



BIOGRÜNDL, S.L.
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TECHNICAL DATA SHEET

OPUNTIA EXTRACT / A / HGL / CA11 /



Trade Name: OPUNTIA EXTRACT / A / HGL / CA11 /.

Product Code: EOPAHGLCA11.

INCI Name: AQUA, GLYCERIN, OPUNTIA COCCINELLIFERA FLOWER EXTRACT, POTASSIUM SORBATE.

INCI Status: Conforms.

REACH Status: Low Volume Exemption.

CAS Number: 7732-18-5; 56-81-5; 90082-21-6; 24634-61-5 / 590-00-1.

EC Number: 231-791-2; 200-289-5; 290-109-1; 246-376-1.

Origin: GLYCERIN: Vegetable origin.

OPUNTIA COCCINELLIFERA FLOWER EXTRACT: Vegetable origin.

POTASSIUM SORBATE: Synthetic origin.

Processing: GMO Free. / No Ethoxylation. / No Irradiation. / No Sulphonation. / No BSE/TSE. / No CMR. / No SVHC. / No Nanomaterial. / No DEG. / No DEHP. / No Formaldehyde. / No Phthalates. /

Additives: Preservatives: Potassium sorbate. Paraben Free. / Antioxidants: None. / Other additives: None.

Solvents Used: Water and glycerin.

Appearance: Clear or slightly opalescent liquid.

Colour: Characteristic (yellowish to deep brown).

Odour: Characteristic.

Specific gravity: 1,050 - 1,300 g/cm³ (20°C approx.).

Direct pH value: 4,5 - 6,5 (20°C approx.).

Soluble/ Miscible: Water. Surfactants. Hydroalcoholic, hydroglyceric and hydroglycolic mixtures.

Ecological Information: Sustainable.

Microbial Count: **Total aerobics:** Max. 300 microorganisms / gram.

Fungi and yeasts: Max. 200 microorganisms / gram.

Pathogens: Total absence in 1 gram.

Suggested Use Levels: 2,0 – 10,0%.

Suggested Applications: Delicate, irritated or allergic skin preparations. Cleaning products. Sun protection and after sun products.

Properties: Moisturizing, calming, protective, detergent and stabiliser.

Industrial packing: 1Kg., 5Kg., 25Kg.

Storage conditions: It is very important to keep the product in well closed containers, away from direct sunlight at temperatures not over 15°C. In case of not having refrigerators, store the product in the coolest and free from artificial light area.

Bibliography: - Atlas Ilustrado de Plantas Medicinales y Curativas, Ed. Susaeta.

- Dumont's grosse Kräuter Enzyklopädie.

- Fitocosméticos ALVAREZ CRUZ i BAGUE SERRANO.

- Gran enciclopedia de las plantas medicinales, BERDONCES i SERRA.

- Plantas medicinales, FONT i QUER.

- Proserpio G., Martelli A., Patri GF.; Elementi di Fitocosmeci; Ed. Sepem / Milano 1983.

- Websites.



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OVERVIEW

Opuntia (*Opuntia coccinellifera*) belongs to the Cacti family, it is originally from Central America and, is currently, widespread throughout the entire Mediterranean Basin, particularly in dry, sunny areas. It adapts very well to dry soils and this is why it has lost its leaves, to reduce water loss as much as possible. Its stem, composed of a succession of blades, is rich in chlorophyll and ingredients with an enormous power for retaining humidity, even in the most extreme environmental conditions.

The humidity retaining ingredients are polysaccharides of a mucilaginous nature, made up of long linear chains of 30 to 50 molecules of D-galacturonic acid bonded by 1,4 alpha-glycoside links. The carboxylic groups from galacturonic acid are partially esterified in methyl esters form. In addition, the polygalacturonic chain regularly includes arabinose and galactose molecules. The physical and chemical explanation to the high moisture retaining power of the polysaccharide chains is in the hydrogen links that are formed by water molecules.

They also contain organic acids (ascorbic, citric, lactic and malic) as well as small amounts of mono- and disaccharides. One should also take into account the cereinic acid glucosides and the opuntia flavonoid, a flavonoid composed of glucose and trihydroxymethoxyflavonol.

OPUNTIA EXTRACT by BIOGRÜNDL, S.L. is obtained from the stems through a process that extracts practically all the most important active ingredients. The base is a water-glycerin solution.



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USE AND DOSAGE

The incorporation in cosmetics of opuntia extract is justified by the following properties:

- Moisturizing, by forming a moisture retaining film that moisturises the surface of the skin as well as deeper inside. It, also, gives it a fresh feeling.
- Calming, due to its content in mucilages and flavonoids. Irritated, sensitive or allergic skin will improve extraordinarily.
- Protective, thanks to the film it forms on the skin, also, its content in flavonoids, chlorophyll and sugars.
- It is an anti-radical against UV and IR radiation, as well as against unfavourable environmental conditions.
- Detergent, it has certain cleansing power thanks to its content in anionic and ionic saponins.
- Stabiliser for emulsions, thanks to its colloidal nature, if they are formulated with anionic or non-ionic emulsion agents, notably improving their touch, stability, shine and ease of application.

Its use is particularly recommended thanks to its moisturizing and humectant properties. Also in preparations for delicate, irritated or allergic skins. In cleaning products and to help protection in sun protection and after sun products. Its antiradical and anti-ageing qualities should also be taken into account, and the fact that it improves the quality of emulsions.

If turbidity is observed, it is advisable to previously dissolve the product in a portion of the water provided to manufacture the final product and filter after 12-24 hours.

The recommended concentrations of use are between 2% and 10%. For very special effects the dosage can raise up to 15%.



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PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear or slightly opalescent liquid.

Colour: Characteristic (yellowish to deep brown).

Odour: Characteristic.

Direct pH value: 4,5 - 6,5 (20°C approx.).

Specific gravity: 1,050 - 1,300 g/cm³ (20°C approx.).

Solubility in water: Fully soluble (20°C approx.).

Solubility in other solvents: Insoluble in organic solvents and lipids. Soluble in surfactants, hydroalcoholic, hydroglyceric and hydroglycolic mixtures.

Heavy metals: No more than 5 mg/Kg.

Sulfated ash: No more than 0,01%.

Chlorides: No more than 0,007%.

Sulfates: No more than 0,002%.

Other information: None.

Total aerobics: Max. 300 microorganisms / gram.

Fungi and yeasts: Max. 200 microorganisms / gram.

Pathogens: Total absence in 1 gram.

DERMATOLOGY INNOCUOUSNESS

It was performed by the patch test (Patch test) on 10 volunteers. To this purpose, 15% OPUNTIA EXTRACT by BIOGRÜNDL, S.L., was added to an O/W emulsion; 0,5g. of this emulsion was poured over the patch and attached on the forearm. It is thus maintained for 24, 48 and 72 hours, after which, the given reaction was evaluated, according to the following table of values:

1. No erythema.
2. Slight erythema.
3. Well defined erythema.
4. Severe erythema.

The result was absence of erythema on the 10 volunteers.

On the recommended concentrations, the product is skin innocuous.



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STORAGE CONDITIONS

It is very important to keep the product in well closed containers, away from direct sunlight at temperatures not over 15°C. In case of not having refrigerators, store the product in the coolest and free from artificial light area.

INCI DENOMINATION

AQUA, GLYCERIN, OPUNTIA COCCINELLIFERA FLOWER EXTRACT, POTASSIUM SORBATE.

EFFECTIVENESS TESTS

Assay: Double blind spot trial and subsequent cosmetic evaluation.

Assayed parameters: Moisturizing action. Calming action. Protective action.

N (volunteers): 30 (16 ♀ and 14 ♂).

Age (volunteers): 26 – 69 years old.

Left side part to be treated:

Placebo, 30 volunteers, suitable cosmetic base.

Right side part to be treated:

OPUNTIA EXTRACT 2%, 15 volunteers, suitable cosmetic base.

Right side part to be treated:

OPUNTIA EXTRACT 5%, 15 volunteers, suitable cosmetic base.



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Assayed parameters:

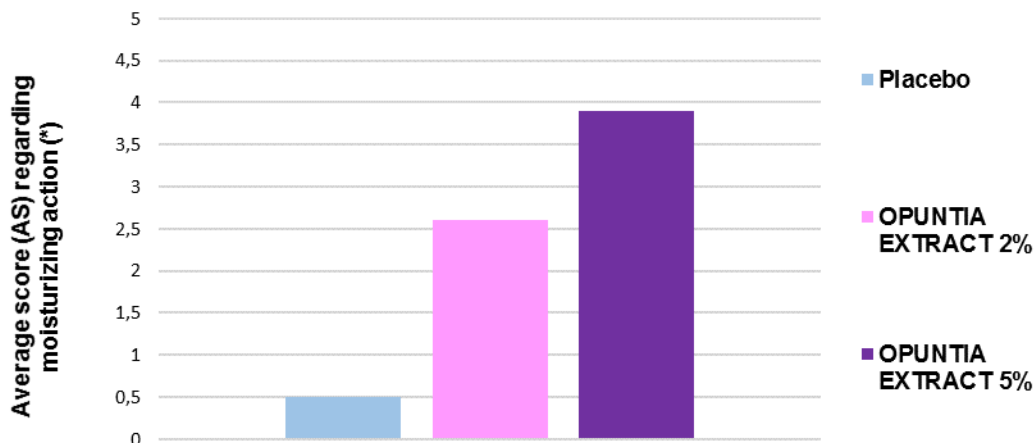
	Assay	N (volunteers)	Age (volunteers)	Placebo	OPUNTIA EXTRACT 2%	OPUNTIA EXTRACT 5%	Assay performed (Days)	Results measured (Days)
Moisturizing action	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 16 ♀ and 14 ♂	26 – 69	Left side part	Right side part 15 volunteers.	Right side part. 15 volunteers.	D = 30	D' = 30
Calming action	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 16 ♀ and 14 ♂	26 – 69	Left side part	Right side part 15 volunteers.	Right side part. 15 volunteers.	D = 30	D' = 30
Protective action	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 16 ♀ and 14 ♂	26 – 69	Left side part	Right side part 15 volunteers.	Right side part. 15 volunteers.	D = 30	D' = 1



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SKIN CONDITION EVALUATION AFTER 30 DAYS



(*) Moisturizing action was determined by using a device called Tewameter which evaluates moisturizing effectiveness, providing TEWL parameters (transepidermal water loss), on volunteers treated zone.

Total number of days in which the assay was performed (treatment was applied):
D = 30 days (every day during the effectiveness test).

Total number of days in which the results were measured:
D' = 30 days (every day during the effectiveness test).

Average score:

Worst result: Zero limit value is assigned.

Best result: Five limit value is assigned.

Score is assigned to obtained results between the two limit values.

Average computation for each obtained results group is done:

Placebo, 2% OPUNTIA EXTRACT by BIOGRÜNDL, S.L., 5% OPUNTIA EXTRACT by BIOGRÜNDL, S.L..

Results meaning:

AS rank between 0 – 1: No significant changes.

AS rank between 1 – 2: Slight improvement regarding placebo.

AS rank between 2 – 3: Appreciable improvement regarding placebo.

AS rank between 3 – 4: Great improvement regarding placebo.

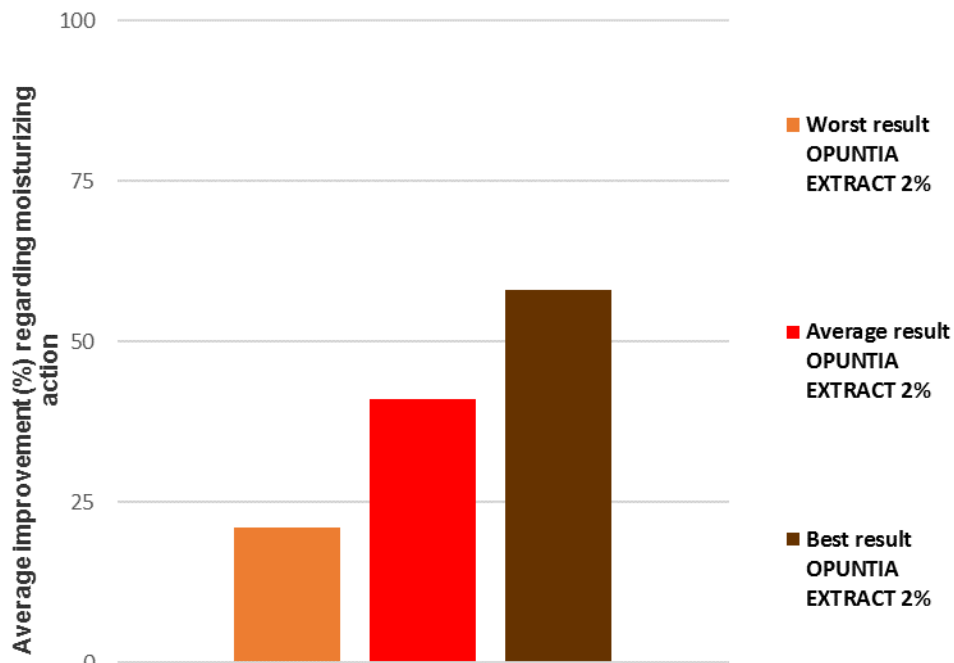
AS rank between 4 – 5: Excellent cosmetic result.



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TECHNICAL DATA SHEET

OPUNTIA EXTRACT 2%



Results:

Worst result OPUNTIA EXTRACT 2%: **21%**.

Average result OPUNTIA EXTRACT 2%: **41%**.

Best result OPUNTIA EXTRACT 2%: **58%**.

Results meaning:

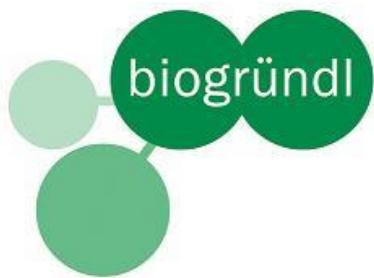
AI rank between < 20%: No significant changes.

AI rank between 21 – 40%: Slight improvement regarding placebo.

AI rank between 41 – 60%: Appreciable improvement regarding placebo.

AI rank between 61 – 80%: Great improvement regarding placebo.

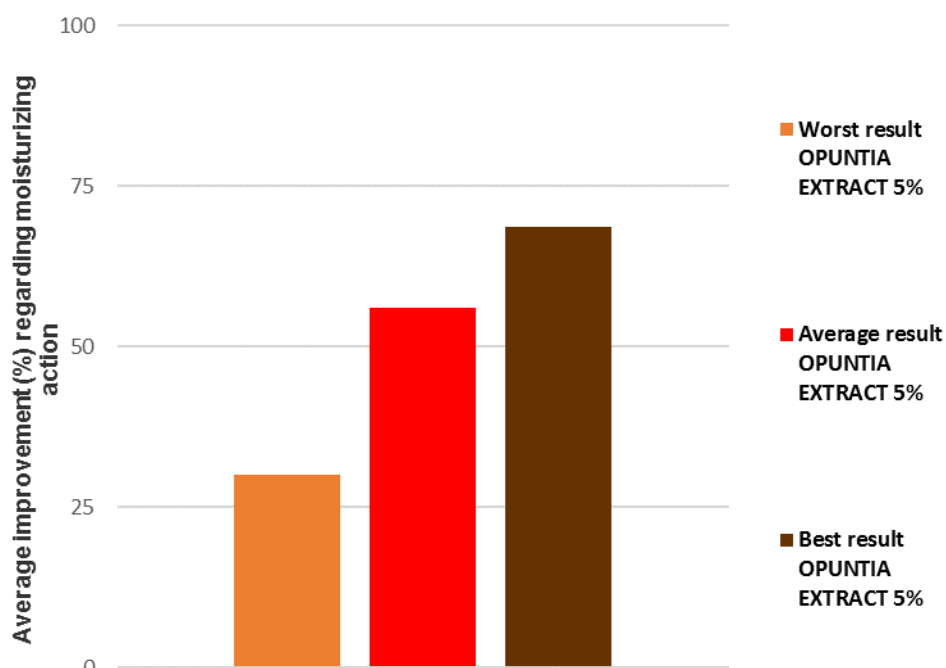
AI rank between > 81%: Excellent cosmetic result.



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OPUNTIA EXTRACT 5%



Results:

Worst result OPUNTIA EXTRACT 5%: **30%**.

Average result OPUNTIA EXTRACT 5%: **56%**.

Best result OPUNTIA EXTRACT 5%: **68,5%**.

Results meaning:

AI rank between < 20%: No significant changes.

AI rank between 21 – 40%: Slight improvement regarding placebo.

AI rank between 41 – 60%: Appreciable improvement regarding placebo.

AI rank between 61 – 80%: Great improvement regarding placebo.

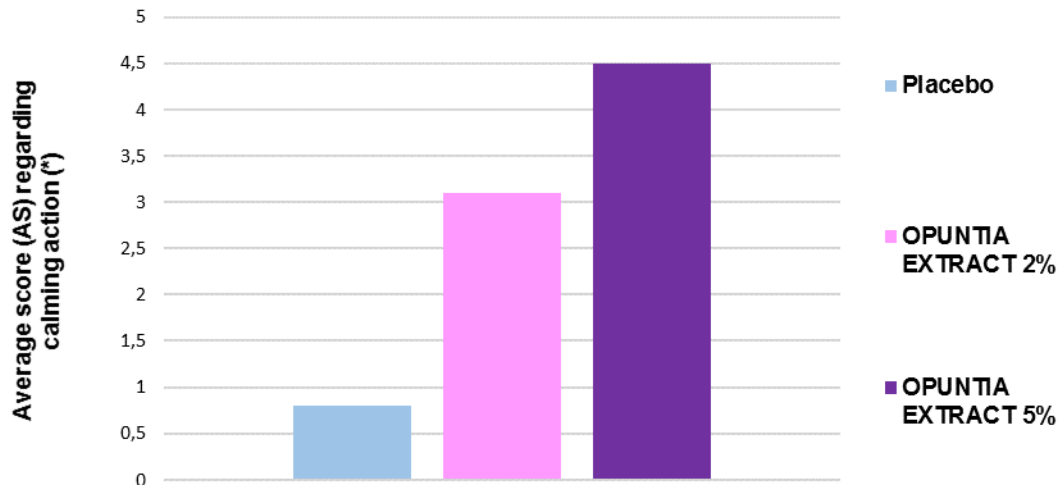
AI rank between > 81%: Excellent cosmetic result.



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SKIN CONDITION EVALUATION AFTER 30 DAYS



(*) Calming action was measured by itch, redness and warm feeling decrease, by subjective assessment from volunteers, in the treated skin zone.

Total number of days in which the assay was performed (treatment was applied):
D = 30 days (every day during the effectiveness test).

Total number of days in which the results were measured:
D' = 30 days (every day during the effectiveness test).

Average score:

Worst result: Zero limit value is assigned.

Best result: Five limit value is assigned.

Score is assigned to obtained results between the two limit values.

Average computation for each obtained results group is done:

Placebo, 2% OPUNTIA EXTRACT by BIOGRÜNDL, S.L., 5% OPUNTIA EXTRACT by BIOGRÜNDL, S.L..

Results meaning:

AS rank between 0 – 1: No significant changes.

AS rank between 1 – 2: Slight improvement regarding placebo.

AS rank between 2 – 3: Appreciable improvement regarding placebo.

AS rank between 3 – 4: Great improvement regarding placebo.

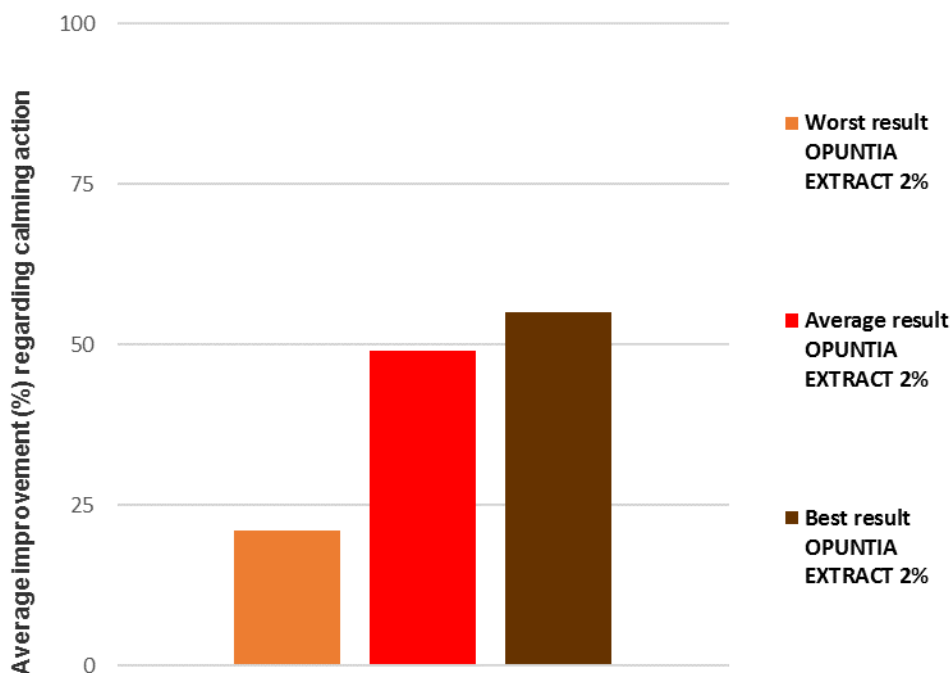
AS rank between 4 – 5: Excellent cosmetic result.



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OPUNTIA EXTRACT 2%



Results:

Worst result OPUNTIA EXTRACT 2%: 21%.

Average result OPUNTIA EXTRACT 2%: 49%.

Best result OPUNTIA EXTRACT 2%: 55%.

Results meaning:

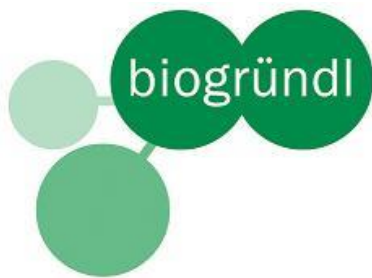
AI rank between < 20%: No significant changes.

AI rank between 21 – 40%: Slight improvement regarding placebo.

AI rank between 41 – 60%: Appreciable improvement regarding placebo.

AI rank between 61 – 80%: Great improvement regarding placebo.

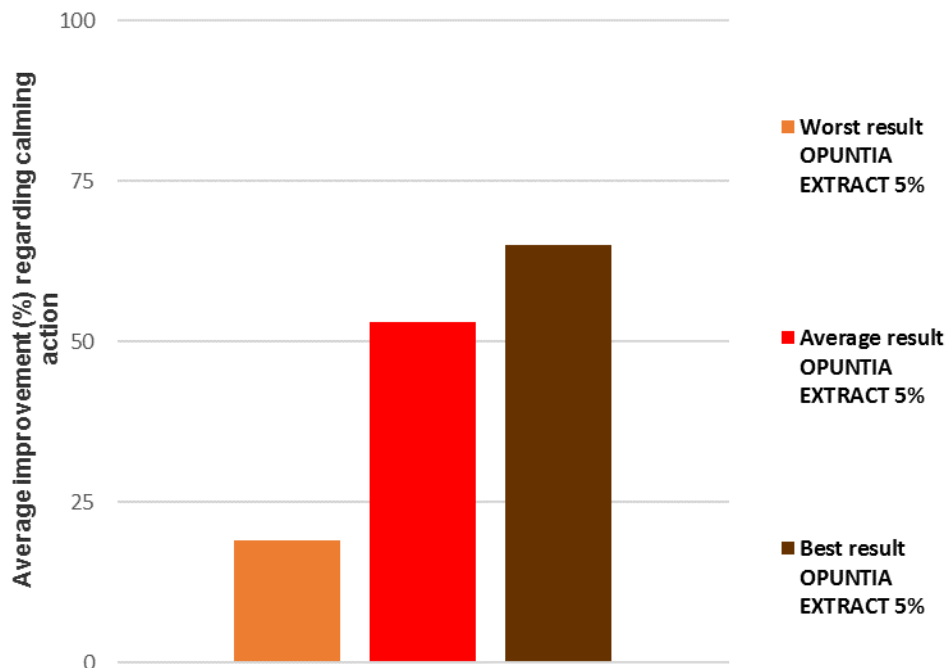
AI rank between > 81%: Excellent cosmetic result.



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OPUNTIA EXTRACT 5%



Results:

Worst result OPUNTIA EXTRACT 5%: **23%**.

Average result OPUNTIA EXTRACT 5%: **59,5%**.

Best result OPUNTIA EXTRACT 5%: **69%**.

Results meaning:

AI rank between < 20%: No significant changes.

AI rank between 21 – 40%: Slight improvement regarding placebo.

AI rank between 41 – 60%: Appreciable improvement regarding placebo.

AI rank between 61 – 80%: Great improvement regarding placebo.

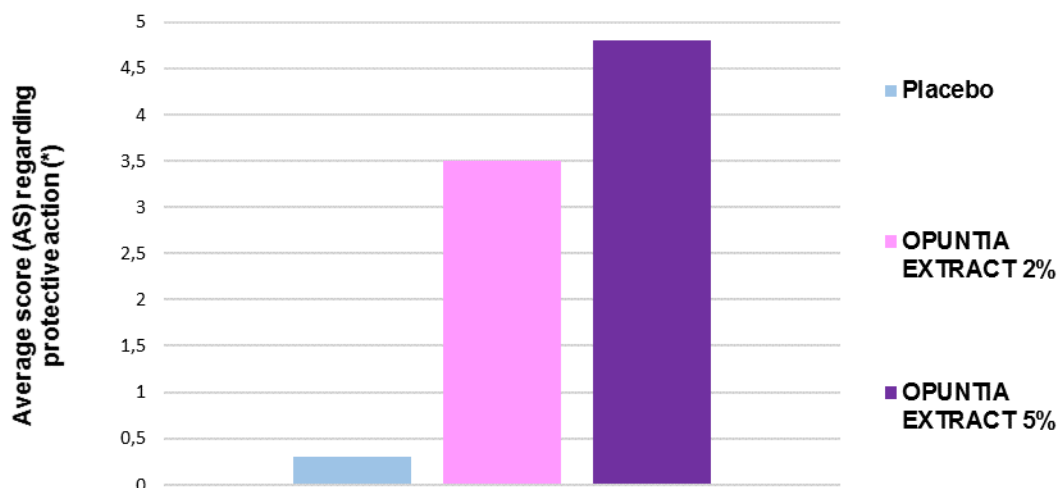
AI rank between > 81%: Excellent cosmetic result.



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SKIN CONDITION EVALUATION AFTER 30 DAYS



(*) Protective action was evaluated by direct observation of protection to damage produced in skin volunteers (unfavorable environment).

Total number of days in which the assay was performed (treatment was applied):
D = 30 days (every day during the effectiveness test).

Total number of days in which the results were measured:
D' = 1 day (effectiveness test last day).

Average score:

Worst result: Zero limit value is assigned.

Best result: Five limit value is assigned.

Score is assigned to obtained results between the two limit values.

Average computation for each obtained results group is done:

Placebo, 2% OPUNTIA EXTRACT by BIOGRÜNDL, S.L., 5% OPUNTIA EXTRACT by BIOGRÜNDL, S.L..

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AS rank between 2 – 3: Appreciable improvement regarding placebo.

AS rank between 3 – 4: Great improvement regarding placebo.

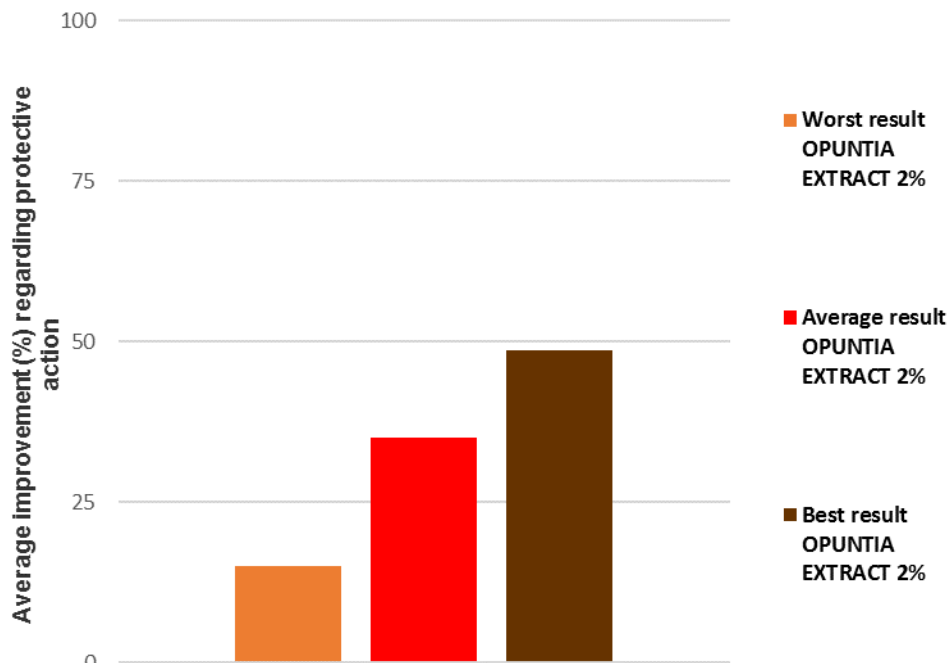
AS rank between 4 – 5: Excellent cosmetic result.



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OPUNTIA EXTRACT 2%



Results:

Worst result OPUNTIA EXTRACT 2%: 15%.
Average result OPUNTIA EXTRACT 2%: 35%.
Best result OPUNTIA EXTRACT 2%: 48,5%.

Results meaning:

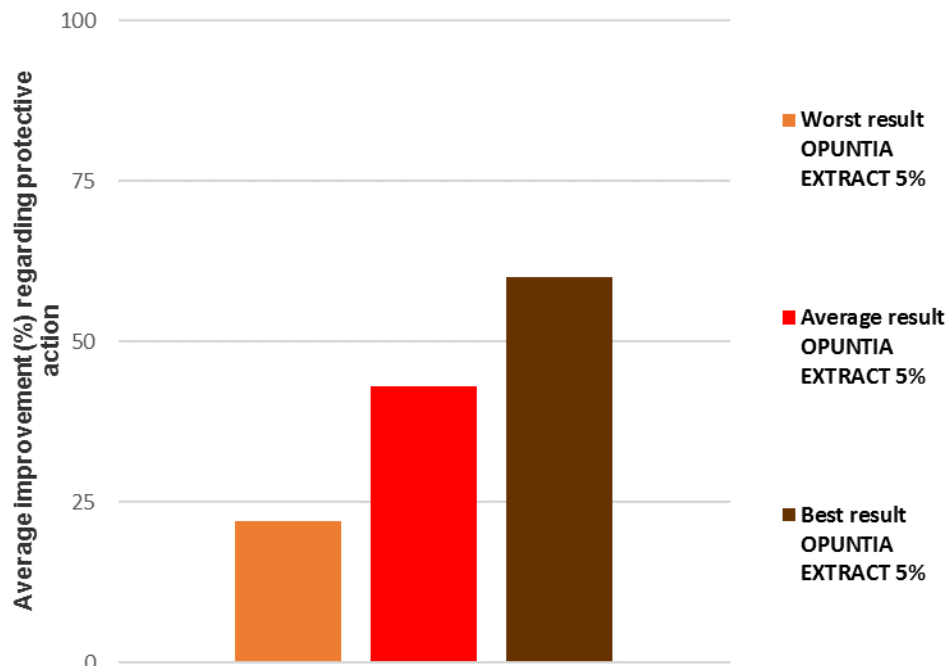
AI rank between < 20%: No significant changes.
AI rank between 21 – 40%: Slight improvement regarding placebo.
AI rank between 41 – 60%: Appreciable improvement regarding placebo.
AI rank between 61 – 80%: Great improvement regarding placebo.
AI rank between > 81%: Excellent cosmetic result.



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OPUNTIA EXTRACT 5%



Results:

Worst result OPUNTIA EXTRACT 5%: 22%.

Average result OPUNTIA EXTRACT 5%: 43%.

Best result OPUNTIA EXTRACT 5%: 60%.

Results meaning:

AI rank between < 20%: No significant changes.

AI rank between 21 – 40%: Slight improvement regarding placebo.

AI rank between 41 – 60%: Appreciable improvement regarding placebo.

AI rank between 61 – 80%: Great improvement regarding placebo.

AI rank between > 81%: Excellent cosmetic result.