

BERACA



**RAIN FOREST 03510
(REFINED PASSION FRUIT OIL)**



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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: BR03510B

Related codes: BR03510BA00, BR03510BB46, BR03510BD19,
BR03510BX15, BR03510BX18, BR03510BX36, BR03510BX45

Previous code: RF3510

The species *Passiflora edulis Sims*, belonging to the family Passifloraceae, is a plant native to Brazil, popularly known as Passion Fruit. It is characterized by being a perennial, terrestrial creeper. It is a non-endemic species, occurring in the Atlantic Forest, *Caatinga*, *Cerrado*, Amazon and *Pantanal* biomes.

It is a fertile species throughout the year, being widely cultivated for edible and other uses. The passion fruit presents different coloration and shapes, it reaches 9 cm in diameter, the pulp of the fruit is yellow to orange, and it has numerous oval seeds of dark coloration.

COSMETIC USE

The Passion Fruit Oil, extracted from the fruit's seeds, is rich in unsaturated fatty acids with nutritional and moisturizing properties for the skin and hair.

It can be used in formulations aimed at reducing oiliness of the skin, such as: gels, tonics, creams, lotions, soaps, sunscreens, makeup and in formulations that seek a dry and a velvety touch to the skin.

For the treatment of hair, we indicate its use in products such as shampoo, conditioner, capillary mask, ampoules, and leave-in products, in order to improve features such as hydration and gloss.

EFFICACY EVALUATION

INTRODUCTION

The skin is an organ that has the basic function of protecting the body against the action of physical agents and external chemicals. It also controls the exchange of water and electrolytes to the environment, in addition to temperature regulation. These functions are controlled by annexes, structures derived from the epidermis, originated from the hair follicle, sweat-glands and sebaceous glands (Figure 1).

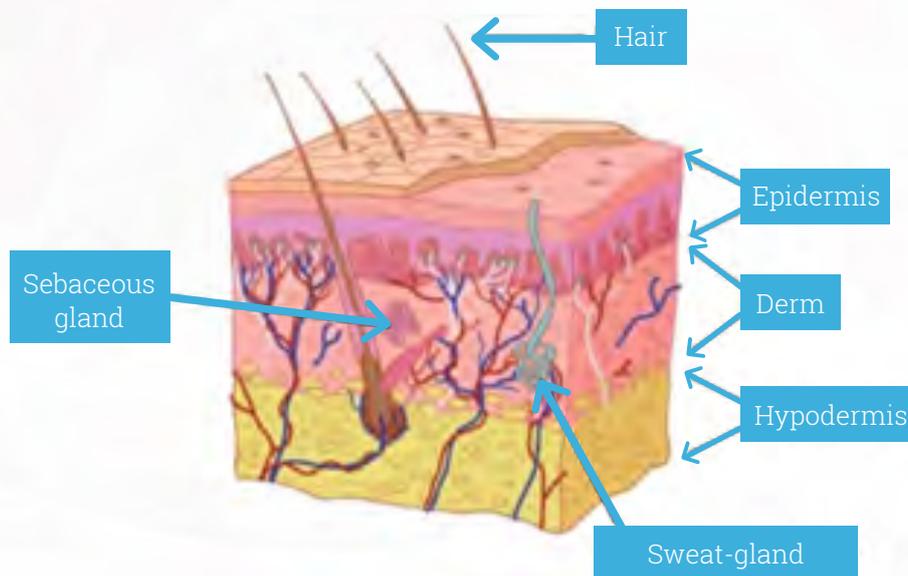


Figure 1. Skin structure and its annexes.

The hair serves to assist in thermal insulation. The sweat-gland is responsible for regulating the body temperature. The sebaceous gland is the annex which produces sebum, a mixture of lipids and triglycerides, which hydrates and protects the skin, including prevention against the action of microorganisms. The sebaceous glands are present throughout the skin, but vary in number and size according to the region of the body. The face being the region that has the largest production of sebum.

The composition and amount of sebaceous gland secretion vary from individual to individual, according to the genetic characteristics. This in turn differentiates the type of skin; dry or oily. Furthermore, hormones and external agents such as the sun, the ambient temperature or the use of cosmetics may influence sebum production.

When the sebaceous glands produce more sebum than necessary, the skin becomes oily and becomes shiny, with enlarged pores mainly in the central regions of the face, nose, cheeks and chin. Some diseases may be associated with oily skin, such as acne, seborrheic dermatitis and the sebaceous hyperplasia, or an increase in the size of sebaceous glands.

Thus, Beraca evaluated the potential of the **RAIN FOREST 03510 (REFINED PASSION FRUIT OIL)** for sebum control.

OBJECTIVE

The objective of the study was to clinically evaluate the reduction of sebum after treatment with 5.0% Passion fruit oil in moisturizer.

METHODS

1. Laboratory

The study was conducted in an independent laboratory, the *Kosmoscience Ciência & Tecnologia Cosmética Ltda.*
Study reference: BC014-08 - R0.

2. Experimental groups and treatments

The experimental groups and their respective treatments are listed in table 1 below.

Table 1. Products used in the study protocol BC014-08 - R0.

Experimental group	Treatment
CONTROL	Water
PLACEBO	Moisturizer with Paraffinum Liquidum at 5.0%
REFINED PASSION FRUIT OIL	Moisturizer with REFINED PASSION FRUIT OIL (BR03510B) at 5.0%

All products were stored at room temperature for the duration of the study.

3. Methodology

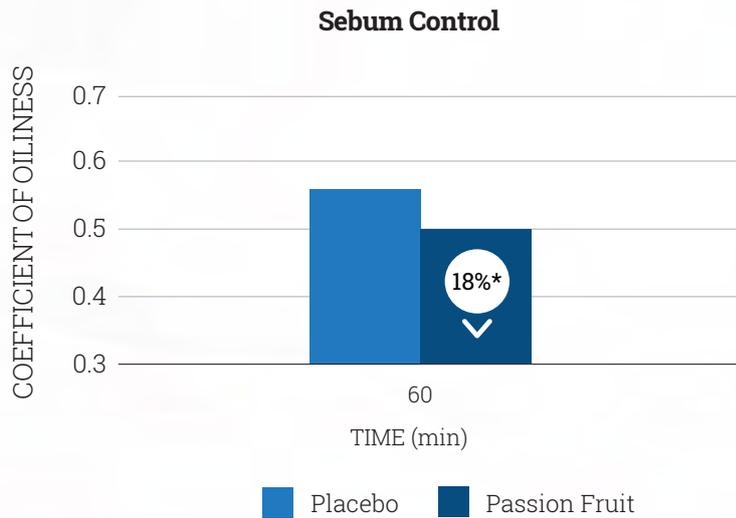
For the evaluation of sebum control, the study was carried out via Sebumetry, with 50 female volunteers, divided randomly into two groups: **Placebo** and **REFINED PASSION FRUIT OIL**. The volunteers were maintained for 15 minutes in an environment with controlled temperature ($22 \pm 2^\circ\text{C}$) and relative humidity ($55 \pm 5\%$) prior to application of the products.

In each volunteer, two areas of 2.0 x 2.0 cm were marked with a surgical pen in a specific region of the face (forehead). Baseline sebum measurements were recorded prior to application of test products. In one of the demarcations, 20 μL of sample was randomly applied, the other one being Control, where 5 mL of water were applied. After 15 minutes of application, the products were withdrawn. The oil sebum production rate was then measured after 60 minutes. Sebum measurements were made with the MPA-5 Sebumeter® 815 equipment.

The obtained values of oiliness (sebaceous secretion) were used to determine the Coefficients of Oiliness in each time of evaluation. Statistical comparison was done using Student's t-test, with a 95% confidence interval.

RESULTS

Graph 1 shows the coefficients of oiliness obtained for **Placebo** and for the moisturizer with **REFINED PASSION FRUIT OIL**. The lower the coefficient of oiliness, the greater the reduction of sebum when compared to the **Control**.



* Statistical significance $p < 0.05$ compared to Control.

Graph 1. Evaluation of the control of sebum after treatment with **REFINED PASSION FRUIT OIL** applied at 5.0%, for a period of 60 minutes.

According to the results obtained, it can be verified that the moisturizer containing **REFINED PASSION FRUIT OIL** significantly reduced sebum by 18% when compared to Control after 60 minutes of application.

In relation to Placebo, there was no significant reduction in the time evaluated.

CONCLUSION

The Passion Fruit Oil, through its bioflavonoids, has a regulation action of the sebaceous glands, which was demonstrated through the result obtained by Sebometry, when compared to **Placebo**, the 5.0% **REFINED PASSION FRUIT OIL** containing moisturizer was able to promote a significant reduction in Facial (18%) sebum after 60 minutes of application.

ATTACHMENT

FORMULATIONS USED IN TESTS

PLACEBO GROUP	
INGREDIENTS	% w/w
Aqua	Up to 100%
Tetrasodium EDTA	0.01
Paraffinum Liquidum	5.00
PPG-15 Stearyl Ether	1.60
Steareth-2	1.40
Steareth-21	1.00
Cetearyl Alcohol	6.00
Carbopol 940 (10% sol.)	2.00
Aqua	10.00
Germal 115	0.30
Fragrance	0.50

PASSION FRUIT GROUP AT 5.0%	
INGREDIENTS	% w/w
Aqua	Up to 100%
Tetrasodium EDTA	0.01
BR03510B – REFINED PASSION FRUIT OIL	5.00
PPG-15 Stearyl Ether	1.60
Steareth-2	1.40
Steareth-21	1.00
Cetearyl Alcohol	6.00
Carbopol 940 (10% sol.)	2.00
Aqua	10.00
Germal 115	0.30
Fragrance	0.50

PHYSICAL AND CHEMICAL PROPERTIES

ANALYSIS	UNITS	SPECIFICATIONS
Appearance	Visual	Viscous liquid
Color	Visual	Light yellow to greenish
Odor	-	Characteristic
Specific gravity (20°C)	g/cm ³	0.890 – 0.950
Refractive index (20°C)	-	1.460 – 1.480
Acid value (as oleic acid)	%	≤ 2.0
Peroxide value	meqO ₂ /Kg	≤ 10.0
Iodine value	gI ₂ /100g	115 – 150
Saponification value	mgKOH/g	150 – 210

FATTY ACID COMPOSITION

Palmitic acid (C16:0)	%	9.0 – 14.0
Stearic acid (C18:0)	%	2.0 – 4.0
Oleic acid (C18:1)	%	5.0 – 25.0
Linoleic acid (C18:2)	%	55.0 – 80.0

MICROBIOLOGICAL ANALYSIS

Total bacteria h. m.	cfu/g	< 100
Fungus and yeasts	cfu/g	< 100

STORAGE INFORMATION

- **Shelf Life** → 18 months
- **Conditions** → Dry, cool, airy place, away from light and heat and other sources in an environment with constant temperature not exceeding 25°C
- **Container** → Nitrogen blanketed

IMPORTANT OBSERVATIONS

- Considering that is a natural product, if the storage guidelines are not met, the physicochemical characteristics may vary, reducing the shelf life.
- After opening the product should be consumed as soon as possible. Contact with oxygen generates an oxidative process which can decrease the shelf-life of the product.
- Due to the particularity of each oil, it is not possible to establish an oxidative parameter for the period of exposure.
- Natural oil substances and waxes could settle during storage and develop a slight sedimentation at the bottom of the container. Please have this in mind when emptying the container.
- The above information has been developed with the methods and practices set out in AOCS (American Oil Chemists' Society).

REGULATORY INFORMATION

INCI Name (PCPC / COSING)	CAS Number
PASSIFLORA EDULIS SEED OIL	97676-26-1
TOCOPHEROL	59-02-9, 16698-35-4, 54-28-4, 119-13-1



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