



BIOGRÜNDL, S.L.  
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## TECHNICAL DATA SHEET

### **VIB-ACTIV** **Snake Venom Actives** **Adapted to Cosmetic Use** **/ A / HGLA / CA11 /**



**Trade Name:** VIB-ACTIV / A / HGLA / CA11 /.

**Product Code:** VIBAHGLAC11.

**INCI Name:** AQUA, GLYCERIN, SODIUM PCA, ISOPROPYL ALCOHOL, GLYCINE SOJA GERM EXTRACT, HYDROLYZED SERUM PROTEIN, AMINOBUTYRIC ACID, PEG-40 HYDROGENATED CASTOR OIL, POTASSIUM SORBATE, TOCOPHERYL ACETATE, RETINYL PALMITATE, ASCORBYL PALMITATE, CALCIUM SULFATE, MAGNESIUM SULFATE, COPPER SULFATE, POTASSIUM SULFATE, ZINC SULFATE, MANGANESE SULFATE, FERRIC SULFATE.

**INCI Status:** Conforms.

**REACH Status:** Low Volume Exemption.

**CAS Number:** 7732-18-5; 56-81-5; 28874-51-3; 67-63-0; 84776-91-0; 84082-72-4; 56-12-2; 61788-85-0; 24634-61-5 / 590-00-1; 7695-91-2 / 58-95-7; 79-81-2; 137-66-6; 7778-18-9; 7487-88-9; 7758-98-7; 7778-80-5; 7446-19-7 / 7733-02-0 / 7746-20-0; 7785-87-7 / 10124-55-7; 10028-22-5.

**EC Number:** 231-791-2; 200-289-5; 249-277-1; 200-661-7; 921-078-0; 282-018-0; 200-258-6; Not available; 246-376-1; 231-710-0 / 200-405-4; 201-228-5; 205-305-4; 231-900-3; 231-298-2; 231-847-6; 231-915-5; 231-793-3; 232-089-9 / 233-342-6; 233-072-9.

**Origin: GLYCERIN:** Vegetable origin.

**SODIUM PCA:** Vegetable – mineral origin.

**ISOPROPYL ALCOHOL:** Synthetic origin.

**GLYCINE SOJA GERM EXTRACT:** Vegetable origin.

**HYDROLYZED SERUM PROTEIN:** Mineral origin.

**AMINOBUTYRIC ACID:** Fermentation.

**PEG-40 HYDROGENATED CASTOR OIL:** Synthetic origin– Vegetable.

**POTASSIUM SORBATE, TOCOPHERYL ACETATE, RETINYL PALMITATE, ASCORBYL PALMITATE, COPPER SULFATE, POTASSIUM SULFATE, ZINC SULFATE, MANGANESE SULFATE, FERRIC SULFATE:** Synthetic origin.

**CALCIUM SULFATE:** Mineral origin.

**MAGNESIUM SULFATE:** Inorganic 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, glycerin and isopropyl alcohol.

**Appearance:** Clear or slightly opalescent liquid.

**Colour:** Characteristic (yellowish to deep brown).

**Odour:** Characteristic.

**Specific gravity:** 1,000 - 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:** Regenerative, anti-wrinkle, anti-inflammatory, protective, anti-oxidant and moisturizing products..

**Properties:** Regenerative, anti-wrinkle, anti-inflammatory, protective, anti-oxidant and moisturizing..

**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

Viper is a reptile of Vipera, genus belonging to the Viperid family. It has a gland that produces a poisonous liquid that inject to victims through two teeth.

In addition to swelling, as well as nausea and vomiting it causes, the true toxic effect acts on nervous-muscular joints, blocking the transmission of nerve impulses; this means a weakening of members, in general, and of intercostal muscles of diaphragm, in particular, that may cause death by paralysis and asphyxia.

The components of snake venom are, essentially, the following three:

- ENZYMES, that facilitate local and systemic dissemination of toxic components of venom, by biochemical degradation of cutaneous and subcutaneous tissues.

In Table 1. are listed said enzymes, as well as, their effects.

ENZYME	EFFECT
L-Amino-acid nuclease	Amino-acid → Alpha-ceto acid
Phospho-monostearase and phospho-diestearase	Ribonucleic acid → Mononucleotid
5'-Nucleotidase	Nucleotid → Orthophosphoric acid
Pyrophosphatase	ATP → AMP
Acetyl-cholinsteearase	Acetylcholine → Choline + acetic acid
Phospholipase A	Lecithin → Lisolecthin
Hyaluronidase	Hyaluronic acid depolimerization
Proteases	Protein descomposition

Table 1. ENZYMES IN SNAKE VENOM AND THEIR EFFECTS

- PROTEINS, are neurotoxins and cardiotoxins. Chemically, they are polypeptides containing between 60 and 74 amino acids. Figure 1. shows the sequence of one of them and the disulfide bridges in between each two molecules of cysteine, that makes more stable the poison, which acts by blocking the synapse between nerve and muscle, by preventing the release of acetylcholine.

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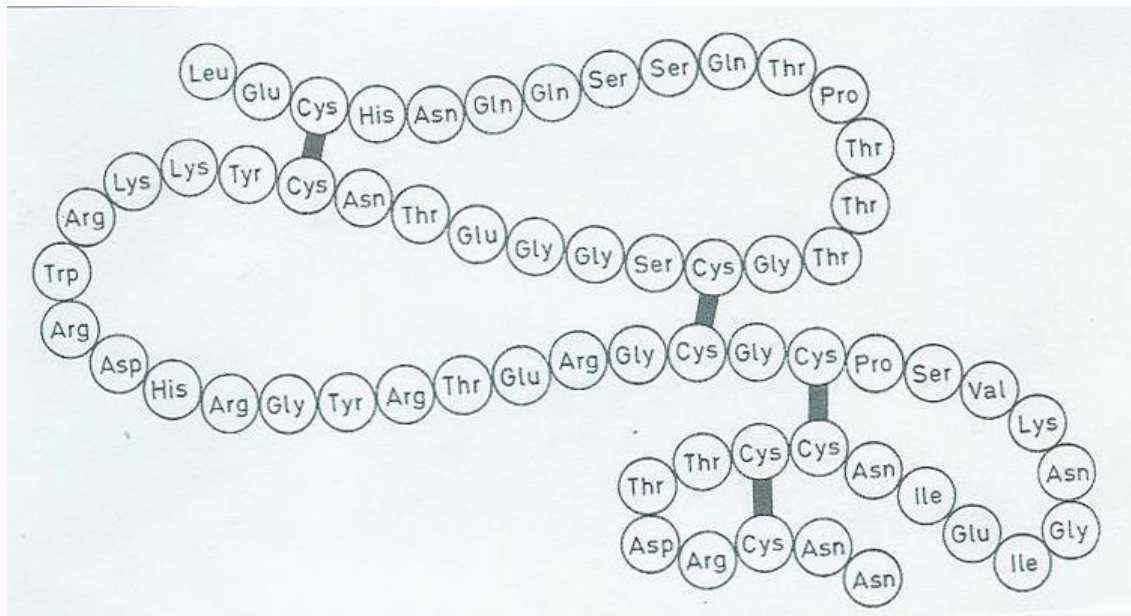


Figure 1. AMINO ACID SEQUENCE IN SNAKE VENOM PROTEIN

- INORGANIC COMPOUNDS, consisting on trace elements, particularly zinc, having a functional significance in the activity of enzymes

### SNAKE VENOM COSMETIC ADAPTATION

In order to obtain a preparation that resembles in its composition to snake venom, free from toxicity and with positive actions on skin tissue, BIOGRÜNDL, S.L. has investigated VIB-ACTIV, consisting on the following active ingredients:

- OLIGOPEPTIDES, mixture of tri-, quadri- and pentapeptides containing every amino acid from snake venom. Their structural formulae are as shown in Figure 2., where n equals 1 for the tripeptide, 2 for the quadriptide and 3 for the pentapeptide.

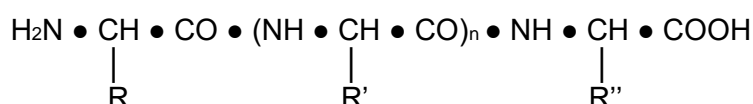


Figure 2. PEPTIDES STRUCTURAL FORMULE IN VIB-ACTIV BY BIOGRÜNDL. S.L.



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The action of these oligopeptides simulates the activity of the poison proteic part, by inhibiting the release of acetylcholine, causing a relaxation in muscle, which is boosted in VIB-ACTIV by BIOGRÜNDL, S.L. by another component, GABA, which is not included in sanke venom.

- GABA, Gamma-aminobutyric acid, it does not act on the surface of wrinkles and expression lines, unlike the conventional anti-wrinkle product does, but relaxing the underlying muscles that cause wrinkle formation, since it reduces release of acetylcholine, necessary substance for the nervous impulse transmission and the resulting muscle contraction.

It relaxes facial muscles through a gradual reduction of neurotransmitters that initiate muscle contraction. This active substance has been shown to be particularly effective in those parts of the face subjected to frequent twists and stretches, such as orbicular and perilabial áreas, what is very important in addition, without loss of normal and natural expression.

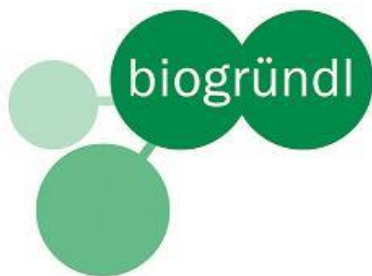
- ANTIPROTEASES, in the skin there are enzymes known as proteases (collagenases and elastases) that cause biochemical degradation of collagen and elastin. They are necessary, because they renew the protein structure, they are, however, allowing to eliminate those already damaged parts controlled by antiproteases (anticollagenases and antielastases) that limit their activity to what is strictly necessary.

The degradation of the dermal network and the appearance of wrinkles is a direct consequence of the loss of balance between the activity of proteases and antiproteases, for the benefit of the first. On the other hand, it has shown that in the skin subjected to influences from environment (sun, heat, dryness, pollution, etc.), there is a considerable increase of proteases, provoking negative changes in it. The same occurs in inflamed, damaged or infected skin.

These antiproteases are obtained from germinated soybean seeds, since there is high content in them.

- TRACE ELEMENTS, trace elements represent an essential part of enzymes, as a cofactor, whose simple presence, without moving the equilibrium point, without modify the final result of a biochemical reaction, dramatically increases its speed, decreasing, at the same time, substantially, the energy short.

Within the hundred of elements that compose the universe, only ten of them constitute 99,7% of the human body. These are O, C, H, N, Ca, P, K, S, Na, and Cl. The remaining 0,3% consists of around twenty minority components; trace elements, which include, as more important, the following: Ca, Mg, Cu, K, Zn, Mn and Fe.



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- A+C+E VITAMIN COMPLEX, the three vitamins most used for skin treatments are **A**, **C** and **E**. These three vitamins, as a general rule, are not used together, so do not take advantage of synergistic qualities, nor the mutual ability of protection against oxidation.

Vitamin **A** acts as a powerful antioxidant and free radical scavenger. It has pharmacodynamic effect, in the sense of keeping in good condition the skin and encourage its correct metabolism. Also, it acts on normal skin keratinization.

Vitamin **C** has, also, great reducing and neutralizing of free radicals properties, it has an important role on the formation of collagen fibers of connective tissue.

Vitamin **E** is another antioxidant that protects, specially, cell membranes against oxidant negative effect of free radicals. Its action strengthens the connective tissue, favouring vascularization and skin regeneration. In addition, prevents the formation of wrinkles and senile spots.

- SODIUM PCA, sodium salt of pyrrolidonecarboxylic acid, main component of skin natural moisturizing factor. It shows an extraordinary moisturizing power.

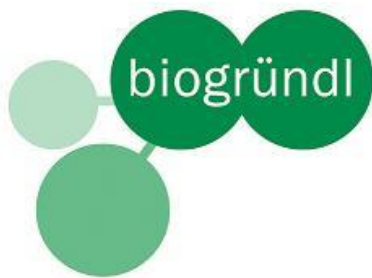
### USE AND DOSAGE

The incorporation in cosmetics of VIB-ACTIV by BIOGRÜNDL, S.L. is justified by its regenerative, anti-wrinkle, anti-inflammatory, protective, anti-oxidant and moisturizing properties.

VIB-ACTIV by BIOGRÜNDL is a substitute of snake venom, completely harmless and effectiveness tested in skin tissue regeneration. It makes it in a natural way and with verifiable effects, from first applications, without suffering injectables or undergo surgery. It causes a fast and lasting tightening effect, with disappearance or attenuation of wrinkles and expression lines.

Its action can be summarized up as follows:

- Oligopeptides implement defense mechanisms and initiate a process of regeneration and decontraction of skin tissue.
- Gaba acts on wrinkles and fine expression lines, by relaxing the contraction of facial muscles, through a gradual reduction of neurotransmitters that cause such contraction.
- Antiproteases restore the balance with proteases, limiting the activity of these to what is strictly necessary.
- Trace elements, obtained by means of green clay percolation and combined with proteins, in order to achieve a deeper and faster absorption. Trace elements affect to the general metabolism of the skin and have anti-inflammatory and protective effect, to increase the immune response. Although



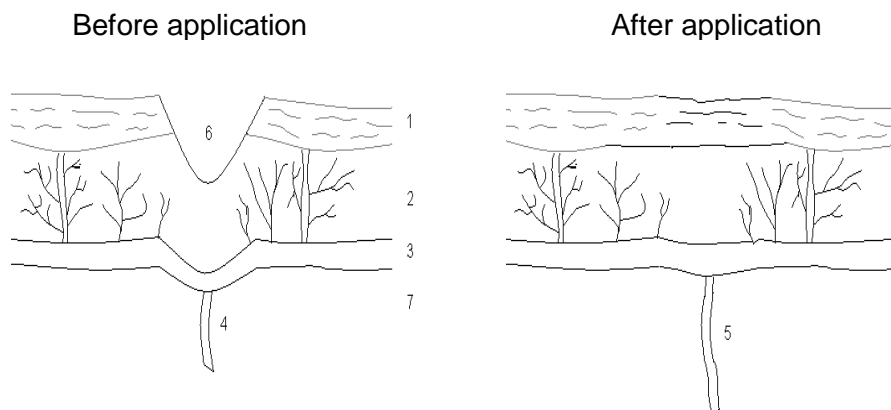
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in the percolated process many more elements are obtained, which are in greater quantity are: calcium, magnesium, copper, potassium, zinc, manganese and iron.

- A + C + E vitamin complex and Bioflavonoids, which has very high protection against oxidation.
- Sodium pca, which has an extraordinary moisturizing power.

Schematically, the action mode of VIB-ACTIV by BIOGRÜNDL, S.L. is indicated in Figure 3.



- 1: Epidermis
- 2: Dermis
- 3: Hypodermis
- 4: Contracted muscle
- 5: Relaxed muscle
- 6: Wrinkle
- 7: Muscle tissue

Figure 3. ACTION MODE OF VIB-ACTIV BY BIOGRÜNDL, S.L.

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:** 1,000 - 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.

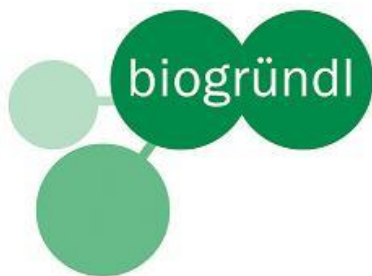
### **DERMATOLOGY INNOCUOUSNESS**

It was performed by the patch test (Patch test) on 10 volunteers. To this purpose, 15% VIB-ACTIV 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, SODIUM PCA, ISOPROPYL ALCOHOL, GLYCINE SOJA GERM EXTRACT, HYDROLYZED SERUM PROTEIN, AMINOBUTYRIC ACID, PEG-40 HYDROGENATED CASTOR OIL, POTASSIUM SORBATE, TOCOPHERYL ACETATE, RETINYL PALMITATE, ASCORBYL PALMITATE, CALCIUM SULFATE, MAGNESIUM SULFATE, COPPER SULFATE, POTASSIUM SULFATE, ZINC SULFATE, MANGANESE SULFATE, FERRIC SULFATE.

### **EFFECTIVENESS TESTS**

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

**Assayed parameters:** Anti-wrinkle action. Regenerative action.

**N (volunteers):** 30 (17 ♀ and 13 ♂).

**Age (volunteers):** 30 - 75 years old.

**Left side part to be treated:**

Placebo, 30 volunteers, suitable cosmetic base.

**Right side part to be treated:**

VIB-ACTIV 2%, 15 volunteers, suitable cosmetic base.

**Right side part to be treated:**

VIB-ACTIV 5%, 15 volunteers, suitable cosmetic base.



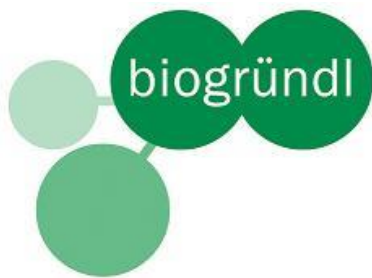


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### Assayed parameters:

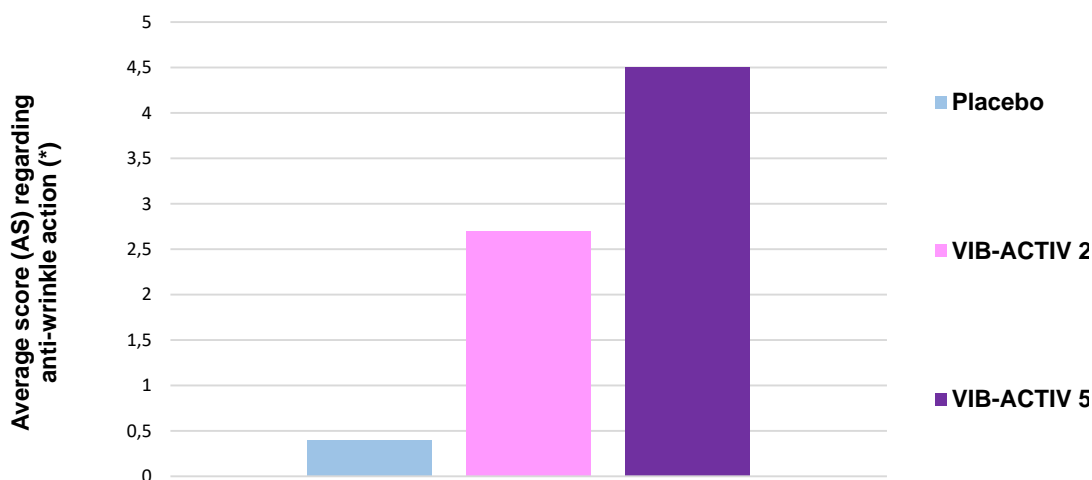
	Assay	N (volunteers)	Age (volunteers)	Placebo	VIB-ACTIV 2%	VIB-ACTIV 5%	Assay performed (Days)	Results measured (Days)
<b>Anti-wrinkle action</b>	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 17 ♀ 13 ♂	30 - 75	Left side part	Right side part 15 volunteers.	Right side part. 15 volunteers.	D = 30	D' = 1
<b>Regenerative action</b>	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 17 ♀ 13 ♂	30 - 75	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



(\*) Anti-wrinkle action was determined by microscopic observation of depth and length of furrows, wrinkles and expression lines 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% VIB-ACTIV by BIOGRÜNDL, S.L., 5% VIB-ACTIV by BIOGRÜNDL, S.L..

#### Results meaning:

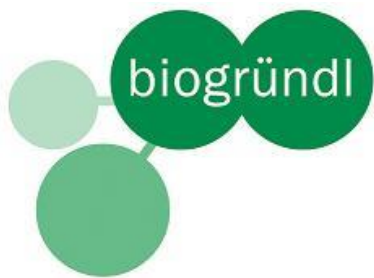
AS rank between 0 – 1: No significant changes.

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.

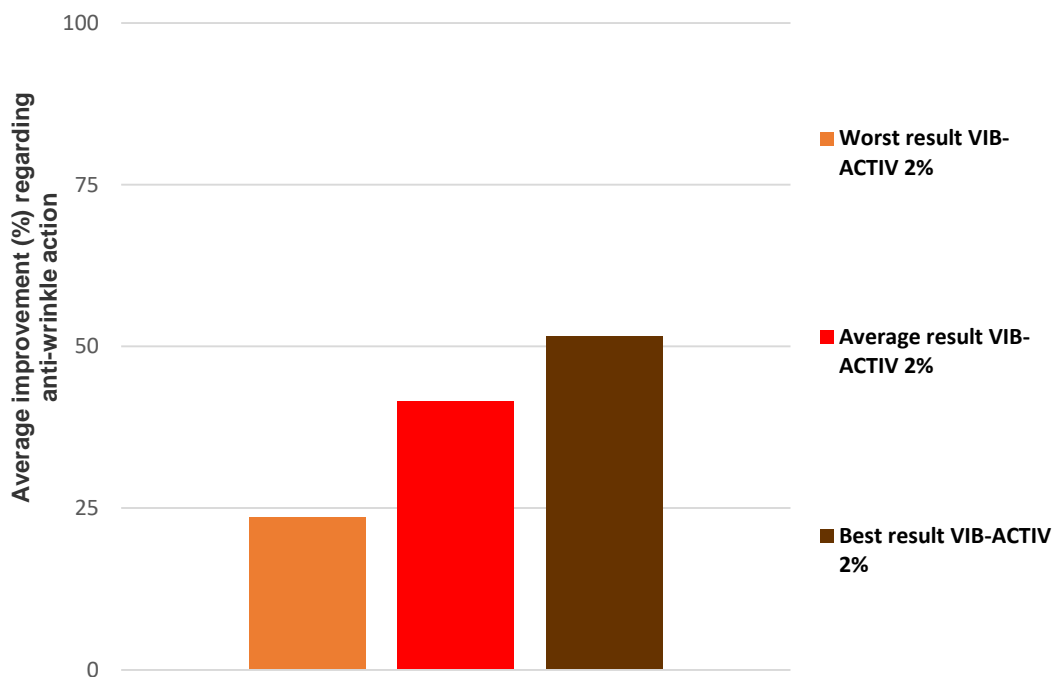
AS rank between 4 – 5: Excellent cosmetic result.



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### VIB-ACTIV 2%



#### Results:

Worst result VIB-ACTIV 2%: 23,5%.  
Average result VIB-ACTIV 2%: 41,5%.  
Best result VIB-ACTIV 2%: 51,5%.

#### Results meaning:

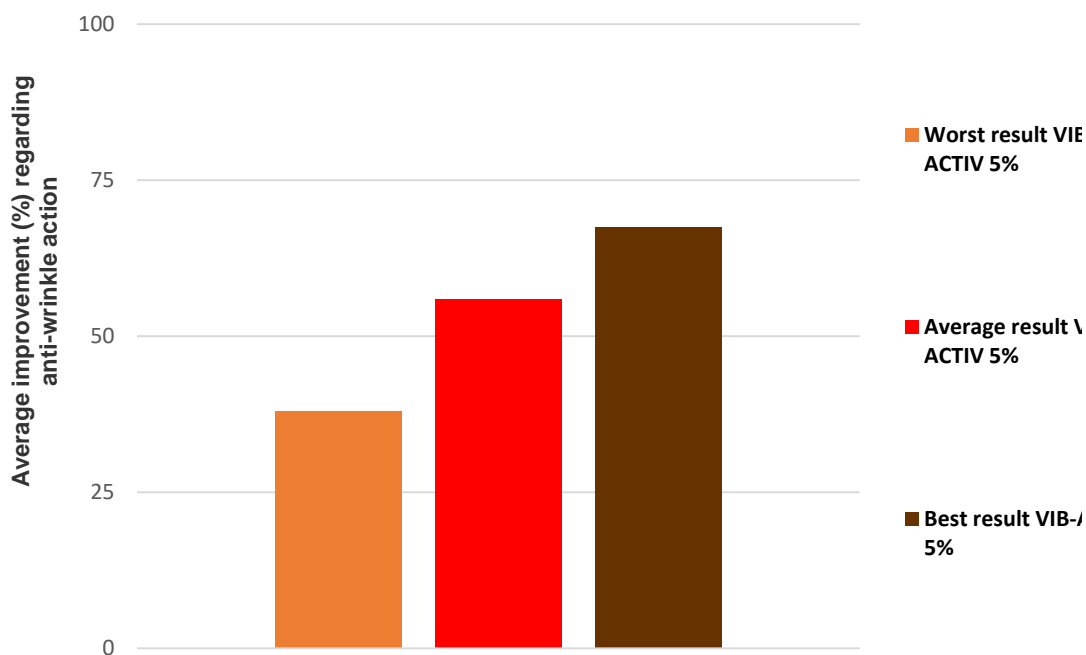
AI rank between < 20%: No significant changes.  
AI rank between 21 – 40%: Slight improvement regarding placebo.  
AI rank between 41 – 60%: Appreciable improvement regarding placebo.  
AI rank between 61 – 80%: Great improvement regarding placebo.  
AI rank between > 81%: Excellent cosmetic result.



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### VIB-ACTIV 5%

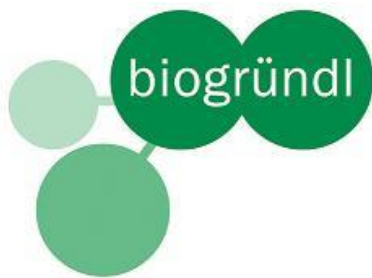


#### Results:

Worst result VIB-ACTIV 5%: 38%.  
Average result VIB-ACTIV 5%: 56%.  
Best result VIB-ACTIV 5%: 67,5%.

#### Results meaning:

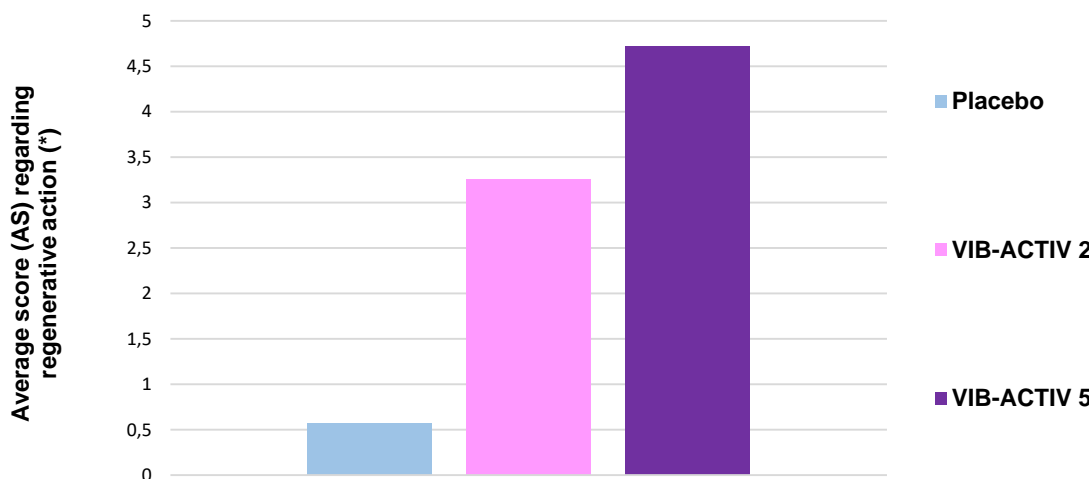
AI rank between < 20%: No significant changes.  
AI rank between 21 – 40%: Slight improvement regarding placebo.  
AI rank between 41 – 60%: Appreciable improvement regarding placebo.  
AI rank between 61 – 80%: Great improvement regarding placebo.  
AI rank between > 81%: Excellent cosmetic result.



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### SKIN CONDITION EVALUATION AFTER 30 DAYS



(\*) Regenerative action was determined by verification of cellular proliferation increase from volunteers skin tissue sample.

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% VIB-ACTIV by BIOGRÜNDL, S.L., 5% VIB-ACTIV 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.

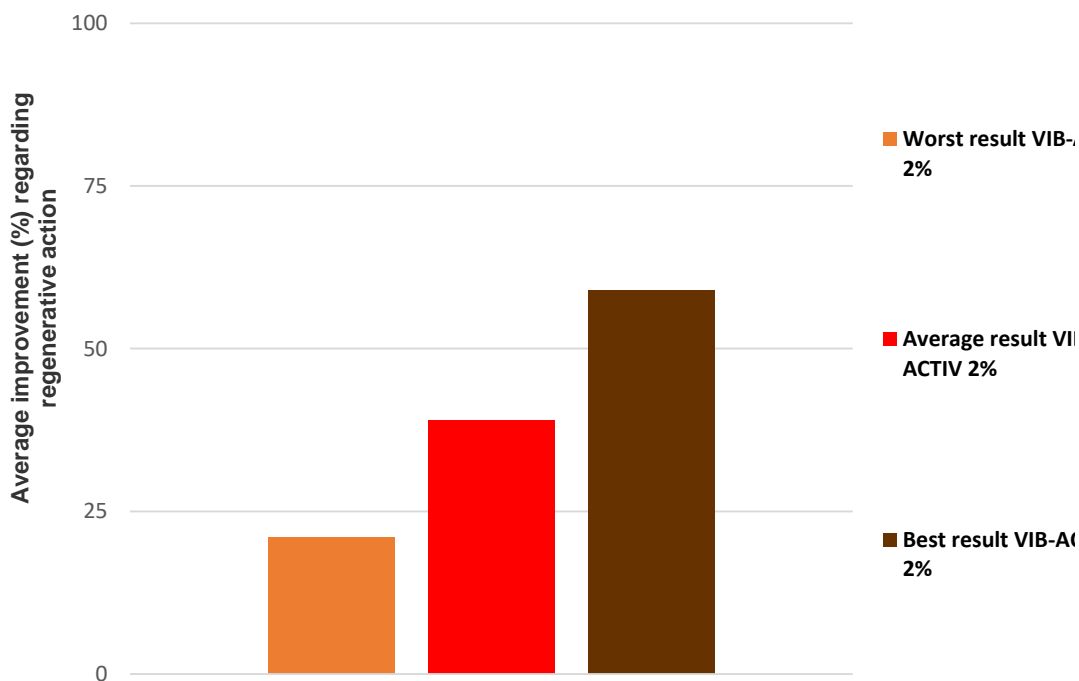
AS rank between 4 – 5: Excellent cosmetic result.



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### BIOTINT 2%



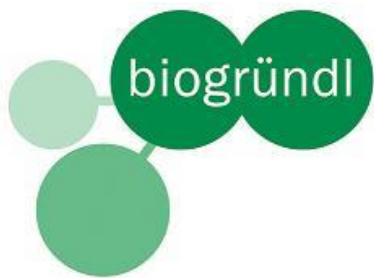
#### Results:

Worst result VIB-ACTIV 2%: 21%.  
Average result VIB-ACTIV 2%: 39%.  
Best result VIB-ACTIV 2%: 59%.

#### 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.

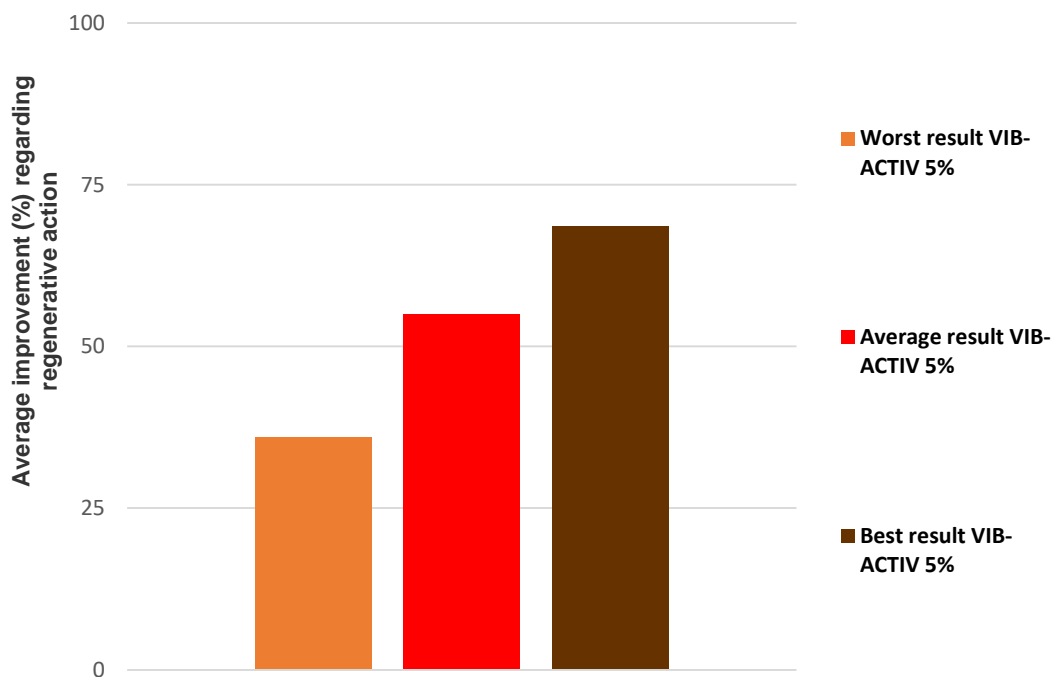




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## TECHNICAL DATA SHEET

### BIOTINT 5%



#### Results:

Worst result VIB-ACTIV 5%: 36%.  
Average result VIB-ACTIV 5%: 55%.  
Best result VIB-ACTIV 5%: 68,5%.

#### Results meaning:

AI rank between < 20%: No significant changes.  
AI rank between 21 – 40%: Slight improvement regarding placebo.  
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