BERACA

BERACLAY 20561

Gold Clay

BeraMinerals

BERACA presents a wide portfolio composed of fixed oils, butters, scrubs, clays and actives sustainably sourced from the Brazilian biodiversity. The ingredients come from extractive communities throughout Brazil and are manufactured to connect our biodiversity with thousands of consumers around the world. Through a relationship marked by transparency, traceability and innovation, Beraca contributes directly to regional development and environmental preservation.

GENERAL INFORMATION

Product Code: AB20561B
Related codes: AB20561BA00, AB20561BX05, AB20561BX15
Previous code: BRC-G10

Clay is a natural mineral composed of extremely fine particles of silicates and several trace elements. The clays may exhibit different types and concentrations of metals such as titanium, magnesium, copper, zinc, aluminum, calcium, potassium, nickel, manganese, lithium, sodium and iron.

Clays are derived from sedimentary rocks (feldspar) that have undergone the process of erosion and exposure to climate processes for thousands of years. During this process, these fragments of rock break off and absorb characteristic metals and components of the land. The fragments can also be weathered by water from nearby rivers and organic compounds in each micro-region, thus forming the mineral product that is known as clay.

Thus it is possible to understand that each clay is unique, the result of a specific composition of soil, water and climate processes that occurred in a particular place and time.

Clays have been used for aesthetic purposes for centuries, and their expressive properties make it a raw material ideal for cosmetic products for skin care, hair and scalp. Many properties of clay have been highlighted by the cosmetic market in recent years, such as their water and oil absorption properties and firming effects.

The BeraMinerals line is comprised of different Brazilian clays and quartz crystals having various granulometric profiles. BeraMinerals can be used for many different cosmetic applications, such as creams/lotions, exfoliating products and cleansers, hair care products and color cosmetics, and can be used pure or in formulations.

PROPERTIES

- Natural and highly stable colors;
- Natural color promotion for cosmetic products;
- Improvement in sensory properties in emulsions;
- Help to promote cell ionic exchange;
- Remove waste (impurities, oiliness and dead skin cells);
- Reconstitution of the hair cuticle.

COSMETIC USE

Because of its many properties, especially cosmetic, the Gold Clay is suitable for pure application or as an active in formulations, such as:

• Shampoos, conditioners and masks for all hair types;
• Setting sprays and setting powders;
• Natural and organic formulations;
• Facial cleansers and creams

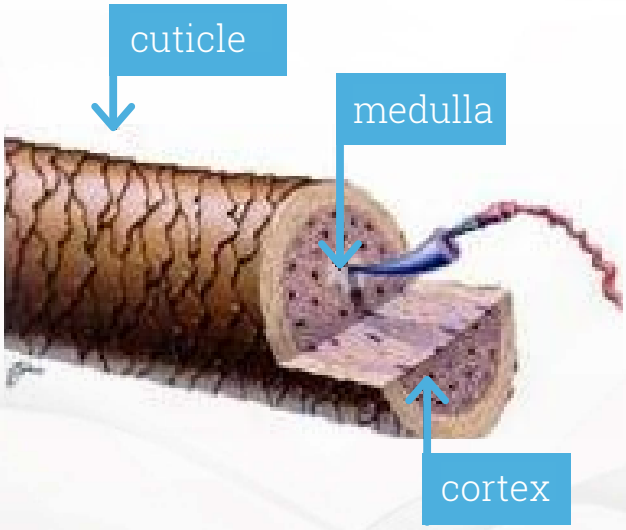
EFFICACY EVALUATION

INTRODUCTION

Hair is a natural fiber formed by keratin. According to its geometry and physical structure, the hair has various properties, such as elasticity, softness, volume, combability and shine.

Based on its morphology, the hair has three layers:
- Cuticle: outermost layer, contains a high level of cysteine. Acts as protector of the innermost layer, the cortex.
- Cortex: Part of the hair with the greatest mass. Formed by very fine fibers, it has melanin granules which determine the color and photoprotection of hair according to the quantity. Straightening / permanent wave and color processes occur in this hair region.
- Medulla: central fiber, it may be discontinuous or absent in certain types of hair.

Figure 1 below shows a scheme of the hair fiber.



(SOURCE: Fitocosmetic)

Figure 1. Schematic representation of the hair fiber.

Chemical treatments in general, as well as excessive use of dryers and flat irons can damage the hair structure from the cuticle to the core. The high temperatures achieved by those devices, can damage the fibers, breaking them, and, in many cases, even burn the cuticle.

Thus, Beraca presents Beraclay 20561 (Gold Clay) for the treatment of hair fiber, directly benefiting the cuticle.

OBJECTIVE

The study aims to evaluate the ability of the Gold Clay product to repair the hair cuticle. The external hair structure was evaluated by Scanning Electron Microscopy (SEM) after treatment with a hair shampoo formulation containing Gold Clay.

METHODS

1. Laboratory

The study was conducted at an independent laboratory, Allergisa Pesquisa Dermato-Cosmética Ltda. Study Reference: All-E-SEM-39411-01-08-14-RF01.

2. Experimental groups and treatments

For evaluations, experimental groups and their treatment are listed in Table 1 below.

Table 1. Products used in the study.

Experimental group	Treatment
PLACEBO	Shampoo without Gold Clay
GOLD CLAY	Shampoo at 4% Gold Clay (AB20561B)

The products were stored at ambient temperature throughout the duration of the study.

3. Procedure

For the evaluation of treatment with **Gold Clay**, two tresses of Caucasian hair, 3.0g of 20 cm each, were pre-washed with SLES 20% according to the following procedure: 0.5 ml of Sodium Lauryl Ether Sulphate (SLES) at 20% was applied to the tresses, which were massaged for 30 seconds and rinsed under running water for 1 minute. This step was performed twice for each tress.

To one of the tresses 0.5 ml of the **placebo** shampoo was applied and to the other tress, 0.5 ml of shampoo with **Gold Clay** at 4%. After being massaged for 30 seconds, the tresses were rinsed for 1 minute with running water. This procedure was performed twice for each tress.

The tresses were left to dry at room temperature.

For MEV analysis, six strands from each tress were collected and placed in aluminum racks with conductive copper tape. The shelf + strand assembly was covered with a golden film. As a result, images were obtained using different magnitudes (400x, 750x and 1400X), with an observation angle of 60 °.magnitudes (400x, 750x and 1400X), with an observation angle of 60°.

RESULTS

Figures 2 and 3 below show the images obtained via MEV of strands evaluated after treatment with Placebo and Beraclay Gold, respectively.

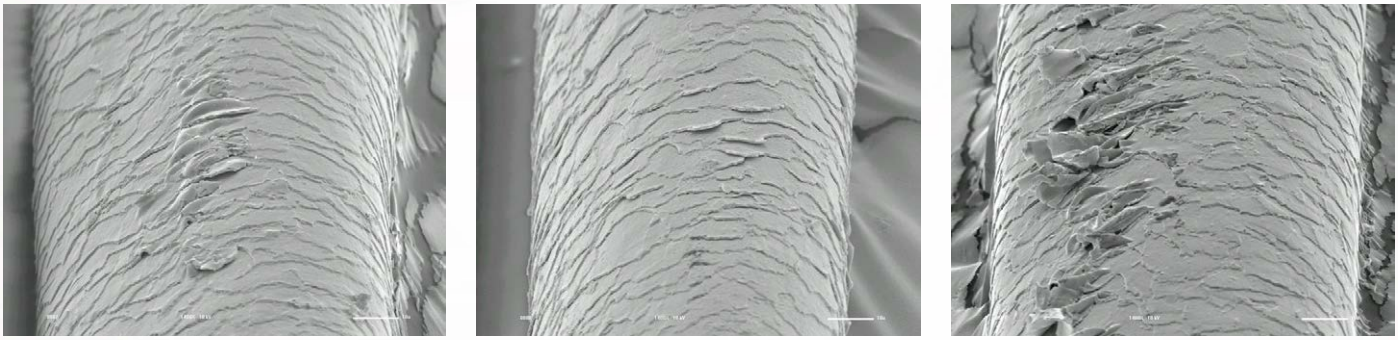


Figure 2. Representative image of the hair treated with **placebo**.

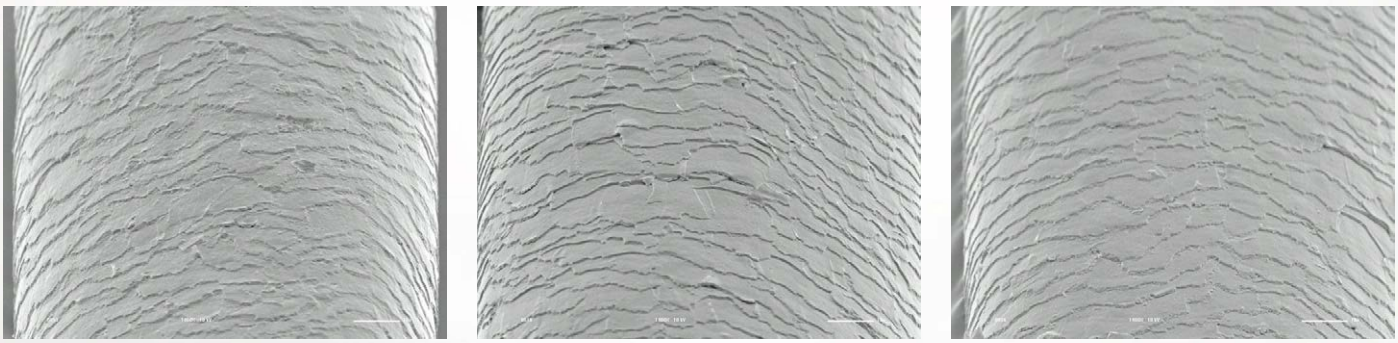


Figure 3. Representative image of the hair after treatment with **Beraclay Gold at 4%.**

In a comparison between the images, it can be observed that the treatment with 4% **Gold Clay** at 4% promoted a coverage on the hair strand, making the cuticle scales in the images smoother and homogeneous, indicating a repair of the hair cuticles, while the treatment with **Placebo** did not promote the same effect.

CONCLUSION

According to the results, it can be concluded that the treatment with shampoo containing **Gold Clay at 4%** promoted the repair of the hair cuticle.

APPLICATION

FORMULATIONS USED IN TESTS

GOLD CLAY GROUP	
INGREDIENTS	**% w/w**
Aqua	Up to 100%
Disodium EDTA	0.10
Magnesium Aluminium Silicate	1.35
AB20561B - Beraclay 20561 (Gold Clay)	4.00
Sodium Laureth-2 Sulfate	23.00
Cocomidopropyl Betaine	4.00
Cocamide DEA	3.00
Fragrance	0.50
Sodium Chloride	q.s.p.

PLACEBO GROUP	
INGREDIENTS	**% w/w**
Aqua	Up to 100%
Disodium EDTA	0.10
Magnesium Aluminium Silicate	1.35
Sodium Laureth-2 Sulfate	23.00
Cocomidopropyl Betaine	4.00
Cocamide DEA	3.00
Fragrance	0.50
Sodium Chloride	q.s.p.

FORMULATION SUGGESTION

1. SHAMPOO WITH BERACLAY GOLD

Formulation:	**SHAMPOO WITH GOLD CLAY**

INGREDIENTS	**INCI**	**%**	**SUPPLIER**
PHASE A			
WATER	*Aqua*	q.s.p	-
SODIUM LAURETH-2 SULFATE	*Sodium laureth-2 sulfate*	20.00	-
ACULYN 33	*Acrylates Copolymer*	10.00	-
COCAMIDOPROPYL BETAINE	*Cocamidopropyl betaine*	5.00	-
DERMOSOFT 1388 ECO	*Glycerin, Aqua, Sodium Levulinate, Sodium Anisate*	3.50	-
GLYCERIN	*Glycerin*	1.00	-
PHASE A1			
SODIUM HYDROXIDE (SOL. 18%)	*Sodium Hydroxide*	q.s 6.5 – 6.8	-
PHASE B			
COCOAMIDOPROPIL BETAÍNA	*Cocamidopropyl betaine*	4.00	-
AB20561B BERACLAY 20561 (GOLD CLAY)	***Kaolin***	**4.00**	**BERACA**
PHASE C			
FRAGRANCE	*Fragrance*	0.25	-

PHASE D			
SODIUM CHLORIDE	*Sodium Chloride*	q.s.p	-

Procedure:
Mix ingredients of phase A, one by one.
Adjust the pH of phase A in 6.5 to 6.8 using the phase A1 (NaOH).
Weigh phase B and mix.
Add phase B to A and kept under stirring until complete homogenization.
Add phase C.
Adjusting the viscosity using the phase D, if necessary.

Formulation suggestions and their samples are provided by Beraca Ingredientes Naturais S.A. for your convenience, as general knowledge notes on the use of their products. Therefore, they are not commercial formulations and have not undergone safety and efficacy testing. Beraca Ingredientes Naturais S.A. does not guarantee its commercialization, suitability to use, performance, microbiological profile and safety. Industrial property rights must be observed to ensure exemption from patent infringement. It is the responsibility of the client to test the formulation before its use, guaranteeing its safety according to the Cosmetic Safety Guide / ANVISA together with RDC 03/2012. All warranties, indemnities and obligations, implied and expressed by law, exclude Beraca Ingredientes Naturais S.A. to the fullest extent permitted by law.

PHYSICAL AND CHEMICAL PROPERTIES

ANALYSIS	UNITS	SPECIFICATIONS
Appearance	Visual	Powder
Color (in nature)	Visual	Dark yellow
Odor	-	Characteristic
Granulometric distribution in suspension (maximum medium diameter)	µm	Max. 15.00
Organic Material	%	Max. 1.50
Loss for Dehydration	%	Max. 4.00

CHEMICAL COMPOSITION

SiO_2	%	42.00 – 52.00
Fe_2O_3	%	3.00 – 9.00
Al_2O_3	%	26.00 – 36.00
TiO_2	%	1.20 – 2.20

MICROBIOLOGICAL ANALYSIS

Total bacteria	cfu/g	< 100
Fungusandyeasts	cfu/g	< 10
Staphylococcus aureus	cfu/g	Absent
Pseudomonasaeruginosa	cfu/g	Absent
Total Coliforms	cfu/g	Absent

STORAGE INFORMATION

This product is stable for 48 months when stored in dry, well ventilated and light protected surroundings. Once open it should be used immediately. As it is a raw material of natural origin, there may be variations in color and composition between batches.

REGULATORY INFORMATION

INCI name (PCPC / COSING)	CAS Number
KAOLIN	1332-58-7

BERACA

BERACA INGREDIENTES NATURAIS S.A.

Rodovia BR 316, Km 08, Quadra 03, Lote 03
Levilândia - Ananindeua
Pará - Brasil
Phone: +55 (91) 3215-5200