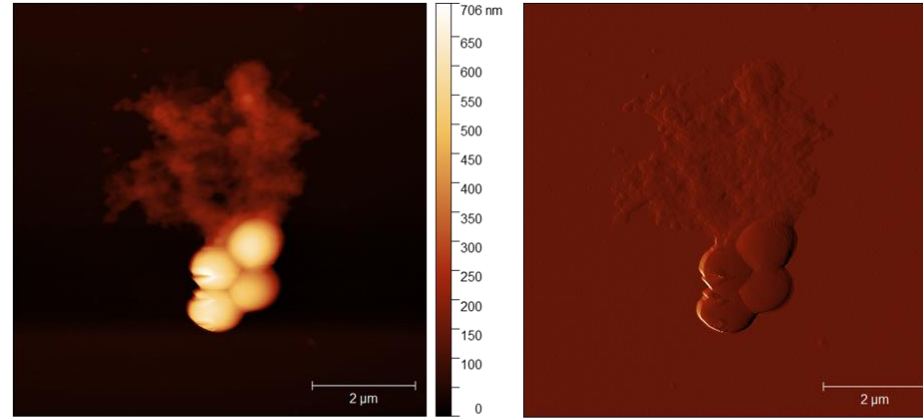
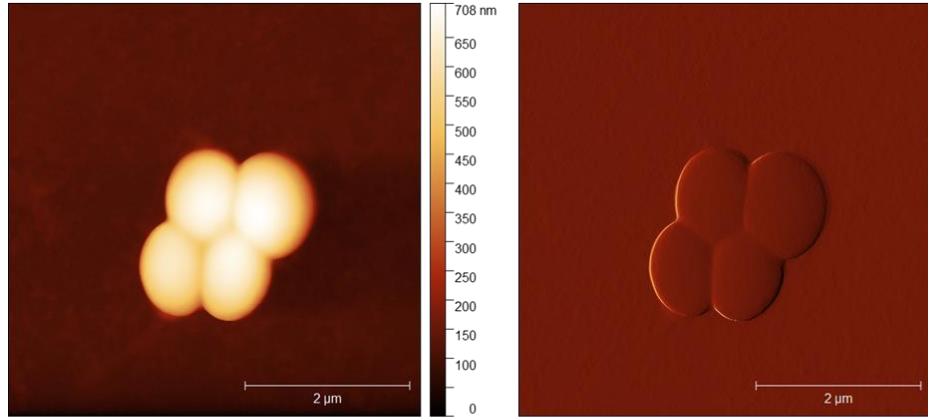


in vitro (human dermal fibroblasts)

TOPSKIN's main features

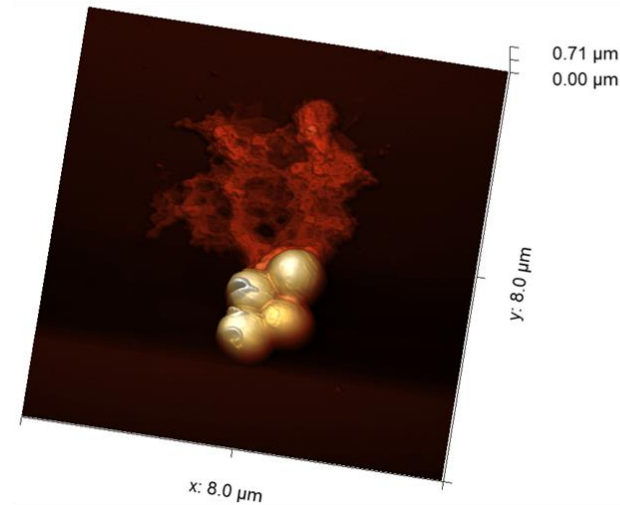


wide-spectrum “detergent-like” microbicidal action



S. aureus 29213

control
test

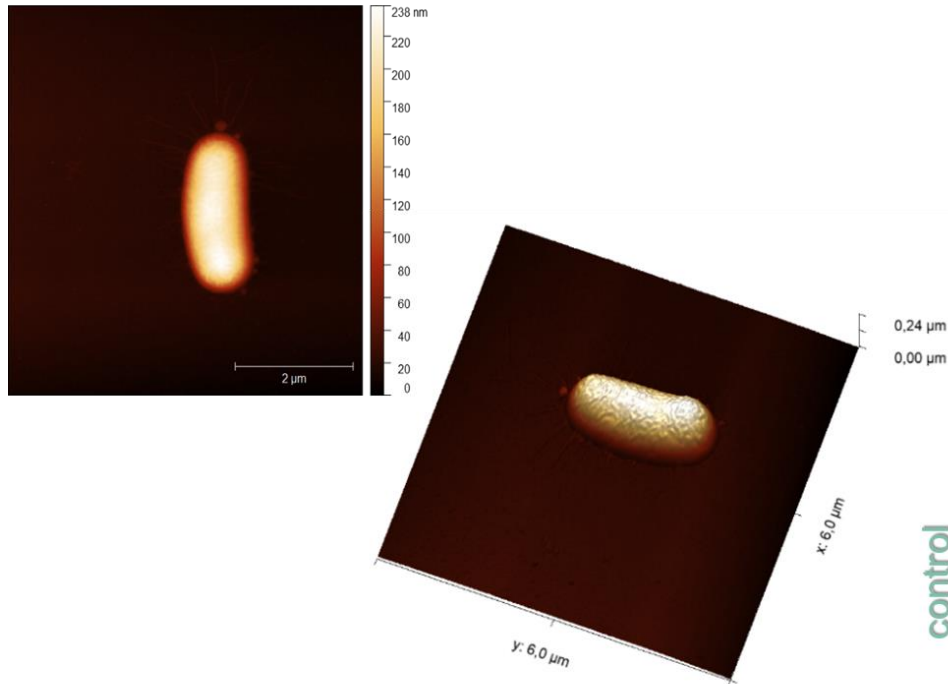
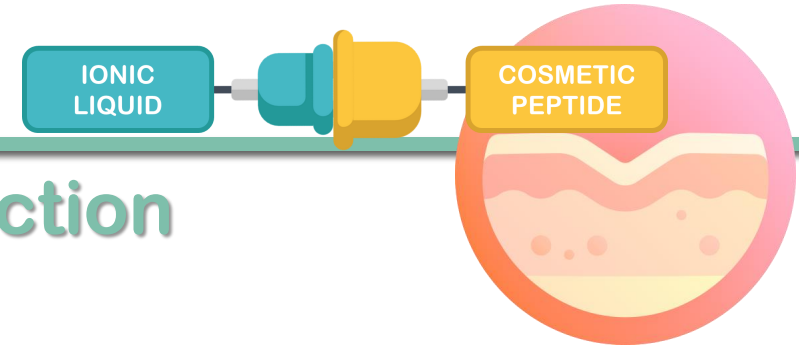


MIC = MBC/MFC (μM)

ATCC bacteria: 5-59
MDR bacteria: 19-38
Candida spp.: 2-5

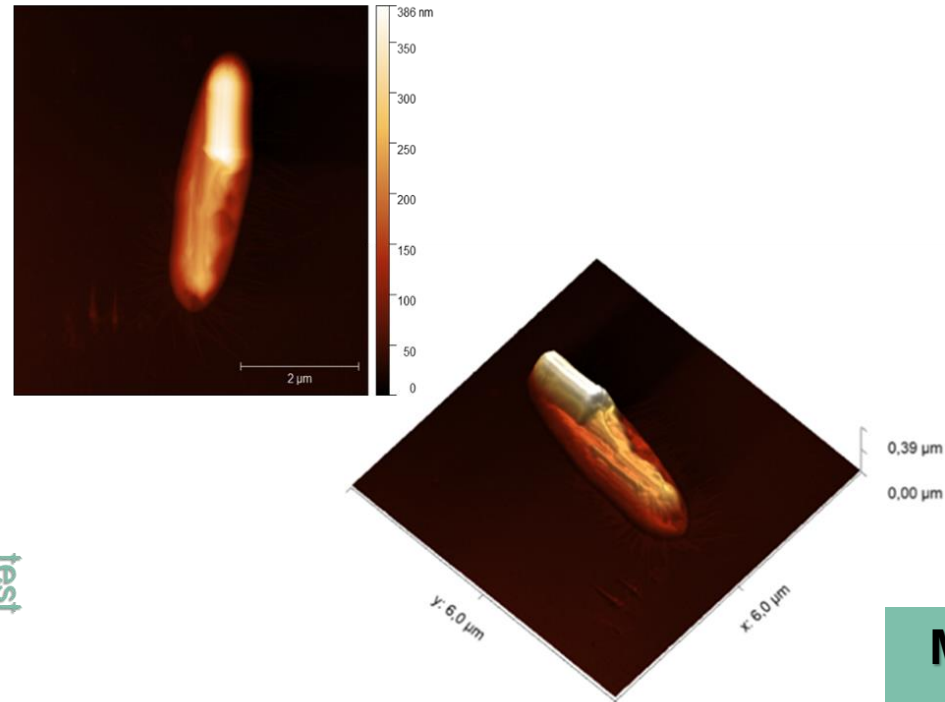
TOPSKIN's main features

wide-spectrum “detergent-like” microbicidal action



control

E. coli 25922



MIC = MBC/MFC (μM)

ATCC bacteria: 5-59

MDR bacteria: 19-38

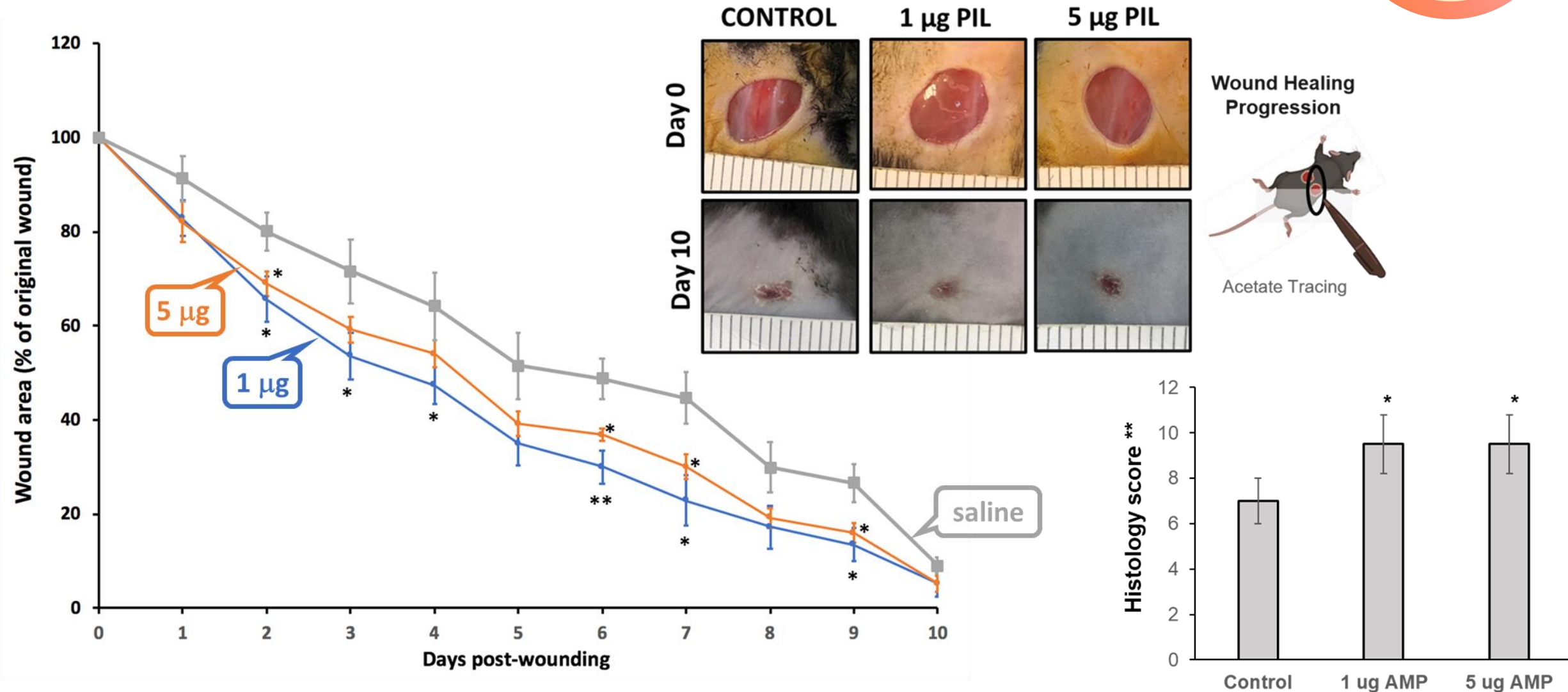
Candida spp.: 2-5

TOPSKIN's main features

IONIC
LIQUID

COSMETIC
PEPTIDE

faster wound maturation and healing on diabetic mice



TOPSKIN's main features

IONIC
LIQUID



COSMETIC
PEPTIDE



faster clearance of microbiota in wounds of diabetic mice



Bacterial counts
at regular time
points

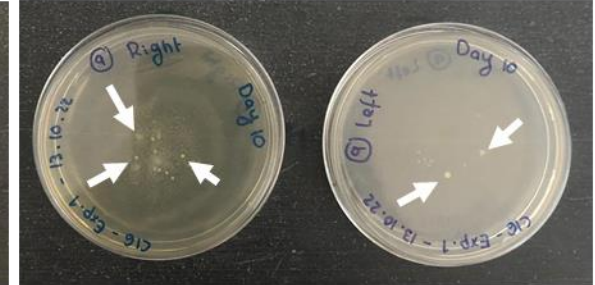
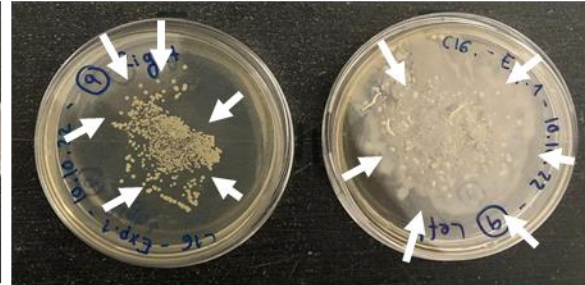
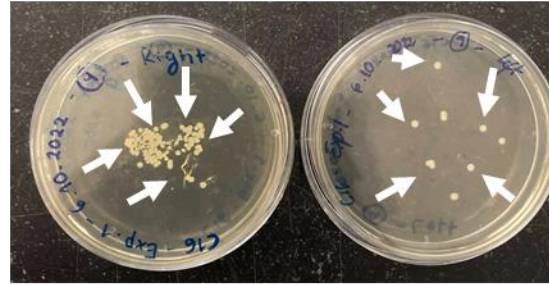
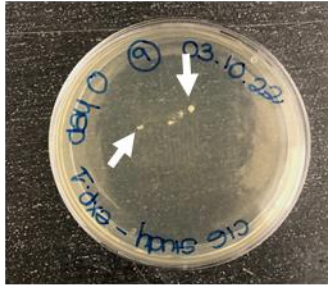
Day 0

Day 3

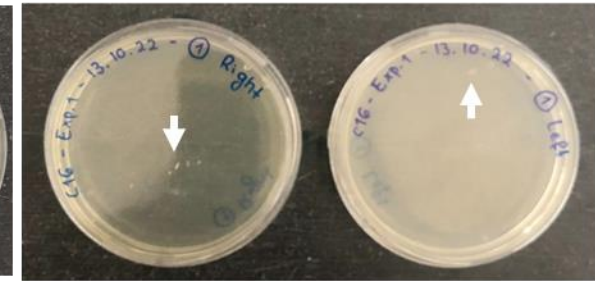
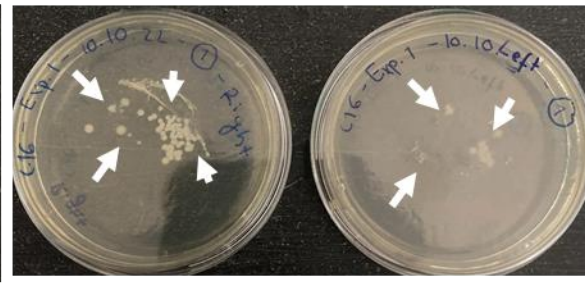
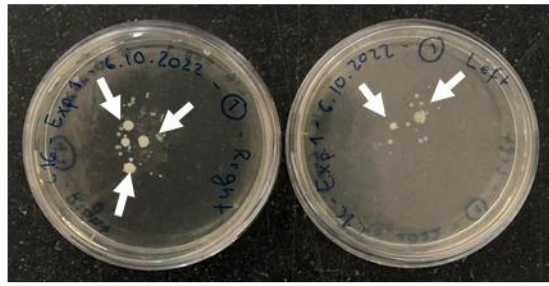
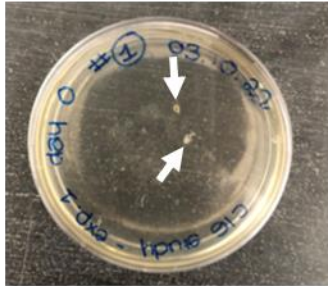
Day 7

Day 10

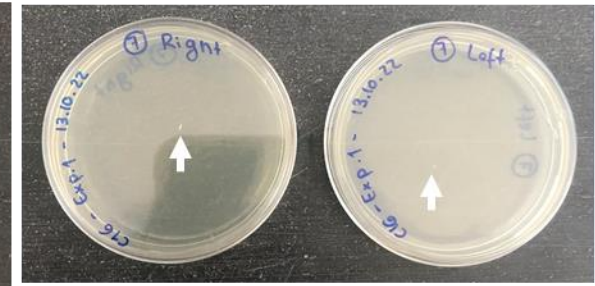
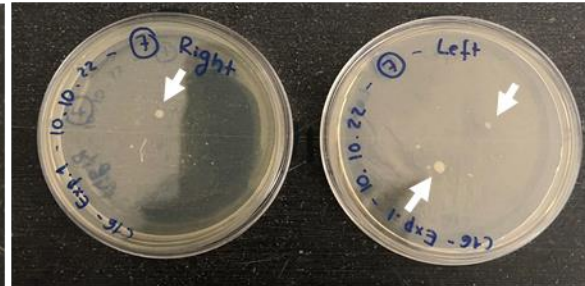
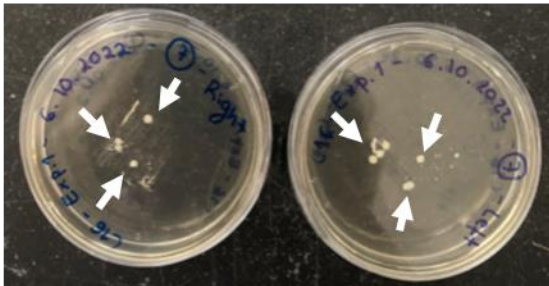
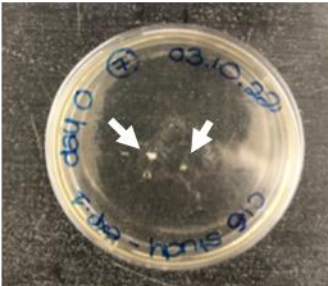
Control



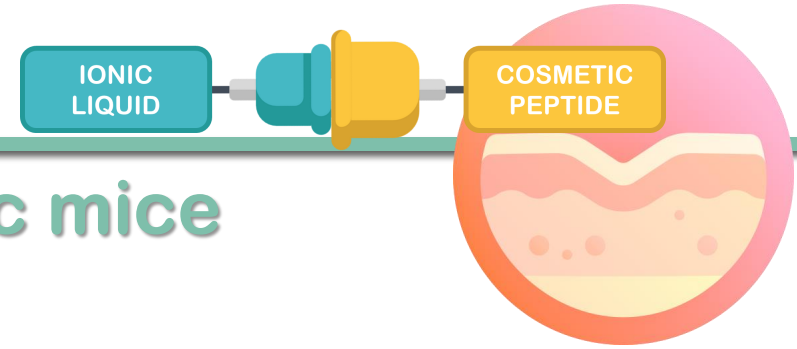
1µg AMP



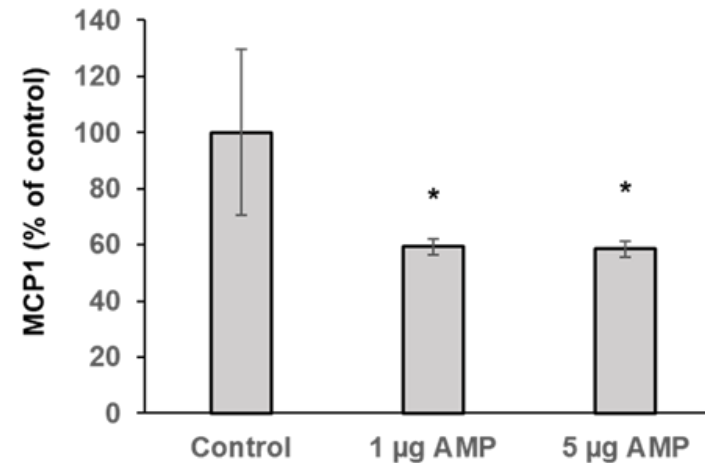
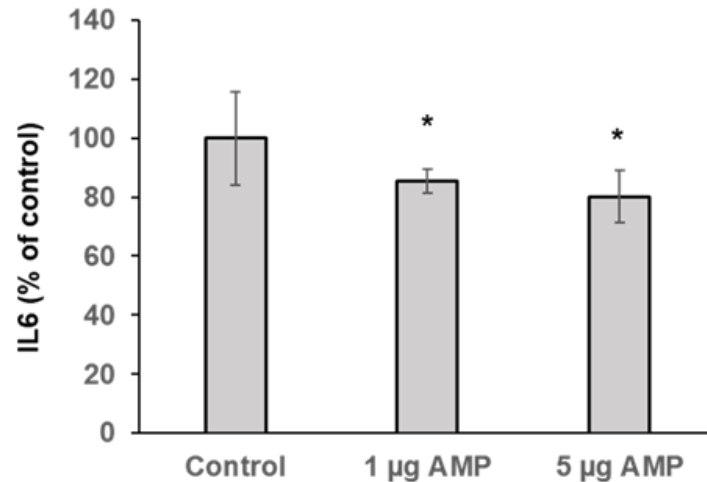
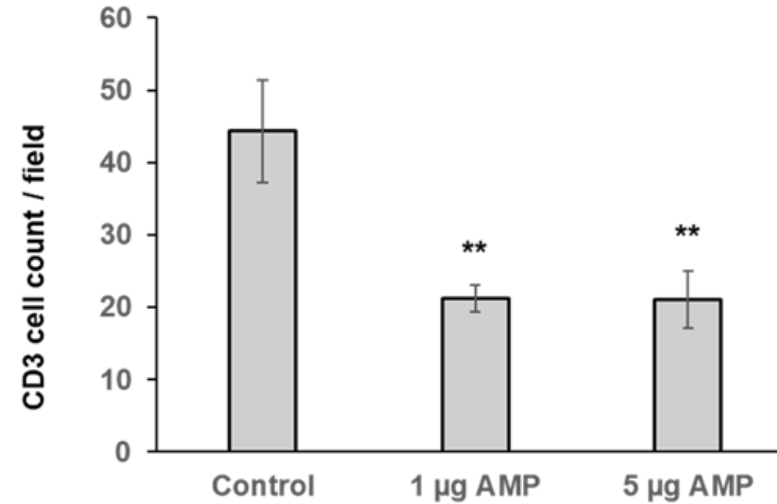
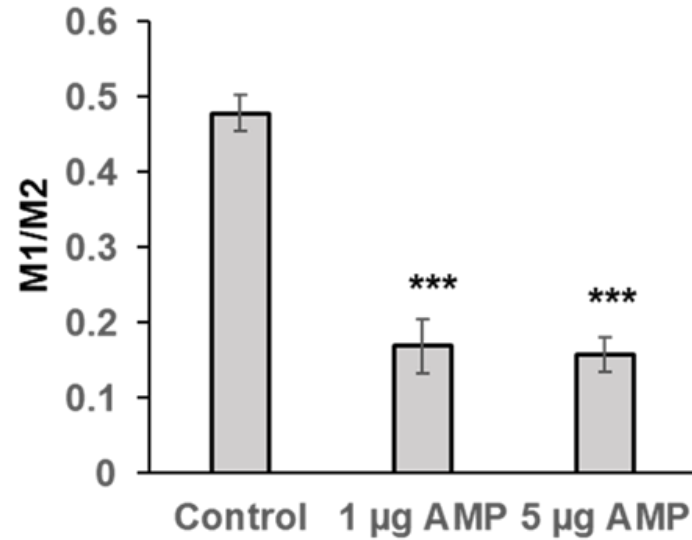
5µg AMP



TOPSKIN's main features

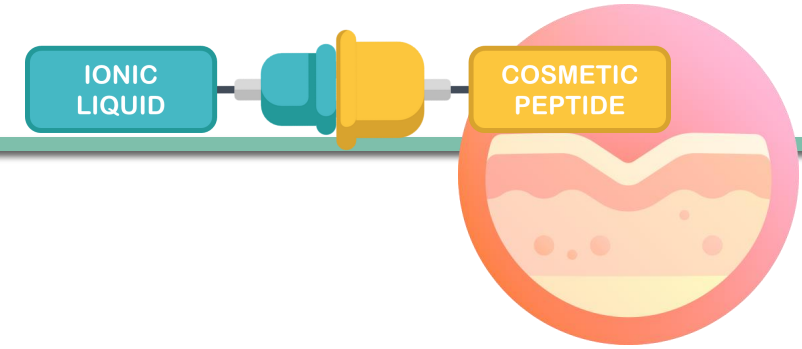


anti-inflammatory effects in wounds of diabetic mice

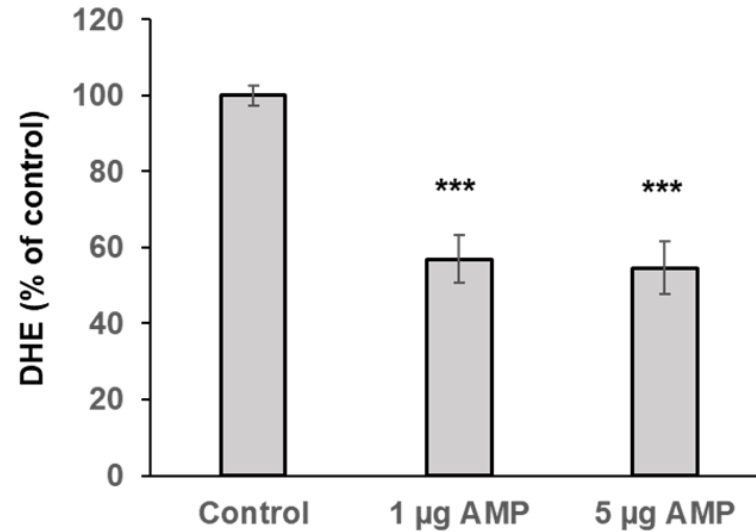


TOPSKIN's main features

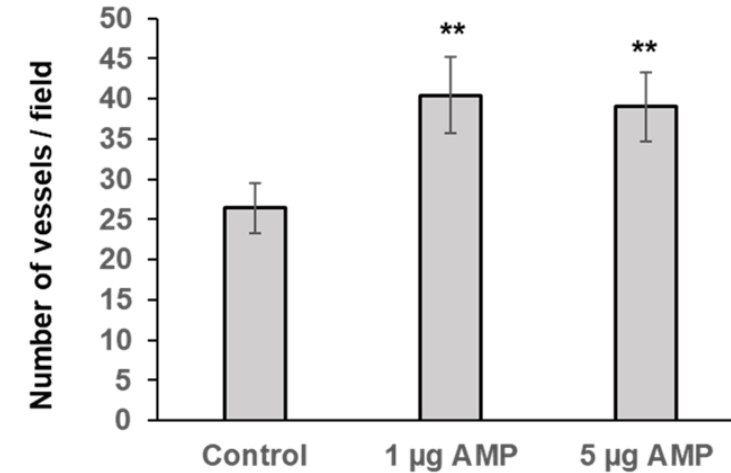
antioxidant and proangiogenic effects
in wounds of diabetic mice



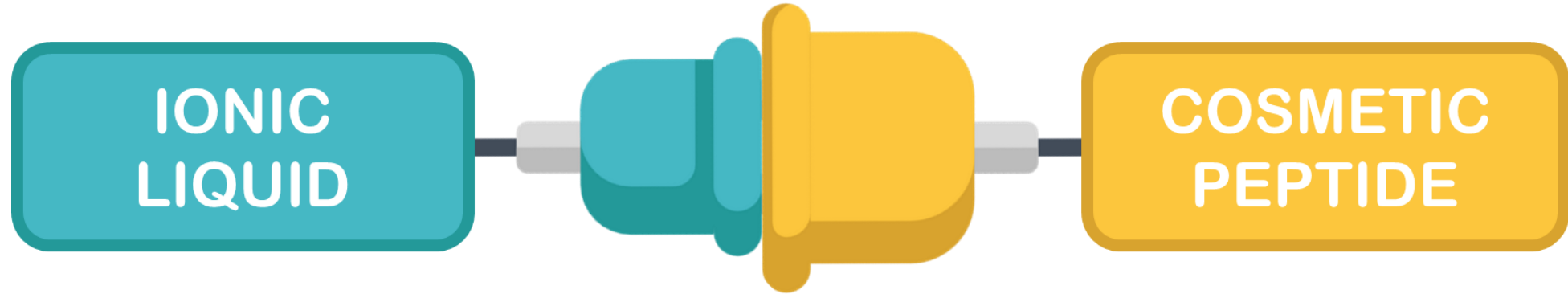
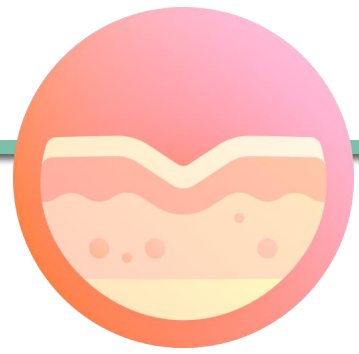
Decreased ROS levels



Improved angiogenesis



TOPSKIN's other expected features



- ✓ small ecological footprint (peptide-based)
- ✓ low propensity to induce cross-resistance
- ✓ expectedly good dermal permeation with relatively low transdermal absorption

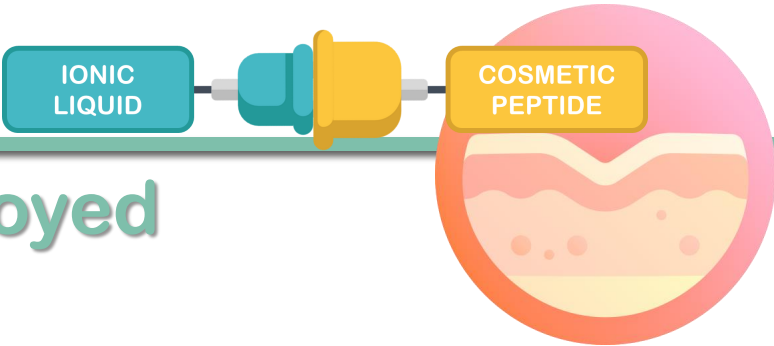


TOPSKIN is a new multifunctional product
with many prospective skin applications

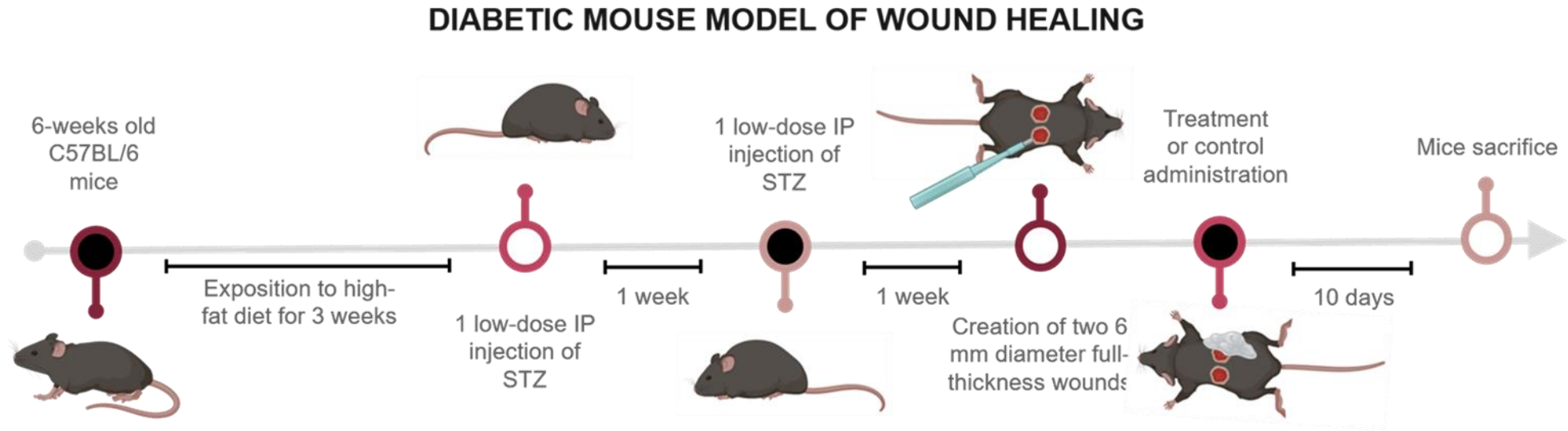
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ANNEX 1: detail on the T1D mouse model employed



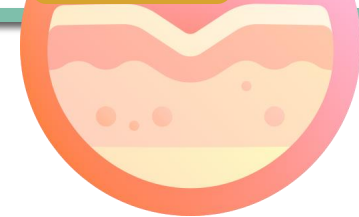
Groups	Body Weight (g)	Glycaemia (mg/dL)	n
Control	24.1±1.1	496.7 ± 74.7	3
1 µg PIL	26.4±1.1	505.5 ± 81.2	4
5 µg PIL	24.7±1.7	444 ± 59.0	4

TOPSKIN's *ex vivo* assays

IONIC
LIQUID



COSMETIC
PEPTIDE



ANNEX 2: histology score*

Wound healing phase/Parameter	Description	Score
Re-epithelization	Complete 95-100%	2
	Partial >0% - <95%;	1
	None 0%	0
Epidermal thickness* *ET = [average thickness of epidermis in wound area]/[average thickness of epidermis in uninjured skin]x100	Normal 95–105%	2
	Hypertrophy >105%	1
	Hypoplasia <95%	0
Keratinization	<u>Yes</u> Loosely attached/lost layers or thick parakeratotic stratum corneum	2
	<u>No</u> None	0
Granulation tissue	Intact dermis; Dermal layer intact no granular infiltrates consistent with healing.	2
	Thick granulation tissue >100 mm	1
	Thin granulation tissue <100 mm	0
Remodeling	<u>Complete</u> All of the following parameters visible within wound area: (1) Dermal white adipose tissue; (2) Skin Appendages; (3) Panniculus carnosus regeneration.	2
	<u>Partial</u> Either of the following parameter visible within wound area: (1) Collagen deposition; (2) Dermal white adipose tissue.	1
	<u>None</u> No evidences of remodeling.	0
Scar elevation# #SE = [average dermis thickness in wound area]/[average dermis thickness in uninjured skin]x100	Normal 95–105%	2
	Hypertrophied >105%	1
	Hypoplasia <95%	0

* Van De Vyver et al. (2021), *Stem Cells and Development*, 30(23), 1141-1152.

