



BIOGRÜNDL, S.L.  
POLÍGONO LES FALLULLES, NAVE 34 -SECTOR 2-  
08620 SANT VICENÇ DELS HORTS, BARCELONA (SPAIN)  
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## TECHNICAL DATA SHEET

### KALE EXTRACT / A / HGL / CA11 /



**Trade Name:** KALE EXTRACT / A / HGL / CA11 /.

**Product Code:** EKALAHGLC11.

**INCI Name:** AQUA, GLYCERIN, BRASSICA OLERACEA EXTRACT, POTASSIUM SORBATE.

**INCI Status:** Conforms.

**REACH Status:** Low Volume Exemption.

**CAS Number:** 7732-18-5; 56-81-5; Not available; 24634-61-5 / 590-00-1.

**EC Number:** 231-791-2; 200-289-5; Not available; 246-376-1.

**Origin:** **GLYCERIN:** Vegetable origin.

**BRASSICA OLERACEA 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/cm<sup>3</sup> (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:** Healing and vitalizing activity products.

**Properties:** Healing, soothing and depurative.

**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**

Curly cabbage (*Brassica oleracea* L. *Sabellica* var.) is a type of cabbage which grows in all temperate regions of the world, belongs to the Cruciferae family. It is a biannual plant glaucous green colour, with hardened stem and large leaves; flowers in bouquet and yellowish; its fruits are long and the seeds are brown.

To obtain KALE EXTRACT, BIOGRÜNDL, S.L. starts from the crushed leaves, treating them with a mixture of water and glycerin, the obtained extract contains the following active ingredients:

- Vitamins, especially C, beta-carotene or provitamin A and the so-called U or methionine methyl sulfonium bromide.
- Organic sulfur and phosphoric acid.
- Minerals, especially iodine, iron and calcium.

### **USE AND DOSAGE**

The incorporation of kale extract in Cosmetics is justified by its healing, soothing, antibacterial, antiviral and depurative properties.

KALE EXTRACT by BIOGRÜNDL, S.L. is very useful for the treatment of sores and wounds. Its healing activity is also important.

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/cm<sup>3</sup> (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% KALE 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, BRASSICA OLERACEA EXTRACT, POTASSIUM SORBATE.

### **EFFECTIVENESS TESTS**

**Assay:** Double blind spot trial and subsequent cosmetic evaluation.

**Assayed parameters:** Healing action.

**N (volunteers):** 30 (15 ♀ and 15 ♂).

**Age (volunteers):** 18 - 35 years old.

**Left side part to be treated:**

Placebo, 30 volunteers, suitable cosmetic base.

**Right side part to be treated:**

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

**Right side part to be treated:**

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



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### Assayed parameters:

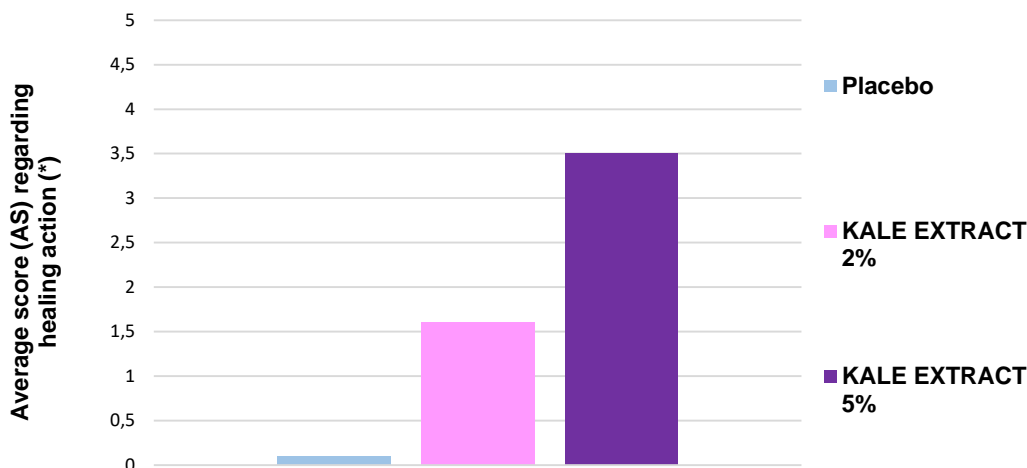
	Assay	N (volunteers)	Age (volunteers)	Placebo	KALE EXTRACT 2%	KALE EXTRACT 5%	Assay performed (Days)	Results measured (Days)
<b>Healing action</b>	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 15 ♀ 15 ♂	18 - 35	Left side part	Right side part 15 volunteers.	Right side part. 15 volunteers.	D = 30	D' = 1



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### SKIN CONDITION EVALUATION AFTER 30 DAYS



(\*) Healing action was evaluated by measurement and direct observation of marks evolution caused by early acne in volunteers face.

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

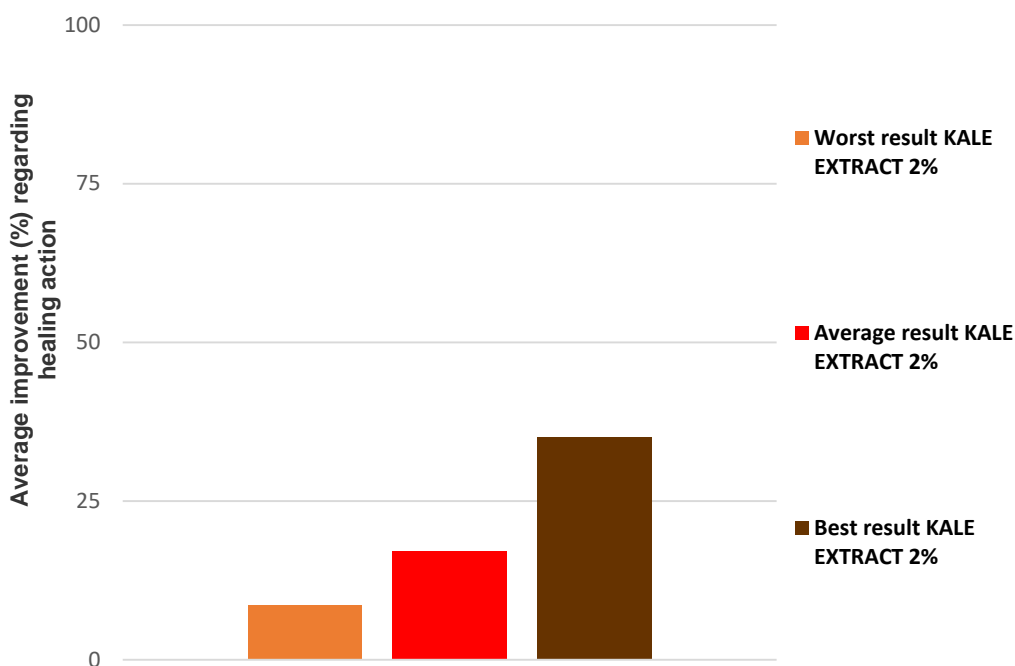
AS rank between 4 – 5: Excellent cosmetic result.



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### KALE EXTRACT 2%



#### Results:

Worst result KALE EXTRACT 2%: **8,5%**.

Average result KALE EXTRACT 2%: **17%**.

Best result KALE EXTRACT 2%: **35%**.

#### 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.

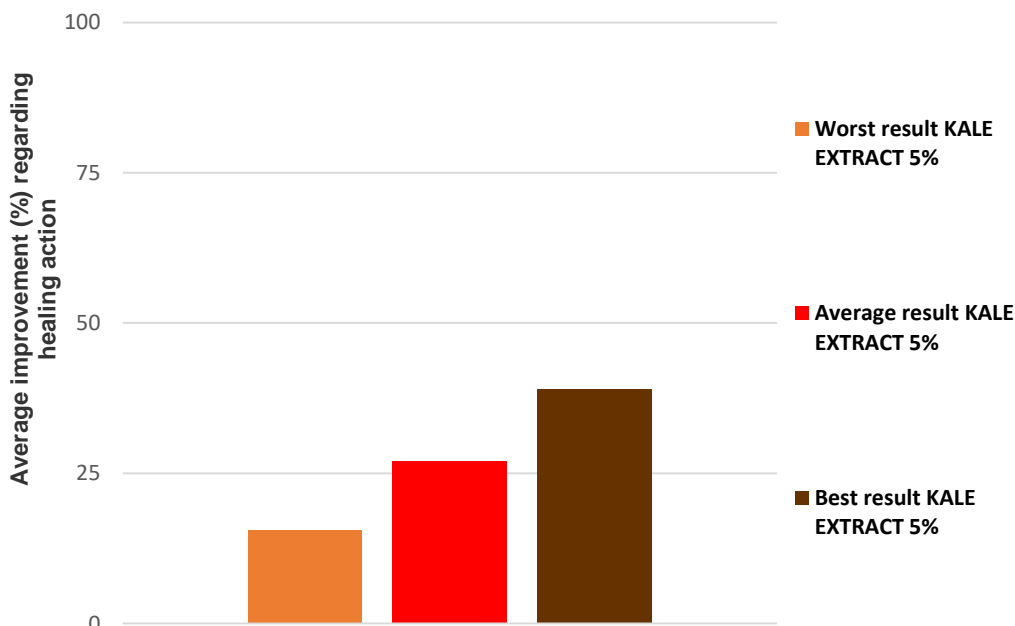
AI rank between > 81%: Excellent cosmetic result.



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### KALE EXTRACT 5%



#### Results:

Worst result KALE EXTRACT 5%: 15,5%.

Average result KALE EXTRACT 5%: 27%.

Best result KALE EXTRACT 5%: 39%.

#### 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.