



BIOGRÜNDL, S.L.
POLÍGONO LES FALLULLES, NAVE 34 -SECTOR 2-
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TECHNICAL DATA SHEET

QUINOA EXTRACT / A / HGL / CA11 /



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

Product Code: ECHIAHGLC11.

INCI Name: AQUA, GLYCERIN, CHENOPODIUM QUINOA SEED EXTRACT, POTASSIUM SORBATE.

INCI Status: Conforms.

REACH Status: Low Volume Exemption.

CAS Number: 7732-18-5; 56-81-5; 223749-71-1; 24634-61-5 / 590-00-1.

EC Number: 231-791-2; 200-289-5; 607-039-8; 246-376-1.

Origin: GLYCERIN: Vegetable origin.

CHENOPODIUM QUINOA SEED 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: Protective skin treatments. Against unfavorable environmental conditions preparations. Moisturizing, conditioners and anti-aging products.

Properties: Nutritive, restorative, anti-inflammatory, lenitive, calming and conditioner.

Industrial packing: 1Kg., 5Kg., 25Kg., 225Kg.

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

Quinoa (*Chenopodium quinoa willd*) is a herbaceous plant belonging to the quenoaceae family, native to the Andes and cultivated in Bolivia, Chile, Peru, Ecuador and, even, Argentina. It is erect, slightly branched and polyhedral stem; simple, alternate leaves with various colours; terminal flowers with five yellow petals, in clusters; resinous seeds contain proteins of high biological quality, because of its content in essential amino acids.

QUINOA EXTRACT by BIOGRÜNDL, S.L. is obtained by treating crushed seeds with a mixture of water and glycerin which draws the following active ingredients:

- Proteins rich in lysine, arginine, histidine, methionine and cystine.
- Minerals, especially iron, calcium and phosphorus.
- Vitamins B and E.
- Lipids rich in unsaturated fatty acids.
- Carbohydrates, mainly starch.

USE AND DOSAGE

The incorporation of quinoa extract in cosmetics is justified by its nutritive, restorative, anti-inflammatory, lenitive, calming and conditioner properties.

Since immemorial time, quinoa has been used by the natives of the Andean Highlands in protective skin treatments, against unfavorable environmental conditions prevailing in those territories. Currently, Cosmetic Science is finding on quinoa a host of beneficial qualities for the skin tissue, applied in protective from environment products (sun, heat, cold, dryness), as well as, in moisturizers, conditioners and anti-aging preparations.

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% QUINOA 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, CHENOPODIUM QUINOA SEED EXTRACT, POTASSIUM SORBATE.

EFFECTIVENESS TESTS

Assay: Double blind spot trial and subsequent cosmetic evaluation.

Assayed parameters: Anti-inflammatory action. Calming action.

N (volunteers): 30 (20 ♀ and 10 ♂).

Age (volunteers): 19 – 75 years old.

Left side part to be treated:

Placebo, 30 volunteers, suitable cosmetic base.

Right side part to be treated:

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

Right side part to be treated:

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



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Assayed parameters:

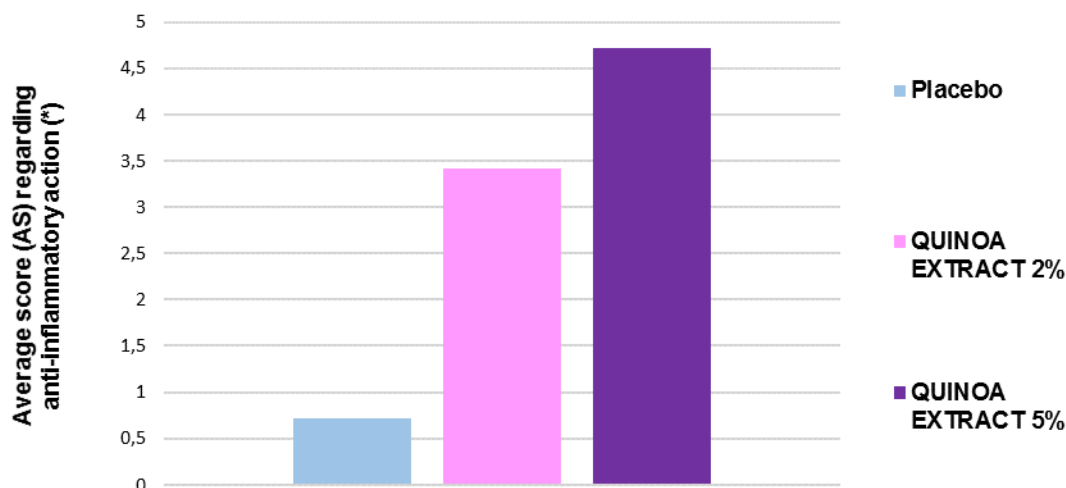
	Assay	N (volunteers)	Age (volunteers)	Placebo	QUINOA EXTRACT 2%	QUINOA EXTRACT 5%	Assay performed (Days)	Results measured (Days)
Anti-inflammatory action	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 20 ♀ and 10 ♂	19 – 75	Left side part	Right side part 15 volunteers.	Right side part. 15 volunteers.	D = 30	D' = 1
Calming action	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 20 ♀ and 10 ♂	19 – 75	Left side part	Right side part 15 volunteers.	Right side part. 15 volunteers.	D = 30	D' = 30



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SKIN CONDITION EVALUATION AFTER 30 DAYS



(*) Anti-inflammatory action was determined by direct measurement and observation of inflammation reduction from volunteers.

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% QUINOA EXTRACT by BIOGRÜNDL, S.L., 5% QUINOA 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.

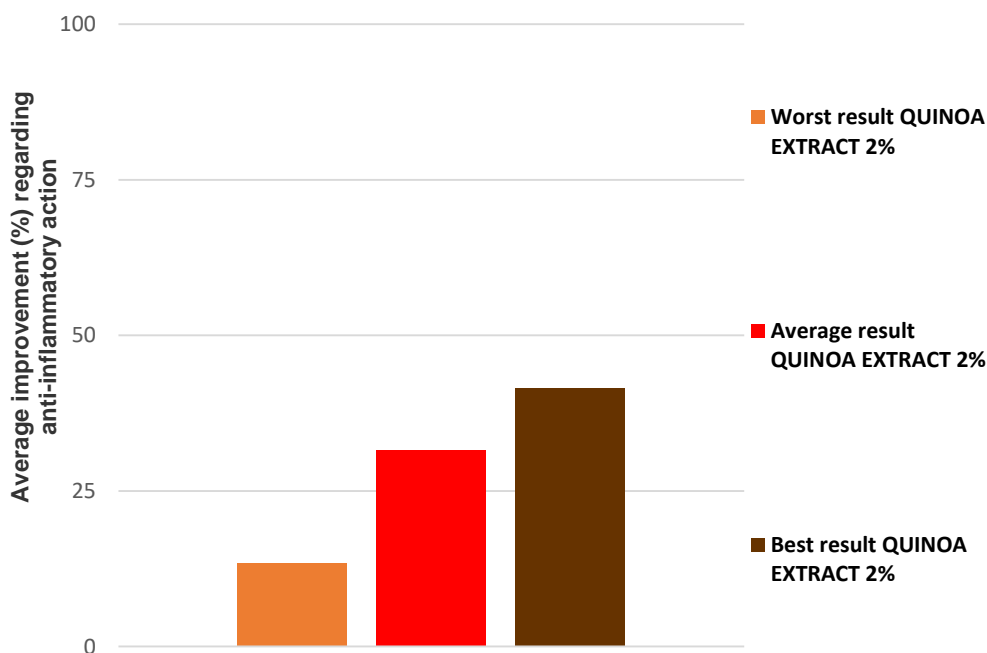
AS rank between 4 – 5: Excellent cosmetic result.



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QUINOA EXTRACT 2%



Results:

Worst result QUINOA EXTRACT 2%: 13,5%.

Average result QUINOA EXTRACT 2%: 31,5%.

Best result QUINOA EXTRACT 2%: 41,5%.

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.

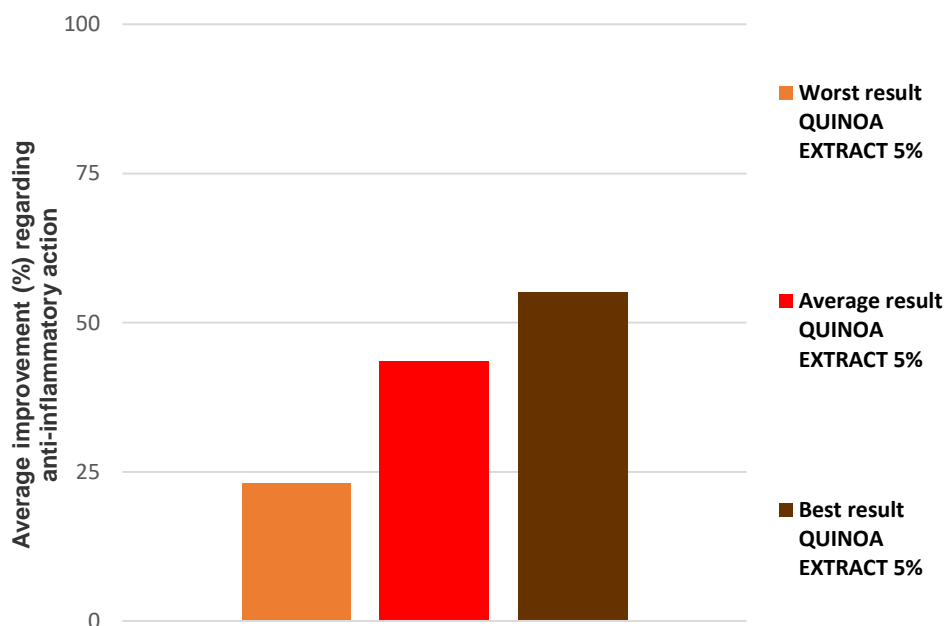
AI rank between > 81%: Excellent cosmetic result.



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QUINOA EXTRACT 5%



Results:

Worst result QUINOA EXTRACT 5%: **23%**.
Average result QUINOA EXTRACT 5%: **43,5%**.
Best result QUINOA EXTRACT 5%: **55%**.

Results meaning:

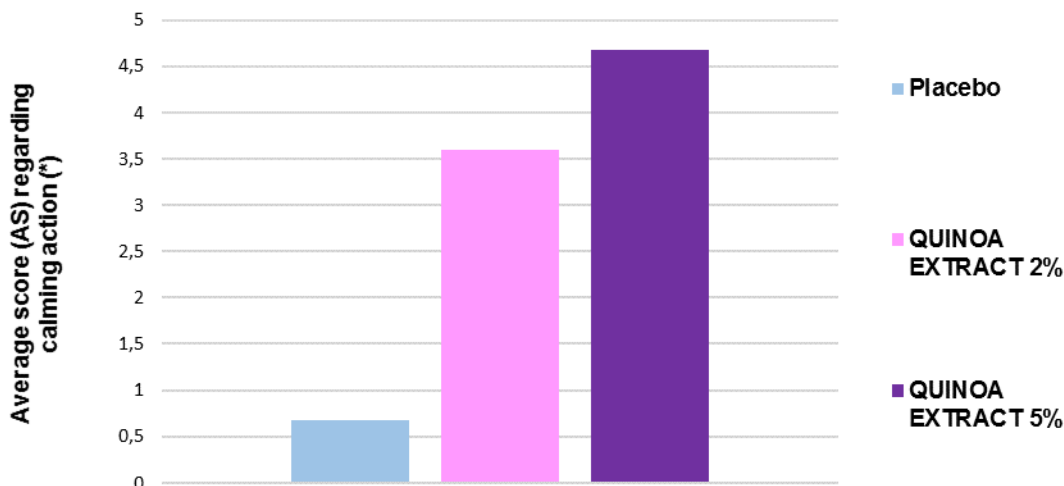
AI rank between < 20%: No significant changes.
AI rank between 21 – 40%: Slight improvement regarding placebo.
AI rank between 41 – 60%: Appreciable improvement regarding placebo.
AI rank between 61 – 80%: Great improvement regarding placebo.
AI rank between > 81%: Excellent cosmetic result.



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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% QUINOA EXTRACT by BIOGRÜNDL, S.L., 5% QUINOA 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.

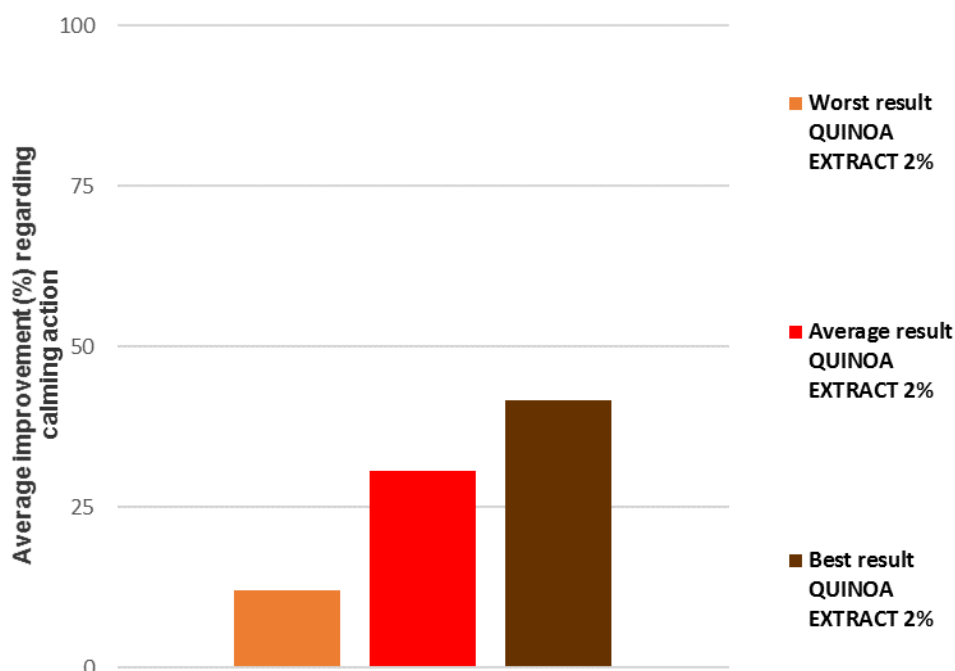
AS rank between 4 – 5: Excellent cosmetic result.



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QUINOA EXTRACT 2%



Results:

Worst result QUINOA EXTRACT 2%: 12%.
Average result QUINOA EXTRACT 2%: 30,5%.
Best result QUINOA EXTRACT 2%: 41,5%.

Results meaning:

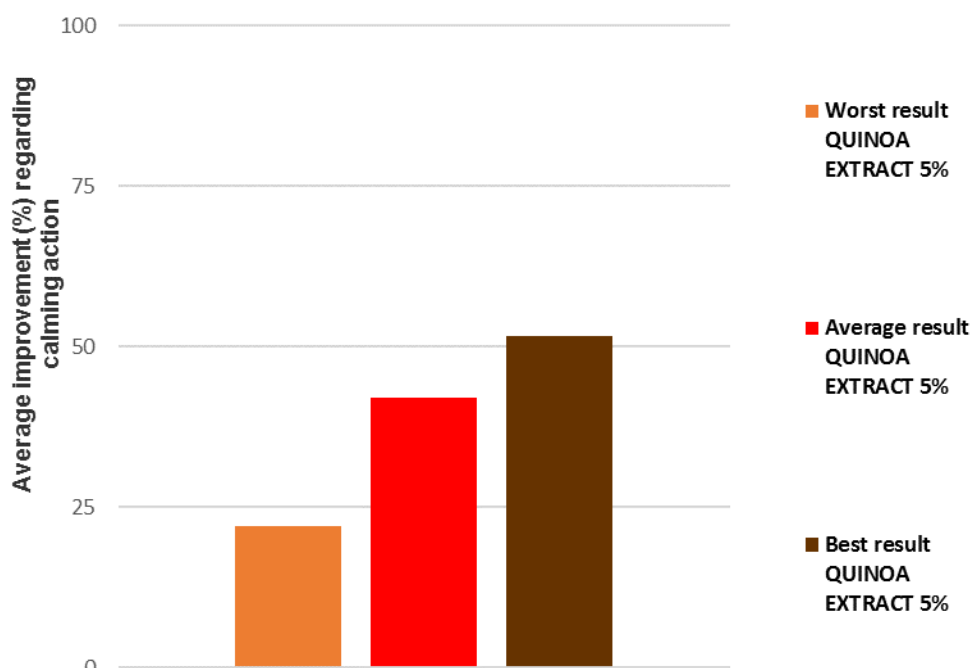
AI rank between < 20%: No significant changes.
AI rank between 21 – 40%: Slight improvement regarding placebo.
AI rank between 41 – 60%: Appreciable improvement regarding placebo.
AI rank between 61 – 80%: Great improvement regarding placebo.
AI rank between > 81%: Excellent cosmetic result.



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QUINOA EXTRACT 5%



Results:

Worst result QUINOA EXTRACT 5%: **22%**.
Average result QUINOA EXTRACT 5%: **42%**.
Best result QUINOA EXTRACT 5%: **51,5%**.

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.