



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

HORSE CHESTNUT EXTRACT / A / HGL / CA11 /



Trade Name: HORSE CHESTNUT EXTRACT / A / HGL / CA11 /

Product Code: ECIAHGLCA11.

INCI Name: AQUA, GLYCERIN, AESCULUS HIPPOCASTANUM EXTRACT, POTASSIUM SORBATE.

INCI Status: Conforms.

REACH Status: Low Volume Exemption.

CAS Number: 7732-18-5; 56-81-5; 8053-39-2; 24634-61-5 / 590-00-1.

EC Number: 231-791-2; 200-289-5; 232-497-7; 246-376-1.

Origin: **GLYCERIN:** Vegetable origin.

AESCULUS HIPPOCASTANUM 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: Skin treatments.

Properties: Vasoprotective, anti-inflammatory, astringent and decongestant.

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

Horse chestnut (*Aesculus hippocastanum* L.) is a tree belonging to the families saponaceae and hippocastanaceae, with large gray-green leaves, white or light pink flowers and fruit, chestnut, wrapped in a brown cover.

The extract is obtained from fruit, treating it with a mixture of water and glycerin.

As active materials includes the following:

- Triterpene saponins (escin).
- Flavonoids (quercitin, kaempferol).
- Coumarins (esculin, esculetin, fraside).
- Catechic tannins.
- Anthocyanes.
- Starches.
- Carbohydrates.
- Aminoacids.
- Vitamins (B, C, D, K).
- Fatty oil.

USE AND DOSAGE

The application of horse chestnut extract in cosmetics is justified by its vasoprotective, anti-inflammatory, astringent and decongestant properties.

Commonly used in the therapy of vascular dysfunction, being very active in edematous skin. It has vasoconstrictor, antiperspirant, anti-inflammatory, soothing and anti-cellulite properties. Also noteworthy, its antiredness and lightening on the skin actions.

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% HORSE CHESTNUT 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, AESCULUS HIPPOCASTANUM EXTRACT, POTASSIUM SORBATE.

EFFECTIVENESS TESTS

Assay: Double blind spot trial and subsequent cosmetic evaluation.

Assayed parameters: Anti-cellulite action. Antiperspirant action.

N (volunteers): 30 (16 ♀ and 14 ♂).

Age (volunteers): 21 – 79 years old.

Left side part to be treated:

Placebo, 30 volunteers, suitable cosmetic base.

Right side part to be treated:

HORSE CHESNUT EXTRACT 2%, 15 volunteers, suitable cosmetic base.

Right side part to be treated:

HORSE CHESNUT EXTRACT 5%, 15 volunteers, suitable cosmetic base.



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Assayed parameters:

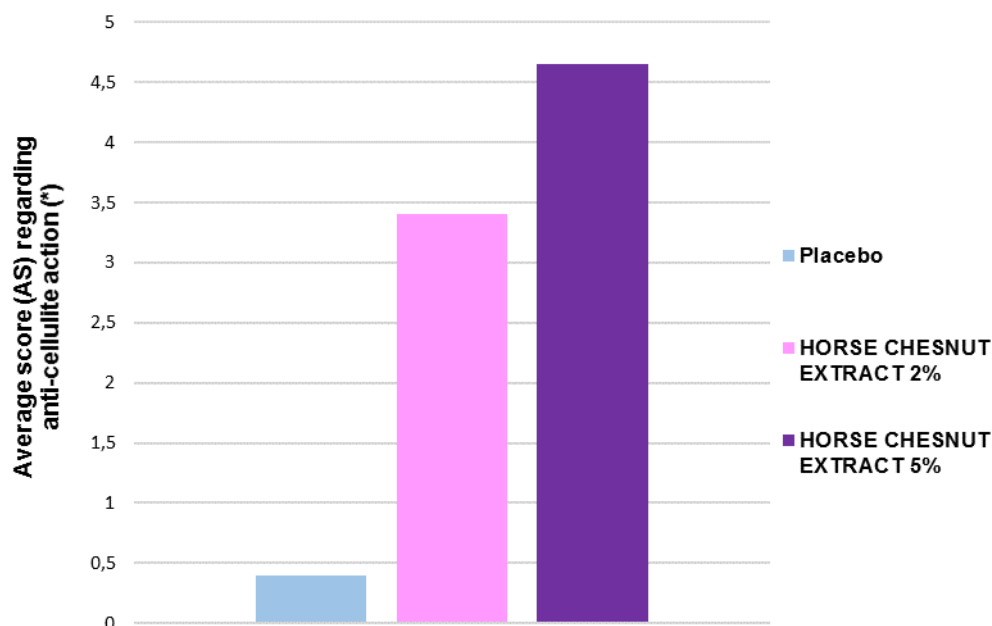
	Assay	N (volunteers)	Age (volunteers)	Placebo	HORSE CHESNUT EXTRACT 2%	HORSE CHESNUT EXTRACT 5%	Assay performed (Days)	Results measured (Days)
Anti-cellulite action	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 16 ♀ 14 ♂	25 – 49	Left side part	Right side part 15 volunteers.	Right side part. 15 volunteers.	D = 15	D' = 1
Antiperspirant action	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 16 ♀ 14 ♂	21 – 79	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-cellulite action was determined by direct observation and measurement of nodules, orange peel appearance and swelling decrease of treated parts from volunteers (legs).

Total number of days in which the assay was performed (treatment was applied):
D = 15 days (every other 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% HORSE CHESNUT EXTRACT by BIOGRÜNDL, S.L., 5% HORSE CHESNUT 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.

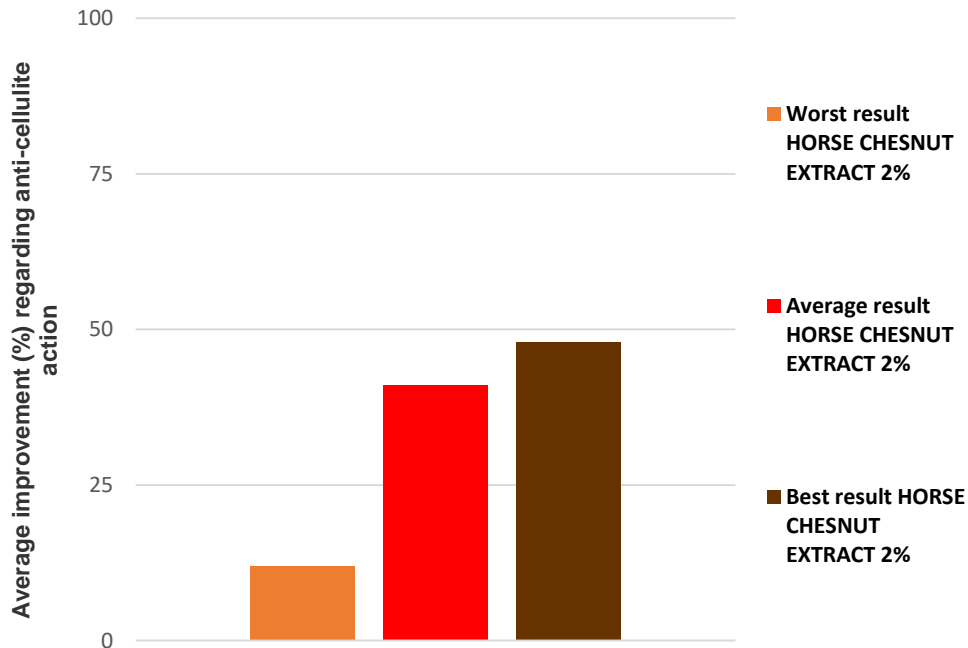
AS rank between 4 – 5: Excellent cosmetic result.



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HORSE CHESNUT EXTRACT 2%



Results:

Worst result HORSE CHESNUT EXTRACT 2%: 12%.
Average result HORSE CHESNUT EXTRACT 2%: 41%.
Best result HORSE CHESNUT EXTRACT 2%: 48%.

Results meaning:

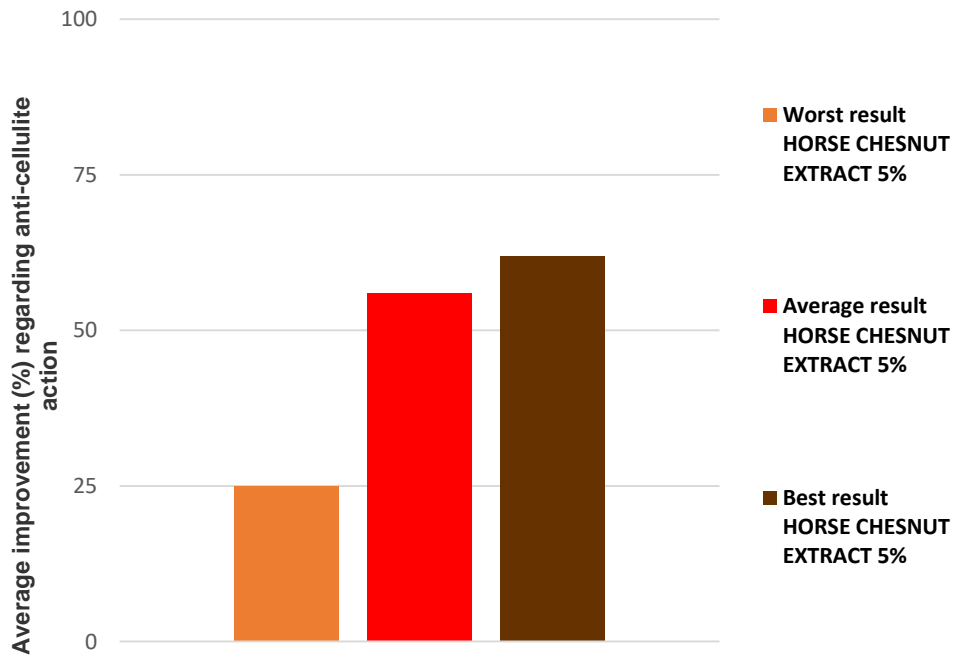
AI rank between < 20%: No significant changes.
AI rank between 21 – 40%: Slight improvement regarding placebo.
AI rank between 41 – 60%: Appreciable improvement regarding placebo.
AI rank between 61 – 80%: Great improvement regarding placebo.
AI rank between > 81%: Excellent cosmetic result.



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HORSE CHESNUT EXTRACT 5%



Results:

Worst result HORSE CHESNUT EXTRACT 5%: **25%**.
Average result HORSE CHESNUT EXTRACT 5%: **56%**.
Best result HORSE CHESNUT EXTRACT 5%: **62%**.

Results meaning:

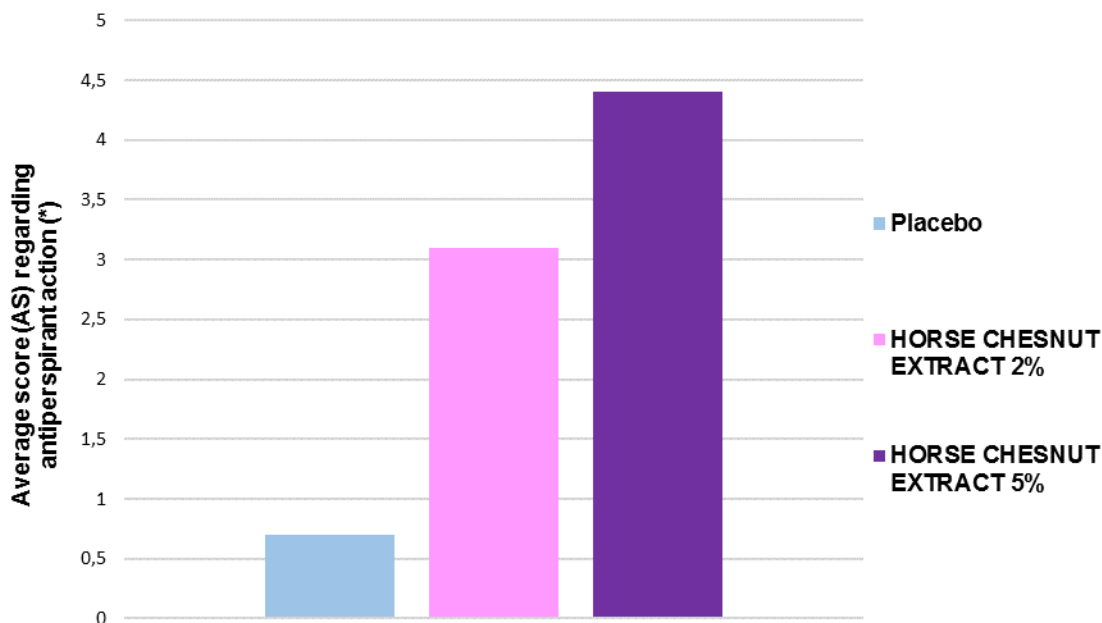
AI rank between < 20%: No significant changes.
AI rank between 21 – 40%: Slight improvement regarding placebo.
AI rank between 41 – 60%: Appreciable improvement regarding placebo.
AI rank between 61 – 80%: Great improvement regarding placebo.
AI rank between > 81%: Excellent cosmetic result.



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SKIN TRANSPARATION EVALUATION AFTER 30 DAYS



(*) Antiperspirant action was measured by weight difference regarding the amount of sweating, collected in absorbent material, 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' = 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% HORSE CHESNUT EXTRACT by BIOGRÜNDL, S.L., 5% HORSE CHESNUT 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.

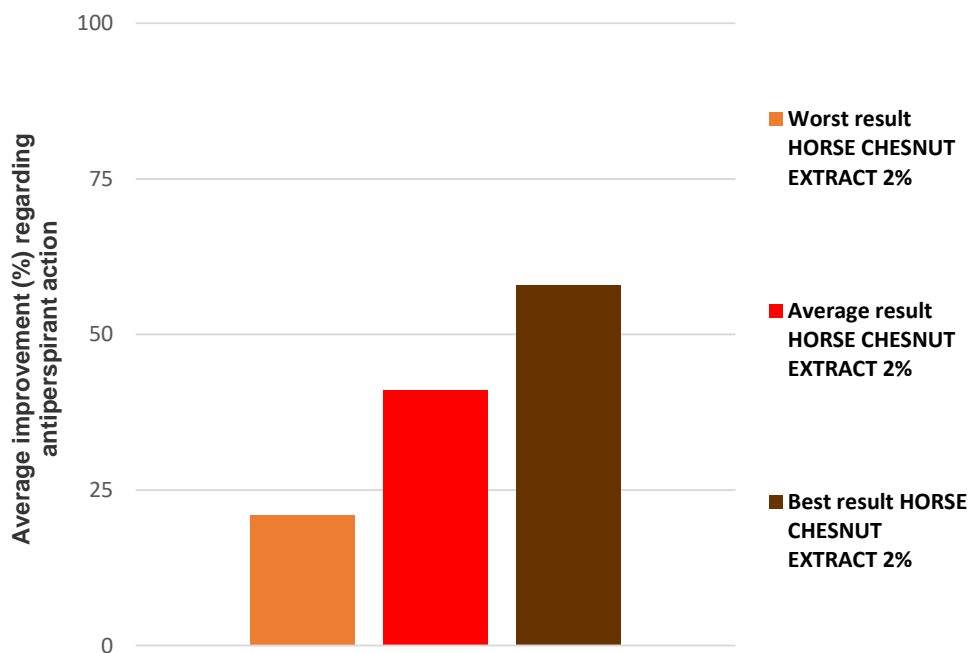
AS rank between 4 – 5: Excellent cosmetic result.



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HORSE CHESNUT EXTRACT 2%



Results:

Worst result HORSE CHESNUT EXTRACT 2%: **21%**.
Average result HORSE CHESNUT EXTRACT 2%: **41%**.
Best result HORSE CHESNUT EXTRACT 2%: **58%**.

Results meaning:

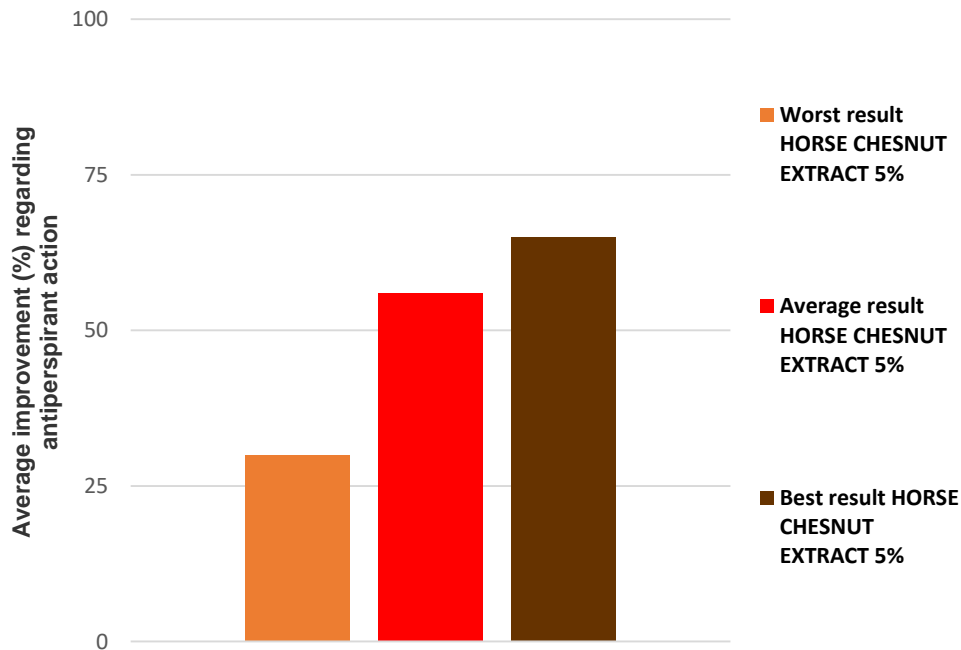
AI rank between < 20%: No significant changes.
AI rank between 21 – 40%: Slight improvement regarding placebo.
AI rank between 41 – 60%: Appreciable improvement regarding placebo.
AI rank between 61 – 80%: Great improvement regarding placebo.
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HORSE CHESNUT EXTRACT 5%



Results:

Worst result HORSE CHESNUT EXTRACT 5%: **30%**.
Average result HORSE CHESNUT EXTRACT 5%: **56%**.
Best result HORSE CHESNUT EXTRACT 5%: **65%**.

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.