KELO.CELL

The new product generation
of silicone gel with bioactive metabolites
of totipotent stem cells.

www.kelocell.com

LIST OF CONTENTS

Abbreviations 4

Executive Summary 5

1. INTRODUCTION 6

1.1. Understanding the skin 7

1.1.1. Skin Inflammatory process 8

1.2. Skin Conditions 9

1.1.2. Psoriasis 9

1.1.3. Atopic dermatitis 9

1.3. Use of dermocosmetic in inflammatory skin diseases 10

2. POSITIONING 11

2.1. Observation 11

2.2. Opportunity 12

2.3. Outcome 12

3. FORMULATION 13

3.1. Product description 13

3.2. List of ingredients 14

3.2.1. Derma-Clera™ 21

3.2.2. Vitamin F Forte 24

3.2.3. Biophilic™ 26

3.2.4. *Curcuma Longa* (Turmeric) Root Extract 27

3.2.5. *Polidocanol (Laureth-9)* 29

3.2.6. Squalane 30

3.2.7. Silicone polymers 30

3.3. Safety assessment 31

4. INDICATIONS, CLAIMS AND PRODUCT STATEMENTS 32

4.1. Current product positioning 32

5. COMPETITIVE LANDSCAPE 35

6. REFERENCES 39

ABBREVIATIONS

COX	Cyclooxygenase
DEX	Dexamethasone
FDA	Food and Drug Administration
FGF	Fibroblast Growth Factor
GSH	Glutathione
HDF	Human Dermal Fibroblasts
IL	Interleukin
IMQ	Imiquimod
INCI	International Nomenclature of Cosmetic Ingredients
MMP	Matrix Metalloproteinase
MMPs	Matrix Metalloproteinases
NF-kB	Nuclear Factor kappa B
TNF-a	Tumour necrosis factor-alpha
UK	United Kingdom

EXECUTIVE SUMMARY

KELO.CELL Psoris is a combination of two products, a dynamic duo, KELO.CELL Psoris Body Lotion and KELO.CELL Psoris SOS Acute Balm designed to appeasing skin prone to irritation. Developed with utmost care, these novel products are meticulously crafted to nourish, hydrate, and help to restore the skin›s natural balance. The bioactive ingredients present in these products work harmoniously to help to reduce itching and improve skin hydration, making it a possible strategy for sensitive skin.

In its composition KELO.CELL Psoris combines novel ingredients with emollient properties and bioactive factors extracted from plant totipotent stem cells. Most claims and statements on KELO.CELL Psoris products are supported by the evidence provided in this review.

The skincare industry is witnessing a paradigm shift, with increasing consumer demand for products that cater to specific skin conditions. Psoriasis and atopic dermatitis, being prevalent and disruptive skin conditions, present a significant market opportunity for specialized skincare products. While the market for skincare products targeting psoriasis and atopic dermatitis is expanding, competition remains relatively moderate. There are limited cosmetic products available that are specifically formulated for these conditions, leaving ample room for innovation and market penetration. Competing products often lack a comprehensive approach that combines science-backed ingredients, advanced formulations, and effective communication of benefits.

After this detailed revision, KELO.CELL Psoris presents a unique opportunity to address the unmet needs of individuals dealing with psoriasis and atopic dermatitis. By combining innovative formulations, evidence-based research, and personalized solutions, the brand aims to establish itself as a frontrunner in the dermatological skincare market. With a focus on delivering tangible improvements in skin health and quality of life, KELO.CELL Psoris is positioned to contribute to the well-being of individuals facing these challenging skin conditions while driving innovation within the cosmetic industry.

01. INTRODUCTION

Psoriasis and atopic dermatitis are among the most frequently encountered skin conditions in both general medical practice and specialized dermatology (Psomadakis and Hagen, 2019). These skin types are often weakened and more susceptible to irritations caused by external factors. As a result, specific care is needed to not only restore the structure of the epidermis but also to help the skin regain its strength. These conditions are known for their rough, rough, and peeling appearance, often accompanied by itching and/or tightness. Therefore, it is important to use skincare products that provide moisturization and are specifically designed to address sensitivity and pruritus (Purnamawati et al., 2017).

KELO.CELL Psoris Body Lotion and KELO.CELL Psoris SOS Acute Balm are a dynamic duo designed to appeasing skin prone to irritation. Developed with utmost care, these novel products are meticulously crafted to nourish, hydrate, and help to restore the skin›s natural balance. The bioactive ingredients present in these products work harmoniously to help to reduce itching and improve skin hydration, making it a possible strategy for sensitive skin.

The KELO.CELL Psoris Body Lotion is intended for daily skin care, guarding against breakouts and extending the period of injury-free skin. With its rich formula, the skin will become softer and hydrated, preventing from prevents further flare-ups.

The KELO.CELL Psoris Acute Balm arises as a solution to minimize the outbreaks of the irritated skin, providing nourishment, hydration and normalizing the skin barrier, which decrease skin dryness, itching, burning, and stinging sensation.

KELO.CELL Psoris range aims to unleash a new product line with the transformative power of specific ingredients, backed by scientific innovation, elevating self-care routine.

1.1. Understanding the skin

The skin is composed of three layers, the epidermis, dermis, and subcutaneous tissue. Epidermis layer is in turn divided into five sub-layers, one of them the stratum corneum. This sub-layer has the role of skin barrier, preventing the excessive trans-epidermal water loss and being the first line of defence either from pathogenic or exogenous agents (Hadi et al., 2021). Indeed, skin forms an active barrier which is the first line of the immunological system against infection (Pasparakis et al., 2014). The most numerous cell type in the epidermis is the keratinocytes. Several are the components of keratinocyte interstitial lipids required for the permeability barrier homeostasis, namely ceramide (50%), cholesterol (25%) and fatty acids (20%) (Kang et al., 2022). Dermis layer contains stromal cells, such as fibroblasts, fibrocytes and structural cells of the blood and lymph vessels as well myeloid and lymphoid immune cells, which are dynamic and have a role in immune responses (Pasparakis et al., 2014). Any impairment of the structure and function of the three layers can induce skin conditions, which can lead to skin diseases.

One billion people suffer from skin conditions mainly caused by six or seven common skin diseases according to Roderick Hay, advisor of the International Foundation for Dermatology (UK) (WHO, 2020).

Within skin diseases, psoriasis and atopic dermatitis are ones of the more common. Psoriasis is an immune-mediated chronic disease characterized by inflammation, which leads to visible signs, such as raised plaques of reddish skin covered with silvery-white scale (Menter et al., 2008; Menter et al., 2011; WHO, 2016). The formation of these plaques and scales results from the rapid growth of the skin cells which, instead of a month to complete the cell cycle, takes only three or four days (Rajguru et al., 2020; Zhou et al., 2022). Furthermore, in psoriasis, cells instead fall off at the end of the cycle, pile up on the surface of the skin forming the plaques and scales. These plaques and scales itch, burn and sting and can appear on any part of the body (AAD, 2023b; WHO, 2016). According to the Psoriasis Day Consortium, it is estimated that 125 million of people worldwide (about 2 to 3% of the total population) have psoriasis.

According to the National Eczema Association, eczema is a group of conditions that cause the skin to become itchy, inflamed, or have a rash-like appearance. Like psoriasis, eczema presents the discoloured skin, rash, and itching and burning sensations (AAD, 2023a). Thinner patches of dry, patchy, red or brown skin, and less defined borders between affected and unaffected skin are characteristic of eczema (Hadi et al., 2021). Furthermore, in this condition, small, fluid-filled sacs may leak or form crust and the skin may present signs of skin swelling and dryness (AAD, 2023a). Atopic dermatitis is a type of eczema which affects up to 2.4% of the worldwide population and the third most prevalent dermatological conditions (AAD, 2023a; Urban et al., 2021).

Flare-ups of skin problems are common and diligent steps must be taken to identify and avoid the triggers that cause them in order to prevent further outbreaks and the development of the disease. To achieve these goals, pharmaceuticals and/or cosmetics can be used. However, while pharmaceuticals are designed to treat the symptoms and prevent the development of the disease, cosmetics can be used to prevent flare-ups and primarily to maintain normal skin care and as an adjuvant of therapeutic pharmaceuticals.

1.1.1. Skin Inflammatory process

Metabolic processes and ultraviolet radiation generate reactive oxygen species, which can damage cells triggering proinflammatory cascades (Stamatas et al., 2013). Keratinocytes, which are a structural component of the skin, in addition to act as a barrier to external agents play an important role in immunologic activity since they secrete proinflammatory cytokines and mediators (Juráová et al., 2017; Pasparakis et al., 2014).

The inflammation process, which is the first stage for skin healing, can be divided in three overlapping phases: inflammatory, proliferative and remediation or remodelling phase (Cañedo-Dorantes and Cañedo-Ayala, 2019; Gethin, 2012; Jara et al., 2020). At the first phase, there is a release of cytokines and other cells mediators which attract neutrophils and platelets to the affected area in order to start fighting against infection and repair the damage. Is in this phase that the skin becomes reddish, swells and starts to pain. In addition, since cytokines are pyrogens, the temperature raises to difficult the bacteria growth. After, phagocytosis occurs in order to the body excrete the external agents (ex. harmful bacteria). The skin is now prepared to start rebuilding (proliferative phase). At this phase, the fibroblasts, which produce collagen, multiply and divide and cellular regeneration takes place. In addition, a new network of blood vessels is formed to transport the oxygen and nutrients needed. Finally, at the remediation phase, chemical signs are sent in order to inform that everything is healed, and the inflammation process is completed and that it is now time to stop the processes as the skin is now restored (Lin et al., 2018).

Chronic inflammation can last for long periods from several months to years and occurs when the fourth phases of the inflammation process are not completed. The purpose of chronic inflammation is to contain or remove the external agent not removed by the acute inflammatory process (DeLong and Burkhart, 2020). However, in some autoimmune diseases, like the psoriasis, the chronic inflammation occurs without a previous process of acute inflammation. In chronic inflammation a large number of mononuclear cells are recruited, there are a large tissue destruction and also there are many fails on attempts of the tissues healing (DeLong and Burkhart, 2020). Since all agents that might cause chronic inflammation are also recognized by the immune system, lymphocytes are present. These cells are responsible for initiate the immune process that occurs simultaneously with chronic inflammation (DeLong and Burkhart, 2020). Chemical mediators released by lymphocytes might stimulate the action of macrophages, which play a major role in chronic inflammation resulting in higher amounts of tissue destruction. During the phagocytosis, lysosomal enzymes can be released and destroyed normal cells and collagen fibbers in the area resulting in tissues destruction.

The process of chronic inflammation ends only when all agents responsible for the injury and all substances produced by the process are eliminated, and no more dead or necrotic tissues, and no insufficient stability and irritation of the area exist (DeLong and Burkhart, 2020).

The skin immune responses are regulated by the crosstalk between epithelial, stromal and immune cells, which allows the effective host defense and the maintenance or the restore of tissue homeostasis and prevent chronic disease (Pasparakis et al., 2014). In addition, also the interaction with microbial communities in skin surface are important to immune homeostasis of the skin (Dréno et al., 2016; Pasparakis et al., 2014). Therefore, skin immune homeostasis relies on the fine-tuned equilibrium between the microbial communities and the cellular components. Any disruption on this equilibrium will contribute to develop inflammatory skin diseases, such as psoriasis and atopic dermatitis among others (Dréno et al., 2016; Pasparakis et al., 2014). In this context, in barrier tissues, such as the skin, the communication of both components, the microbial communities and the host cells (epithelial, stromal and immune) are crucial to regulate immune responses.

1.2. Skin Conditions

1.2.1. Psoriasis

Psoriasis is a multifactorial disease which is mediated by genetic and environmental but also endogenous factors (Menter et al., 2011; Sticherling, 2005). Genetic susceptibility to environmental factors such as infections, drugs and stress, which in turn lead to inflammation processes and keratinocytes and vascular disfunction can result in clinical states of psoriasis. However, the interdependence of the different factors is not yet well stablished (Sticherling, 2005).

Clinically the most visible characteristic psoriasis is skin thickening and scaling, the epidermal growth and cell turnover are accelerated, and the keratinocyte differentiation is altered (Menter et al., 2011; WHO, 2016). Furthermore, the amount and composition of the extracellular lipids change resulting in a poorly adherent stratum corneum (Sticherling, 2005). The abnormal keratinocyte growth can be regarded as the primary event of the psoriasiform hyperplasia.

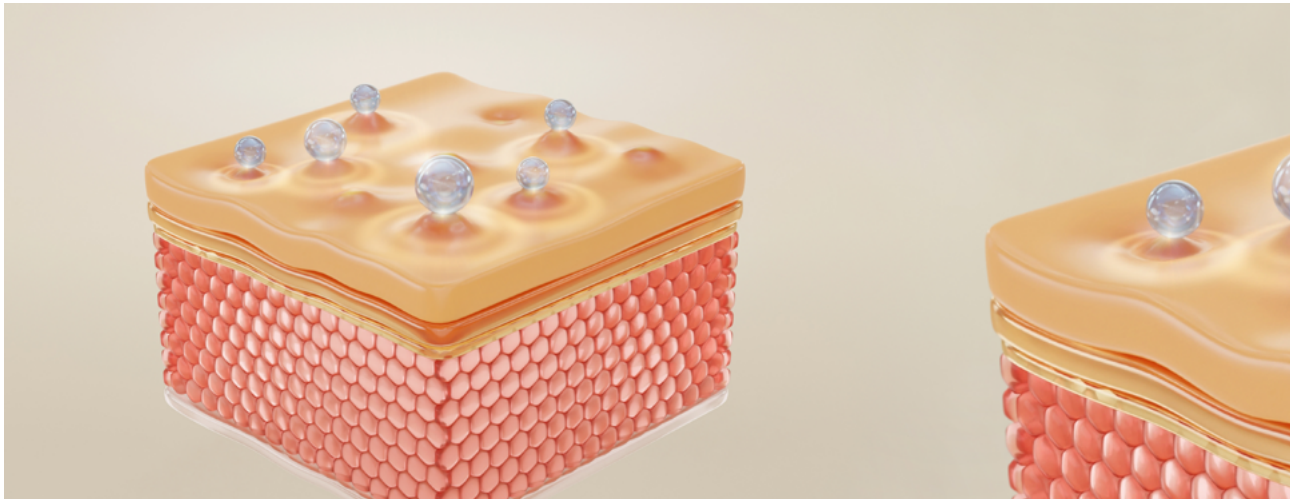
The involvement of angiogenic growth factors has been considered to have an important role in the psoriasis pathogenesis, and vascular growth is commonly regarded as secondary (Sticherling, 2005).

In 2006, the World Health Organization emphasized the importance of the research on psoriasis causes and on the development of new treatments. However, the treatment of this disease is still settles on decreasing the symptoms using biological agents, either topical and systemic, which regulate the keratinocytes proliferation and T-cell activation (Menter et al., 2011). Some of them can not be used for long-term since worsening the condition after withdrawing (Menter et al., 2008; Menter et al., 2011). The treatment is then determined depending on psoriasis severity and usually a combined therapy is used.

1.2.2. Atopic dermatitis

Atopic dermatitis is a type of eczema which affects up to 2.4% of the worldwide population and is the most common chronic skin disease (AAD, 2023a; B. E. Kim and Leung, 2018; Urban et al., 2021). This skin condition is commonly associated with the development of food allergies, asthma and allergic rhinitis (B. E. Kim and Leung, 2018). The characteristic of atopic dermatitis is dry and scaling skin with intense, unrelenting pruritus and cutaneous itching, which tends to be recurrent (Raimer, 2000). In the acute phase appear reddish eruptions, which form papules or vesicles, with exudation and formation of crusts that can evolve forming flake off lesions in the chronic phase of the disease (Oliveira et al., 2005). Lesions distribution varies with age. The exact cause of the disease is unknown, however immunologic mechanisms of immediate hypersensitivity appear to be in atopic dermatitis origin. Also, the hereditary component seems to be important (Oliveira et al., 2005; Raimer, 2000).

The first step to the atopic dermatitis development is the skin barrier impairment. The function of skin barrier can be affected by several factors that may interact with each other, such as disruption of the immune system, alterations on the epithelial differentiation, deficiency of antimicrobial peptides, alterations on the composition of intracellular lipids of the stratum corneum and alterations on skin microbiome (B. E. Kim and Leung, 2018).
No cure exists for the atopic dermatitis; however several measures can be taken to reduce the symptoms and prevent flare-ups. Among them: avoid the contact with substances that irritate the skin; maintain the skin healthy, which can be made using products that allow hydration and moisturization of the skin; use of therapeutic corticosteroids creams to soften lesions and control itching; use of antihistamines drugs; use of vegetable oils and vaseline to maintain skin smooth and lubricated (Nolan and Marmur, 2012; Raimer, 2000).



1.3. Use of dermocosmetic in inflammatory skin diseases

Consumers commonly expect therapeutic and physiological effects from cosmetics. Albert Kligman even proposed the term "cosmeceutical", which is not yet accepted by FDA, to cosmetics with an active ingredient capable of penetrating the stratum corneum at needed concentrations and that have special biochemical and pharmacological mechanisms in the skin cells and tissues (Kligman, 2005).

Dermocosmetics play an important role on skin healthy maintenance and protection and can act as adjuvant treatments for several skin disorders, such as atopic and contact dermatitis and for psoriasis (Dreno et al., 2014), diseases characterized by inflammation and disruption of skin barrier (Kang et al., 2022; Wirén et al., 2009).

When skin barrier function is compromised, there is an induction of production and secretion of cytokines, which might cause cutaneous inflammation, increase keratinocytes proliferation and epidermal hyperplasia (Lodén, 2003). Since a healthy stratum corneum, at skin surface, has 15% to 25% of water and around 40% at the stratum corneum granulosum border (Kang et al., 2022), one of the first measures to take when this skin barrier is damaged and the water-holding capacity is reduced is suppressing loss of water to restore it normal function and structure and maintain skin homeostasis. In this context, moisturizers and emollients play a central role, since they supply moisture and smoothness to the rough and flaky dry skin (Draelos, 2018; Kang et al., 2022; Lodén, 2003; Shindo et al., 2022). Moisturizers by preventing the trans-epidermal water loss restore the skin flexibility and emollients by inducing uniform exfoliation of the dead cells maintain the smoothness of the skin (Kang et al., 2022). Furthermore, skin water content can be restored through four different mechanisms: occlusion, humectancy, hydrophilic matrices and photoprotection (Draelos, 2018).

Moisturizers are thus commonly composed of oily, humectant and emollient components, which have different roles on the restoration of skin barrier (Kang et al., 2022; Lodén, 2003). Oily component forms an occlusive film on surface to suppress water loss; humectants help the stratum corneum to maintain moisture, lipids and other skin contents; and, the emollient component helps to maintain skin smoothness and softness (Gelmetti, 2009; Kang et al., 2022; Lodén, 2003). In addition, moisturizers can deliver ingredients to the skin surface (Draelos, 2018) and enhance the permeability of the skin to several substances (ižinauskas et al., 2017; M.-J. Kim et al., 2008), which can be valuable to efficacy of the treatment of skin diseases with therapeutic drugs.

Skin barrier restoration involves several steps after moisturizer application (Kang et al., 2022). Firstly, an oily and occlusive film on surface was created to prevent water loss; Secondly, the moisture distribution coefficient changes and the moisture diffuses from the dermis to the epidermis; and finally, lipids synthesis and intracellular lipids secretion occur to control water distribution in the epidermis. In addition, the emollient component also plays an important role in skin barrier restoration controlling the exfoliation of dead cells.

In summary, moisturizers and emollients hydrate the skin and smooth the stratum corneum, which can help relieve the clinical manifestations of dry skin. They can be used often to potentiate a topical treatment outcome, enhancing the efficacy of pharmaceuticals, and preventing disease exacerbation by relieving irritated skin. Furthermore, their routine use might also delay the need of pharmaceutical therapy.

02.
POSITIONING

2.1. Observation

Cosmetic products have long served as a complementary approach alongside medical treatments, supported by substantial scientific research and evidence-based studies, to enhance the well-being of those grappling with psoriasis and atopic dermatitis. These products are integral to holistic skincare routines, coupling appropriate cosmetic choices with effective skincare practices. By fostering a comprehensive understanding of triggers and aggravating factors for these conditions, a reduction in disease burden is achievable, subsequently elevating the overall quality of life for individuals affected.

Empowering those dealing with psoriasis and atopic dermatitis stands as a pivotal objective. This empowerment hinges on enabling informed decisions regarding the selection and utilization of cosmetic products. By catering to unique needs, sensitivities, and personal preferences, individuals gain agency over their skincare choices. This empowerment permits individuals to navigate their skincare journey confidently, ultimately fostering improved self-management and a greater sense of well-being.

2.2. Opportunity

The increasing global prevalence of psoriasis and atopic dermatitis presents a unique and timely opportunity for the cosmetic industry to make a significant impact. As these skin conditions become more widespread, there is a growing need for innovative and effective cosmetic products that cater to the specific needs and sensitivities of individuals dealing with psoriasis and atopic dermatitis. This trend opens the door for cosmetic companies to invest in research and development, focusing on formulations that provide relief, comfort, and improved skin health.

A considerable number of individuals suffering from psoriasis and atopic dermatitis struggle to find suitable skincare products that do not exacerbate their conditions. This gap in the market is an invitation for cosmetic companies to step in and create specialized products that not only address the unique challenges of these conditions but also enhance the skin›s natural barrier function. By utilizing advanced ingredients, technologies, and understanding of dermatological science, cosmetic companies have the potential to develop products that contribute to the management and improvement of these conditions, thereby fulfilling a pressing need within the market.

The current trend of personalized skincare solutions adds another layer of opportunity. Consumers are increasingly seeking products tailored to their individual needs and conditions. Developing cosmetic products that cater to different stages and severities of psoriasis and atopic dermatitis aligns perfectly with this trend. By offering products that are specifically designed for mild, moderate, or severe cases, companies can effectively cater to a wider range of patients, providing them with targeted solutions that address their unique challenges and requirements.

Furthermore, there is a distinct lack of comprehensive information available to both patients and healthcare professionals regarding suitable cosmetic products for psoriasis and atopic dermatitis. This knowledge gap poses a significant opportunity for your monograph. By thoroughly researching and presenting evidence-based insights, your work can serve as a bridge between the scientific community and those in need of reliable information. By filling this information void, your monograph can empower patients and healthcare professionals alike to make informed decisions when selecting cosmetic products, ultimately leading to more effective skincare routines and improved overall well-being for those affected by psoriasis and atopic dermatitis.

2.3. Outcome

KELO.CELL Psoris products provides novel formulations combining innovative products with the immense potential of stem cells bioactive factors. These innovative formulations will not only provide relief and comfort to sufferers but also foster a positive perception of the cosmetic industrys commitment to addressing real-world health concerns. Ultimately, the outcome of this endeavour will contribute to the ongoing dialogue between medical science and cosmetic innovation, propelling the skincare industry toward a more patient-centric and scientifically grounded future.

03. FORMULATION

3.1. Product description

The key ingredients in the KELO.CELL Psoris range are DermaClera™, Biophilics™, Vitamin F Forte™ and Turmeria-Zen[PCRF].

KELO.CELL Psoris Body Lotion is composed of the following ingredient list according to International Nomenclature of Cosmetic Ingredients (INCI)[1]: AQUA, DECYL OLEATE, OLUS OIL, CETEARYL ALCOHOL, BUTYLENE GLYCOL, C12-16 ALCOHOLS, HELIANTHUS ANNUUS SEED OIL, LAURETH-9, GLYCERIN, BETAINE, PERSEA GRATISSIMA OIL, SQUALANE, CYNANCHUM ATRATUM EXTRACT, CURCUMA LONGA ROOT EXTRACT, LINOLEIC ACID, LINOLENIC ACID, SODIUM PCA, HYDROGENATED LECITHIN, TOCOPHEROL, SACCHARIDE ISOMERATE, XANTHAN GUM, ETHYLHEXYLGLYCERIN, PALMITIC ACID, OLEIC ACID, TETRASODIUM GLUTAMATE DIACETATE, STEARIC ACID, CITRIC ACID, SODIUM CITRATE, SODIUM HYDROXIDE, PHENOXYETHANOL.

KELO.CELL Psoris Acute Balm has the following INCI ingredient list: DIMETHICONE, CAPRYLYL METHICONE, SQUALANE, PEG-12 DIMETHICONE/PPG-20 CROSSPOLYMER, DIMETHICONE CROSSPOLYMER, LAURETH-9, BUTYLENE GLYCOL, AQUA, LINOLEIC ACID, CURCUMA LONGA ROOT EXTRACT, CYNANCHUM ATRATUM EXTRACT, OLEIC ACID, PALMITIC ACID, GLYCERIN, STEARIC ACID, LINOLENIC ACID, TOCOPHEROL, CITRIC ACID.

KELO.CELL Psoris Body Lotion is available in a packaging size of 200 ml whereas KELO.CELL Psoris Acute Balm in a package of 30 g. Kelo.Cell Psoris Body Lotion is a moisturizer specially developed to take care of skin areas prone to scales, redness and itching and its daily use helps to prevent further breakouts and can help to extend the injury-free period. Kelo.Cell Psoris SOS Acute Balm is a silicone-based balm with extra moisturizing properties for the relief of skin prone to manifestations of psoriasis and atopic dermatitis such as plaques, scales and itching. Designed to improve the overall appearance of the affected skin areas.

[1] The International Nomenclature of Cosmetic Ingredients (INCI) is an international system for the standardised naming of cosmetic ingredients. The system was promulgated and adopted by regulatory authorities initially in the US, followed later by the EU and Japan, and therefore makes allowance for some variances in nomenclature (example, in the naming of botanicals and colourants). INCI names are mandated to appear on the outer product packaging of every personal care product. This enables consumers to identify any ingredients to which they may be allergic. INCI protocol requires that all ingredients in a product formulation must be listed. Those ingredients whose inclusion is greater than 1% of the formulation should be listed from highest to lowest percentage. Ingredients whose inclusion is less than 1% can be listed in any order.

3.2. List of ingredients

KELO.CELL Psoris ingredient listing is categorised based on the INCI names, function, and the relative amount in the mixture (Table 1).

Table 1.1 Formulation of KELO.CELL Psoris Body Lotion

RAW MATERIAL	RAW MATERIAL MANUFACTURER	INGREDIENTS (INCI DECLARATION)	FUNCTION IN THE COSMETIC PRODUCT	PROPORTION OF THE INGREDIENTS %	PROPORTION OF THE RAW MATERIAL %
VE-Wasser		AQUA	SOLVENTE	64.53	64.53
Cetiol V	BASF	DECYL OLEATE	SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT	6	6
Cegesoft PS 6	BASF	OLUS OIL	SKIN CONDITIONING - EMOLLIENT	99.9501	6
		TOCOPHEROL	ANTIOXIDANT, MASKING, SKIN CONDITIONING	0.0499	
DermaClera ECO Cynanchum Atratum Extract	Radiant	BUTYLENE GLYCOL	FRAGRANCE, HUMECTANT, SKIN CONDITIONING, SOLVENT, VISCOSITY CONTROLLING	50	5
		AQUA	SOLVENT	49.5	
		CYNANCHUM ATRATUM EXTRACT	SKIN CONDITIONING	0.5	
Biophilic H MB, Hydrogenated	Lucas Meyer	C1216 ALCOHOLS	ANTISTATIC, EMULSION STABILISING, SKIN CONDITIONING - EMOLLIENT, VISCOSITY CONTROLLING	58.33	4

RAW MATERIAL	RAW MATERIAL MANUFACTURER	INGREDIENTS (INCI DECLARATION)	FUNCTION IN THE COSMETIC PRODUCT	PROPORTION OF THE INGREDIENTS %	PROPORTION OF THE RAW MATERIAL %
Lecithin & C1216 Alcohols & Palmitic Acid		PALMITIC ACID	SKIN CONDITIONING - EMOLLIENT, SURFACTANT - EMULSIFYING	23.33	
		HYDROGEN ATED LECITHIN	SKIN CONDITIONING, SURFACTANT - EMULSIFYING	18.34	
Lanette O	BTC Europe GmbH	CETEARYL ALCOHOL	EMULSION STABILISING, OPACIFYING, VISCOSITY CONTROLLING, SKIN CONDITIONING - EMOLLIENT, SURFACTANT – FOAM BOOSTING, SURFACTANT - EMULSIFYING, SURFACTANT - CLEANSING	4	4
Sonnenblumenöl raffiniert extrahiert Ph.Eur. 10.0	Gustav Heess	HELIANTHUS ANNUUS SEED OIL	SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT, FRAGRANCE	2	2
Cremer GLYC Refined Glycerine 86,5%	Cremer Oleo GmbH	GLYCERIN	DENATURANT, HUMECTANT, SKIN CONDITIONING, SKIN PROTECTING, SOLVENT, VISCOSITY CONTROLLING, ORAL CARE, PERFUMING	86.6	1.5
		AQUA	SOLVENT	13.4	
Brij L9-LQ-(MV)	Croda	LAURETH-9	SURFACTANT - EMULSIFYING	1.5	1.5
Squalan raffiniert	Henry Lamotte Oils GmbH	SQUALANE	REFATTING, SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT	1	1
Avocadoöl raffiniert	Henry Lamotte Oils GmbH	PERSEA GRATISSIMA OIL	SKIN CONDITIONING	1	1
Genencare OSMS BH	Danisco	BETAINE	ANTISTATIC, HUMECTANT, SKIN CONDITIONING, VISCOSITY CONTROLLING	1	1
Euxyl PE 9010	Schülke	PHENOXYETHANOL	PRESERVATIVE, ANTIMICROBIAL	90.1	1

RAW MATERIAL	RAW MATERIAL MANUFACTURER	INGREDIENTS (INCI DECLARATION)	FUNCTION IN THE COSMETIC PRODUCT	PROPORTION OF THE INGREDIENTS %	PROPORTION OF THE RAW MATERIAL %
		ETHYLHEXY LGLYCERIN	DEODORANT, SKIN CONDITIONING	9.9	
Vitamin F forte	CLR	LINOLEIC ACID	ANTISTATIC, CLEANSING, SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT, SURFACTANT	<99	0.5
		LINOLEIC ACID	ANTISTATIC, CLEANSING, SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT, SURFACTANT	0.1 - 1	
Pentavitin ®	DSM Nutritional Products ltd.	SACCHARIDE ISOMERATE	HUMECTANT	50 - 100	0.5
		AQUA	SOLVENT	25 - 50	
		CITRIC ACID	BUFFERING, CHELATING, MASKING	0.1 - 1	
		SODIUM CITRATE	BUFFERING, CHELATING, FRAGRANCE	0.1 - 1	
Keltrol CG-SFT V	CPKelco	XANTHAN GUM	BINDING, EMULSION STABILISING, GEL FORMING, SKIN CONDITIONING, VISCOSITY CONTROLLING, SURFACTANT - EMULSIFYING, SURFACTANT - CLEANSING	0.2	0.2
Ajidew NL-50	Rahn	SODIUM PCA	ANTISTATIC, HAIR CONDITIONING, HUMECTANT, SKIN CONDITIONING	50	0.1
		AQUA	SOLVENT	50	

RAW MATERIAL	RAW MATERIAL MANUFACTURER	INGREDIENTS (INCI DECLARATION)	FUNCTION IN THE COSMETIC PRODUCT	PROPORTION OF THE INGREDIENTS %	PROPORTION OF THE RAW MATERIAL %
TURMERIA ZEN-CPRCF	Vytrus Biotech, S.L.	CURCUMA LONGA ROOT EXTRACT	FRAGRANCE, PERFUMING	49 - 51	0.1
		GLYCERIN	DENATURANT, HUMECTANT, SKIN CONDITIONING, SKIN PROTECTING, SOLVENT, VISCOSITY CONTROLLING, ORAL CARE, PERFUMING	48 - 49	
		CITRIC ACID	BUFFERING, CHELATING, MASKING	44958	
Dissolvine GL-47-S	Nouryon Functional Chemicals B.V.	AQUA	SOLVENT	52.15	0.05
		TETRASODIUM GLUTAMATE DIACETATE	CHELATING	47	
		SODIUM HYDROXIDE	BUFFERING, DENATURANT	0.85	
Natronlauge 10%ig, Sodium Hydroxide 10%ig (reinst)	SanderStrothmann	AQUA	SOLVENT	90	0.02
		SODIUM HYDROXIDE	BUFFERING, DENATURANT	10	

Table 1.2 Formulation of KELO.CELL Psoris Body Lotion

RAW MATERIAL	RAW MATERIAL MANUFACTURER	INGREDIENTS (INCI DECLARATION)	FUNCTION IN THE COSMETIC PRODUCT	PROPORTION OF THE INGREDIENTS %	PROPORTION OF THE RAW MATERIAL %
DOWSILTM EL-9241 DM Silicone Elastomer Blend	Dow	DIMETHICONE	ANTIFOAMING, SKIN CONDITIONING, SKIN CONDITIONING, EMOLLIENT, SKIN PROTECTING	80 - 90	43.4
		DIMETHICONE CROSSPOLYMER	EMULSION STABILISING, VISCOSITY CONTROLLING	10 - 20	
		CYCLOHEXASILOXANE	SOLVENT, SKIN CONDITIONING, EMOLLIENT, SKIN CONDITIONING	<0.45	
		OCTAMETHYLCYCLO-TETRASILOXANE; D4*	-- not assigned --	<0.1	
		CYCLOPENTASILOXANE*	SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT, SOLVENT	<0.1	
DOWSILTM EL-7040 Hydro Elastomer Blend	Dow	CAPRYLYL METHICONE	SKIN CONDITIONING	75 - 85	30
		PEG-12 DIMETHICONE/ PPG-20 CROSSPOLYMER	-- not assigned --	15 - 25	
		TOCOPHEROL	ANTIOXIDANT, MASKING, SKIN CONDITIONING	<0.1	
Squalan raffiniert	Henry Lamotte Oils GmbH	SQUALANE	REFATTING, SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT	10	10
XIAMETERTM PMX-200 Silicone Fluid 1.5 cSt	Dow	DIMETHICONE	ANTIFOAMING, SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT, SKIN PROTECTING	100	7
		OCTAMETHYLCYCLO-TETRASILOXANE; D4	-- not assigned --	0.0998	

RAW MATERIAL	RAW MATERIAL MANUFACTURER	INGREDIENTS (INCI DECLARATION)	FUNCTION IN THE COSMETIC PRODUCT	PROPORTION OF THE INGREDIENTS %	PROPORTION OF THE RAW MATERIAL %
XIAMETERTM PMX200- Silicone Fluid 1.5 cSt	Dow	CYCLOPENTASILOXANE	SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT, SOLVENT	0.0998	7
DermaClera ECO Cynanchum Atratum Extract	Radiant	BUTYLENE GLYCOL	FRAGRANCE, HUMECTANT, SKIN CONDITIONING,	50	5
			SOLVENT, VISCOSITY CONTROLLING		
		AQUA	SOLVENT	49.5	
		CYNANCHUM ATRATUM EXTRACT	SKIN CONDITIONING	0.5	
Brij L-9LQ-(MV)	Croda	LAURETH-9	SURFACTANT - EMULSIFYING	3	3
Vitamin F forte	CLR	LINOLEIC ACID	ANTISTATIC, CLEANSING, SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT, SURFACTANT	<99	1.5
		LINOLENIC ACID	ANTISTATIC, CLEANSING, PERFUMING, SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT, SURFACTANT - CLEANSING	0.1 - 1	
TURMERIA ZEN-C PRCF	Vytrus Biotech	CURCUMA LONGA ROOT EXTRACT	FRAGRANCE, PERFUMING	49 - 51	0.1
		GLYCERIN	DENATURANT, HUMECTANT, SKIN CONDITIONING, SKIN PROTECTING, SOLVENT, VISCOSITY CONTROLLING, PERFUMING	48 - 49	
		CITRIC ACID	BUFFERING, CHELATING, MASKING	1 - 2	

RAW MATERIAL	RAW MATERIAL MANUFACTURER	INGREDIENTS (INCI DECLARATION)	FUNCTION IN THE COSMETIC PRODUCT	PROPORTION OF THE INGREDIENTS %	PROPORTION OF THE RAW MATERIAL %
Lecithin & C1216 Alcohols & Palmitic Acid		PALMITIC ACID	SKIN CONDITIONING - EMOLLIENT, SURFACTANT - EMULSIFYING	23.33	
		HYDROGEN ATED LECITHIN	SKIN CONDITIONING, SURFACTANT - EMULSIFYING	18.34	
Lanette O	BTC Europe GmbH	CETEARYL ALCOHOL	EMULSION STABILISING, OPACIFYING, VISCOSITY CONTROLLING, SKIN CONDITIONING - EMOLLIENT, SURFACTANT – FOAM BOOSTING, SURFACTANT - EMULSIFYING, SURFACTANT - CLEANSING	4	4
Sonnenblumenöl raffiniert extrahiert Ph.Eur. 10.0	Gustav Heess	HELIANTHUS ANNUUS SEED OIL	SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT, FRAGRANCE	2	2
Cremer GLYC Refined Glycerine 86,5%	Cremer Oleo GmbH	GLYCERIN	DENATURANT, HUMECTANT, SKIN CONDITIONING, SKIN PROTECTING, SOLVENT, VISCOSITY CONTROLLING, ORAL CARE, PERFUMING	86.6	1.5
		AQUA	SOLVENT	13.4	
Brij L9-LQ-(MV)	Croda	LAURETH-9	SURFACTANT - EMULSIFYING	1.5	1.5
Squalan raffiniert	Henry Lamotte Oils GmbH	SQUALANE	REFATTING, SKIN CONDITIONING, SKIN CONDITIONING - EMOLLIENT	1	1
Avocadoöl raffiniert	Henry Lamotte Oils GmbH	PERSEA GRATISSIMA OIL	SKIN CONDITIONING	1	1
Genencare OSMS BH	Danisco	BETAINE	ANTISTATIC, HUMECTANT, SKIN CONDITIONING, VISCOSITY CONTROLLING	1	1
Euxyl PE 9010	Schülke	PHENOXYETHANOL	PRESERVATIVE, ANTIMICROBIAL	90.1	1

3.2.1. Derma-Clera™

This ingredient is mainly composed of Cynanchum Atratum Extract which is the extract of the whole plant Cynanchum atratum Apocynaceae. Cynanchi atrati Radix is famous for its medicinal value of clearing away heat, relieving drenching, detoxifying and treating abscesses. It was commonly used in some Asian countries for the treatment of fever, vasoconstrictive syncope, lymphangitis and other diseases, due to the effect of C21 steroidal saponins, acetophenone, alkaloids (Zhang et al., 2022).

When in Derma-CleraTM, a patent formulation, this ingredient promotes the production of structural skin proteins such as keratins (Figure 1) and has an anti-irritation action (Figure 2 and Figure 3), helping to improve the appearance of the skin.

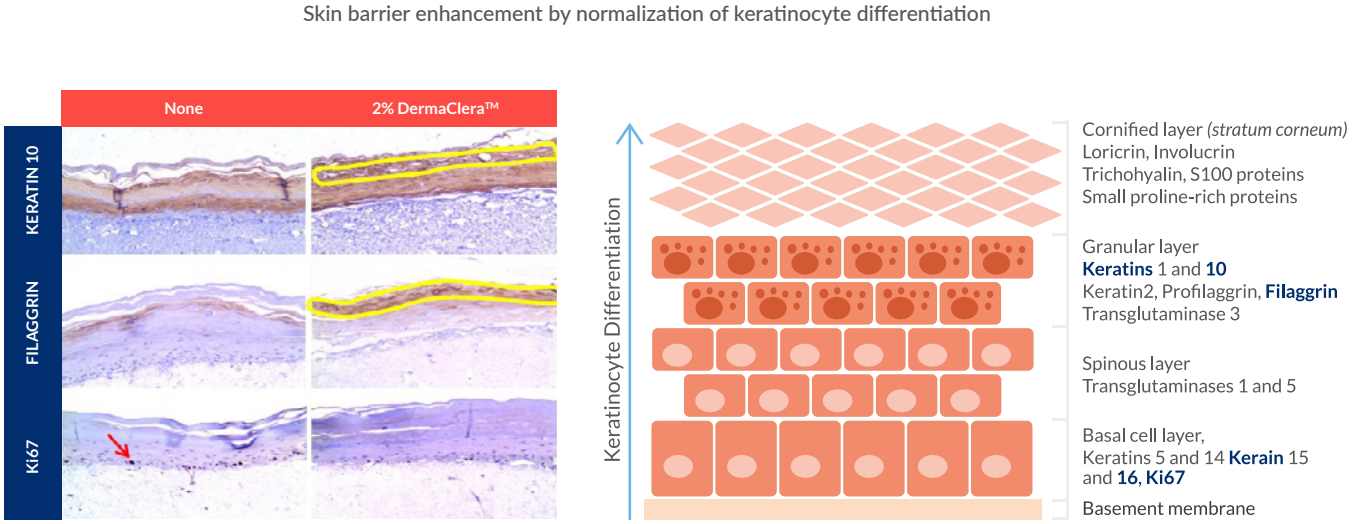
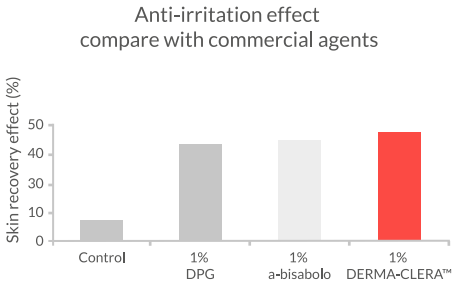
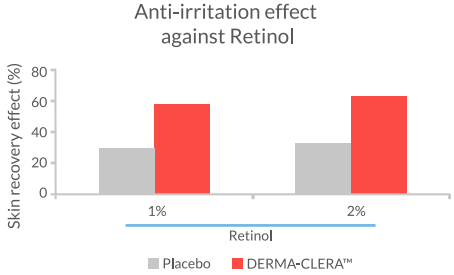


Figure 1. 2% DERMA-CLERA™ plays an important role in the regulation of skin barrier function by increasing the expression of Keratin10 and Filaggrin and by decreasing the expression of Keratin16 and Ki67. Data on file provided by Radiant (manufacturer of Derma-Clera™).

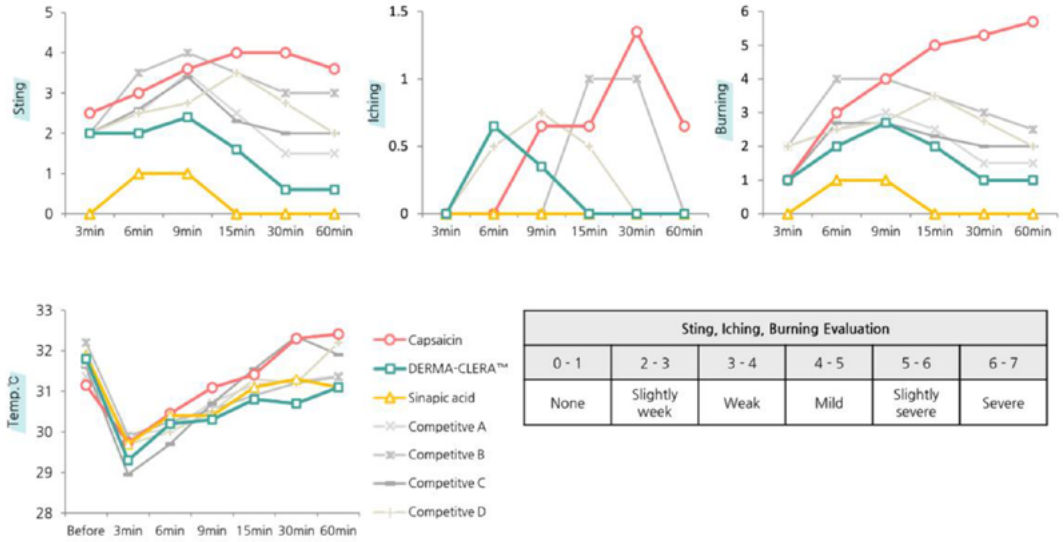




Anti-irritation effect
against Retinol

Erythema index	DERMA-CLERA™		Placebo
	1%	2%	
Control		164.23 ± 24.14	
Retinol treated (1%)		387.45 ± 30.47	
After 24h	313.90 ± 23.08	301.38 ± 14.80	340.94 ± 21.99
After 48h	258.22 ± 17.92	247.20 ± 43.92	327.23 ± 35.98
Skin recovery effect (%)	**58,6**	**63,1**	**28,1**

Figure 2. DERMA-CLERA™ has an anti-irritation effect comparable effect to α-bisabolol, DPG (Dipotassium Glycyrrhizinate) and has a skin recovery effect. Data on file provided by Radiant (manufacturer of Derma-Clera™).



Sting, Iching, Burning Evaluation					
0 - 1	2 - 3	3 - 4	4 - 5	5 - 6	6 - 7
None	Slightly week	Weak	Mild	Slightly severe	Severe

Figure 3. DERMA-CLERATM confirmed the excellent anti-skin irritation effects. After capsaicin 0.075% was applied to the skin to induce chemical stimulation, treatment with 2% of each sample and Sinapic acid (10 ppm) showed that the stimulation was alleviated.

Moreover, an ex-vivo study and a clinical study showed the efficacy of the active ingredient in psoriatic skin. In a 3D skin model of psoriasis caused by imiquimod (IMQ), DERMA-CLERATM reduced the expression of inflammatory factors induced by Imiquimod and reduced the epidermal thickness of psoriasis skin model (Figure 4).

In addition, the application twice a day for 4 weeks of a test cream with a base cream formula with 5% DERMA-CLERATM demonstrated good clinical results (Figure 5). Because of this, it is to assume that the daily use of the product can prevent further breakouts.

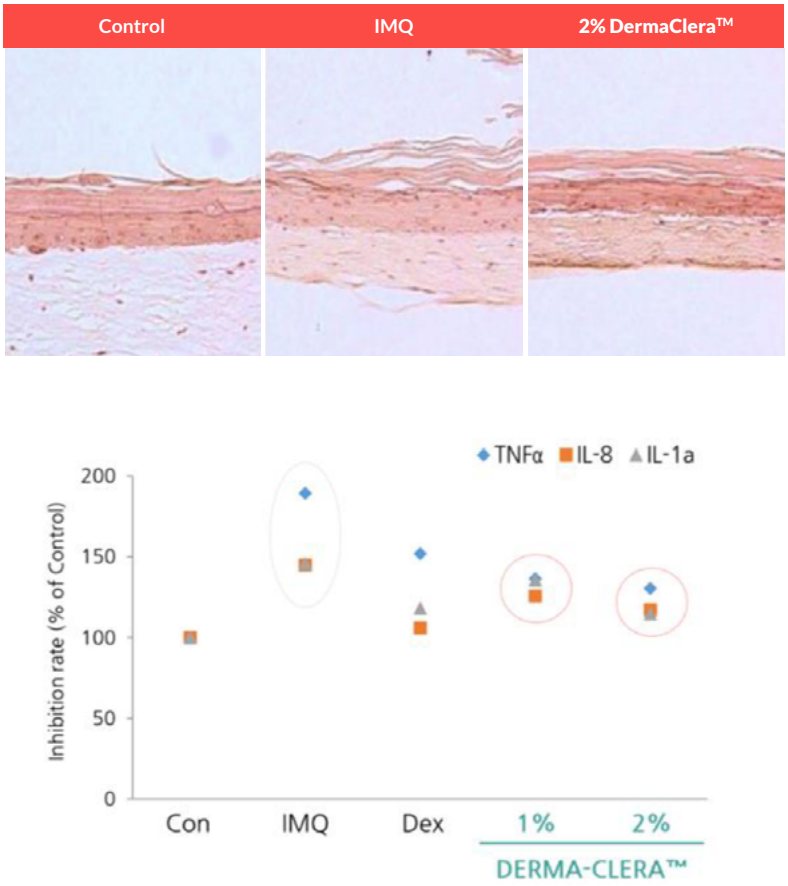


Figure 4. Ex-vivo results in a 3D skin model of psoriatic skin. Data on file provided by Radiant (manufacturer of Derma-CleraTM).

Figure 5. Clinical study results before and after application of 5% DermaClera cream formulation. Data on file provided by Radiant (manufacturer of Derma-Clera™).

3.2.2. Vitamin F Forte

Fatty acids are a fundamental component of triglycerides, and they can be either saturated or unsaturated. They have a hydrophilic carboxyl group "head" and a hydrophobic hydrocarbon chain "tail". While saturated fatty acids have only a single bond between neighbouring carbons in the hydrocarbon chain and are saturated of hydrogens, unsaturated fatty acids have a double bond in hydrocarbon chain. Examples of the saturated are the stearic and palmitic acids (Čižinauskas et al., 2017; Huang et al., 2018). Unsaturated fatty acids include the essential polyunsaturated fatty acids omega-3s and omega-6s, which are not produced through organism's metabolism and need to be obtained by external sources, such as diet, supplements, or topical application. Other examples of unsaturated are the oleic, palmitoleic, linoleic and linolenic acids (Čižinauskas et al., 2017; Huang et al., 2018).

It is known that fatty acids play an important role in several cellular processes, such as intracellular signalling, inflammatory and immune responses (Nicolaou, 2013). And, it is also known that they are also essential for either for the structure as for the maintenance of homeostasis of the skin (Nicolaou, 2013; M. Yang et al., 2020) as well they are known as chemical penetration enhancers (Čižinauskas et al., 2017; M.-J. Kim et al., 2008). Several studies focusing on skin penetration of model drug substances suggested that unsaturated fatty acids have a greater potential when compared to saturated (Čižinauskas et al., 2017). Skin health is thus directly affected by fatty acids as they influence fluidity of cell membranes which are responsible for regulating the entry and exit of molecules into cells (M.-J. Kim et al., 2008; Wright, 1991). In this context, the benefits of fatty acids are several: improving the appearance of aged and tired-looking skin, providing moisturization, protection against free radical and promoting the normal cell function.

Linoleic acid is one of the most abundant polyunsaturated fatty acid in stratum corneum of the skin reduce the transepidermal water loss (M. Yang et al., 2020). This fatty acid, improves the appearance and smoothness of the skin, increasing hydration specially when combined with occlusive moisturizers (Nolan and Marmur, 2012). Furthermore, the linoleic acid may decrease the melanin synthesis and the tyrosinase activity, being a valuable substance to the treatment of pigmentation (Ando et al., 1998; Kanlayavattanakul and Lourith, 2018). Furthermore, a double-blind clinical study in patients with mild-to-moderate atopic dermatitis showed an improvement of skin barrier function by decreasing erythema, pruritus and transepidermal water loss in the patients treated with □-linoleic acid-enriched borage oil incorporated in t-shirts (Kanehara et al., 2007). Other clinical studies showed that products with linoleic acid combined with ceramides and linolenic acid can be used to treat and reduce symptoms of several skin diseases by decreasing inflammation, improving the pruritus and psoriasis area and index scores decreasing the transepidermal water loss, improving the permeability of epidermic barrier and the hydration of stratum corneum and also by improving the capability to regenerate the epithelium in wounds helping healing (Guidoni et al., 2019; Liu et al., 2015; Q. Yang et al., 2019).

Vitamin F Forte consists of essential fatty acids (□-6 fatty acids) obtained from safflower oil in their natural, biologically active form and contains more than 99% of linoleic acid. Linoleic acid is important for an intact lipid barrier and its physiological function and contains natural tocopherols. It is able to repair disturbed lipid barrier and is a gentle moisturizing emollient. Studies show that 3% Vitamin F forte decreased transepidermal water loss (Figure 6) and increased skin smoothness (Figure 7).

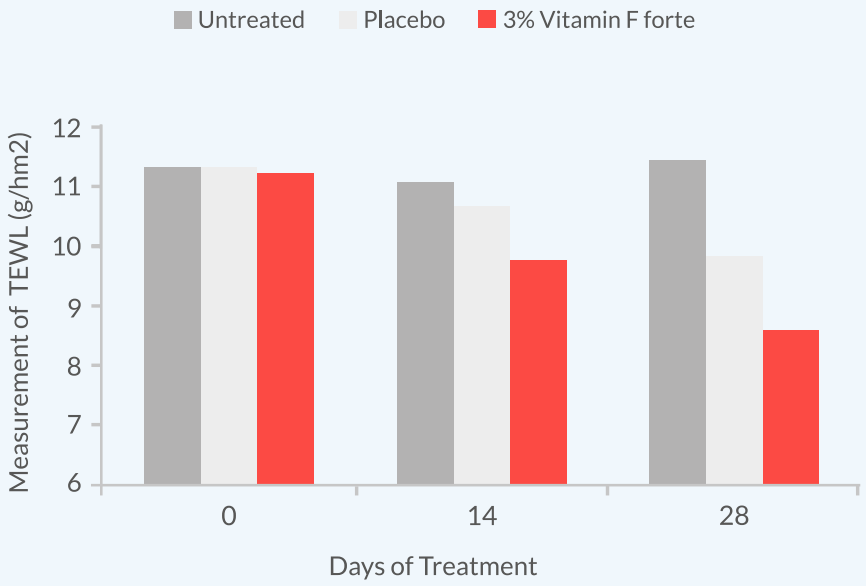


Figure 6. Measurement of TEWL (g/hm2) relative to day 0. These results were obtained after the test product was applied to the inner side of the forearms, twice daily. The test panel consisted of 10 females and 10 males with dry atopic skin in the age range of 20 to 58 years. The study had the duration of 4 weeks. Data on file provided by CLR - Chemisches Laboratorium Dr. Kurt Richter GmbH (manufacturer of Vitamin F forte).

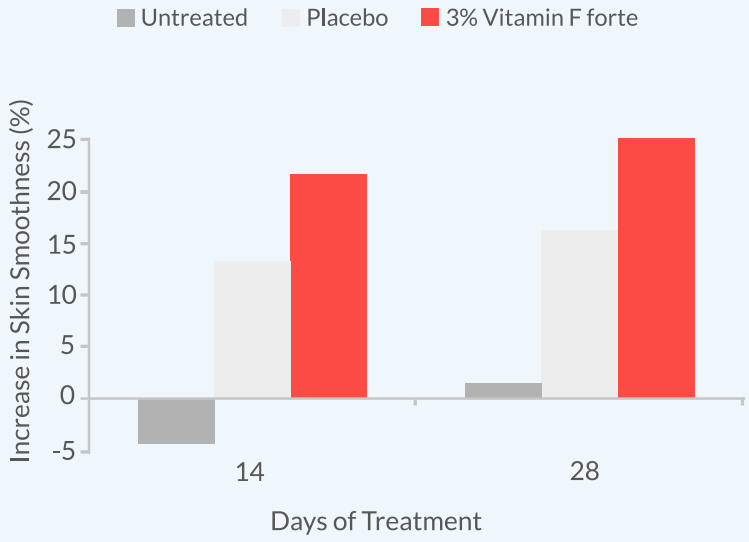


Figure 7. Increase in Skin Smoothness (%). Twice daily, the test product was applied to the inner side of the forearms. The test panel consisted of 10 females and 10 males with dry atopic skin in the age range of 20 to 58 years. Duration of the study was 4 weeks. Data on file provided by CLR - Chemisches Laboratorium Dr. Kurt Richter GmbH (manufacturer of Vitamin F forte).

3.2.3. Biophilic™

This ingredient is composed of C12-16 ALCOHOLS, PALMITIC ACID, and hydrogenated lecithin.

On one hand, C12-C16 alcohols act as an emulsion stabilizer and viscosity increasing agent, allowing products to stay spreadable and creamy. On the other hand, palmitic acid is the most common saturated fatty acid found in animals, plants and microorganisms. In humans, this fatty acid is naturally found in whole body, including in the stratum corneum of the skin, and has produced endogenously from other fatty acids, amino acids or when an excess of carbohydrates that are converted into palmitic acid and stored as fat (Carta et al., 2017). It is a basis for many palmitate ingredients used in cosmetic formulations, which help to improve products texture acting as an emulsifier and helping to trap moisture in the skin. In cosmetics, acts as a surfactant helping the mixture of the oil-based and the water-based ingredients by lowering the surface tension between both; also, works as a cleansing agent of the skin. Other function of palmitic acid in cosmetics is to reduce the clear or transparent appearance of the products, acting as an opacifying agent, which in face make-up products allows to hide blemishes. Furthermore, palmitic acid like other fatty acids have the capability to enhance permeability of skin. In addition, it works as an emollient to maintain a healthy skin, softening it and trapping moisture which increases skin hydration. An in vitro study with several fatty acids including palmitic acid to evaluate their anti-microbial and anti-inflammatory properties suggested that palmitic acid they not have effects on inhibiting bacteria, and they decrease the expression of the pro-inflammatory cytokines TNF- and IL-12 (Chuah et al., 2018). Usually patients with atopic dermatitis have reduced levels of palmitic acid and increased colonization of the opportunistic pathogen Staphylococcus aureus (Cartron et al., 2014). The study of Cartron et al. (2014) highlights the potential of palmitic acid as a novel therapy to treat both topic and systemic S. aureus infections. Thus, its inclusion on several cosmetic formulations is of upmost relevance, including on products that can be used concomitantly with therapeutic drugs for this type of infections and skin conditions.

Additionally, hydrogenated lecithin is a phospholipid and is an occlusive moisturizer. The occlusive moisturizers work by placing a water impermeable barrier on skin surface (Draelos, 2018). In cosmetics, usually they are combined with other types of moisturizers to achieve the main role which is prevent water loss until the barrier reparation. Several authors have also proposed phospholipids as penetration enhancers which can be helpful on the topical treatment of several diseases enhancing the absorption of the drug (Kirjavainen et al., 1999; Paolino et al., 2002).

Biophilic™ has a rich innovative texture able to hamper water loss, smoothing skin texture. When applied on the skin, lamellar structure forms a thin film which prevents water loss or acts as a reservoir of water and biologically active molecules which are slowly released to the stratum corneum. In fact, several authors have proposed that the constituents of this ingredient as penetration enhancers which can be helpful on the topical treatment of several diseases enhancing the absorption of the drug (Kirjavainen et al., 1999; Paolino et al., 2002).

When applied on the skin, Biophilic™ forms a thin film which prevents water loss or acts as a reservoir of water and biologically active molecules which are slowly released to the stratum corneum. In addition, BIOPHILIC™ helps to restore cutaneous barrier of damaged skin (Figure 8).

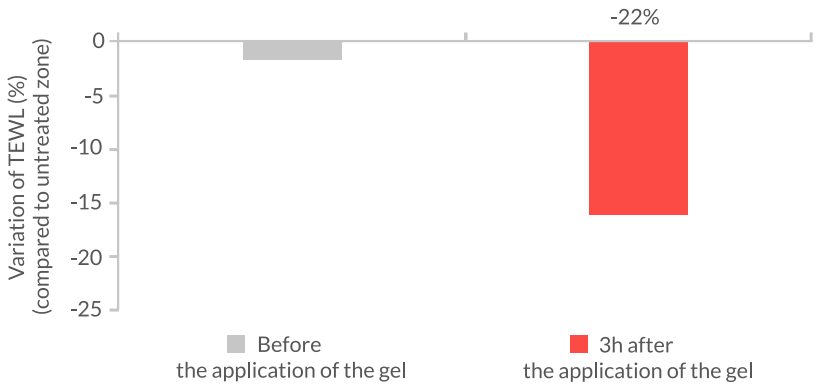


Figure 8. BIOPHILIC™ helps to restore cutaneous barrier of damaged skin. Results obtained after application of 5% BIOPHILIC™ gel on the forearms of 6 volunteers after washing with a 10% solution of sodium lauryl sulfate. Data on file provided by Lucas Meyer (manufacturer of BIOPHILICTM).

3.2.4. Curcuma Longa (Turmeric) Root Extract

Curcuma Longa (Turmeric) root extract (Turmeria Zen-CPRCF) represents the concentrated metabolome of totipotent cells from *Curcuma Longa* rhizome (Data on file provided by Vytrus Biotech manufacturer.). *Curcuma Longa* , the Turmeric, is a tropical and subtropical plant native to the Indian subcontinent and Southeast Asia characterized by the existence of very ramified, cylindrical and orange rhizomes, modified roots that act as storage and resistance organs (Baumann, 2014).

Stem cells extract have potent antioxidant and active components, however they cannot act in the same way as the live stem cells (Trehan et al., 2017). Nevertheless, evidence compiled over the last several decades reveals that, for instance, *Curcuma Longa* root extract exhibits a broad array of biologic activities, such as anti-inflammatory, anticarcinogenic, antioxidant, antimicrobial, and wound healing (Akbik et al., 2014; Maheshwari et al., 2006; Phan et al., 2001).

These effects are mediated through the regulation of numerous signalling pathways, transcription factors, growth factors, inflammatory cytokines, protein kinases, adhesion molecules, apoptotic genes, angiogenesis regulators, and enzymes, such as cyclooxygenase (COX) and glutathione S-transferases.

ANTI-INFLAMMATORY	ANTIOXIDANT	OTHER EFFECTS
↓ NF-κβ	↓ Free radicals	↑ Collagen content
↓ TNF-α	↓ DNA damage	↑ Facial elasticity
↓ MMP-1 and MMP-3	↓ Lipid peroxidation	↓ Skin fungal
↓ IL1-β, IL-6, IL8	↑ GSH	
↓ COX-2		

Figure 9. Summary of some of the pathways related to the therapeutic effects (anti-inflammatory and antioxidant) of Curcuma in the skin. COX: cyclooxygenase; GSH: glutathione; IL: interleukin; MMP, matrix metalloproteinase; NF-kB, nuclear factor kappa B; TNF-a, tumour necrosis factor-alpha. Adapted from [70].

Specific investigation was conducted by the manufacturer *Vytrus Biotech* to assess the potential of the concentrated metabolome of totipotent cells from *Curcuma longa* rhizome (TURMERIA ZEN^{PRCF}).

At 0.1 µg/mL, the active metabolites extracted from *Curcuma longa* rhizome totipotent stem cells completely restored the basal levels of TNF-a and IL-8 in an activated human macrophages cell line (THP-1). The observed event was very pronounced in all doses tested (0.1, 1 and 20 µg/mL), reaching up to 97% decreased for TNF-a and up to 78% in IL-8 cytokines levels (Figure 10).

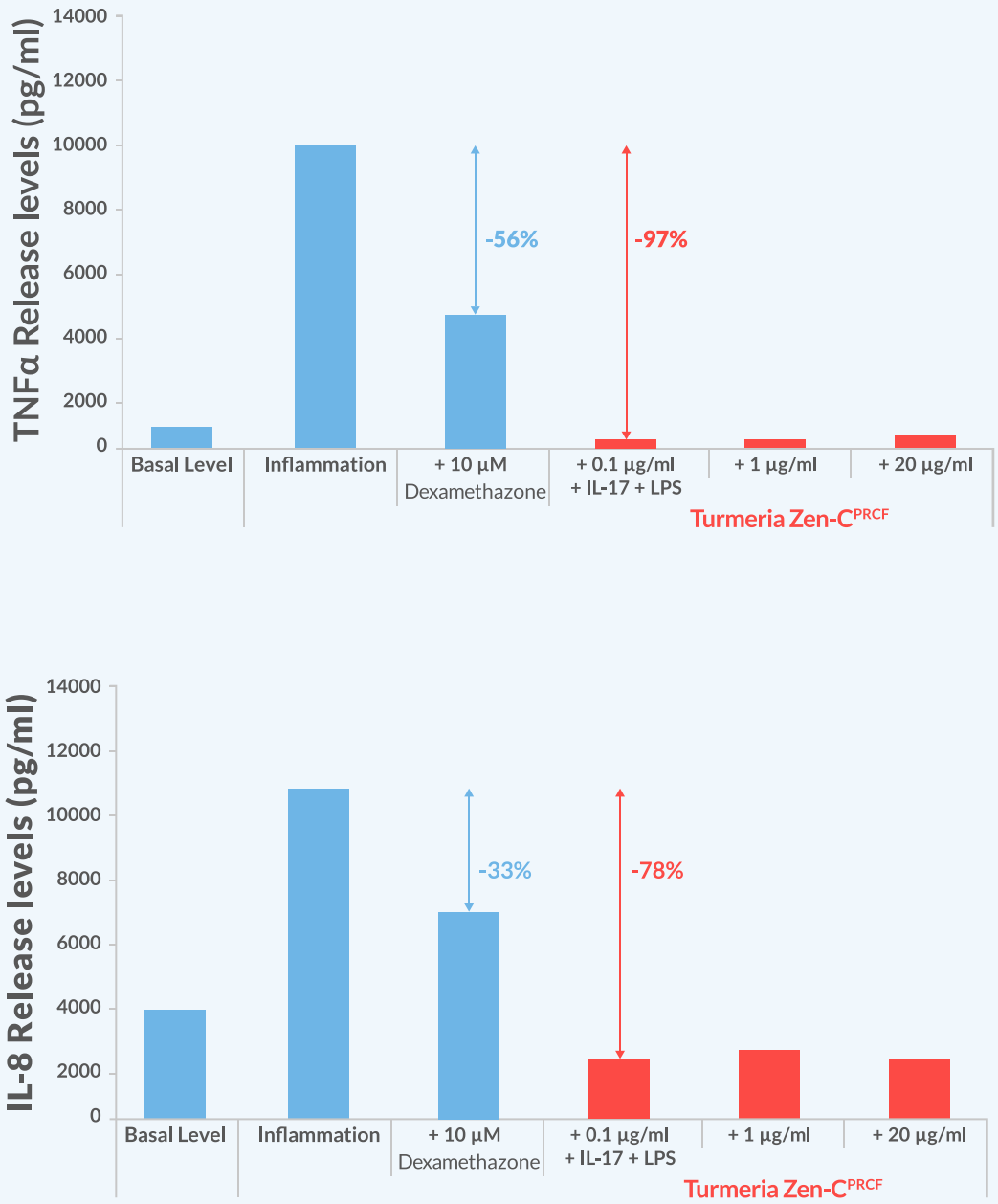


Figure 10. Anti-inflammatory activity of TURMERIA ZEN^{PRCF}. THP-1 macrophages were with IL-17 (3 ng/mL) and LPS (10 µg/mL). The levels of TNF-a and IL-8 were measured. Dexamethasone (DEX) (10 µM) was used as negative control. TNF-a and IL-8 levels were quantified from cell culture supernatants by ELISA.

In vivo, a cream formulation containing 1% of TURMERIA ZEN^{PRCF} increased skin hydration (Figure 11). Face application twice daily for 28 days of cream formulation containing 1% of TURMERIA ZEN^{PRCF} in a single blind placebo-controlled study significantly increase the average epidermal hydration rate. The participants enrolled were selected through a State-trait Anxiety Inventory questionnaire and cortisol test in saliva. At the end of the study, the mean hydration rate increased 13% corresponding to 4.3-fold hydration higher than placebo.

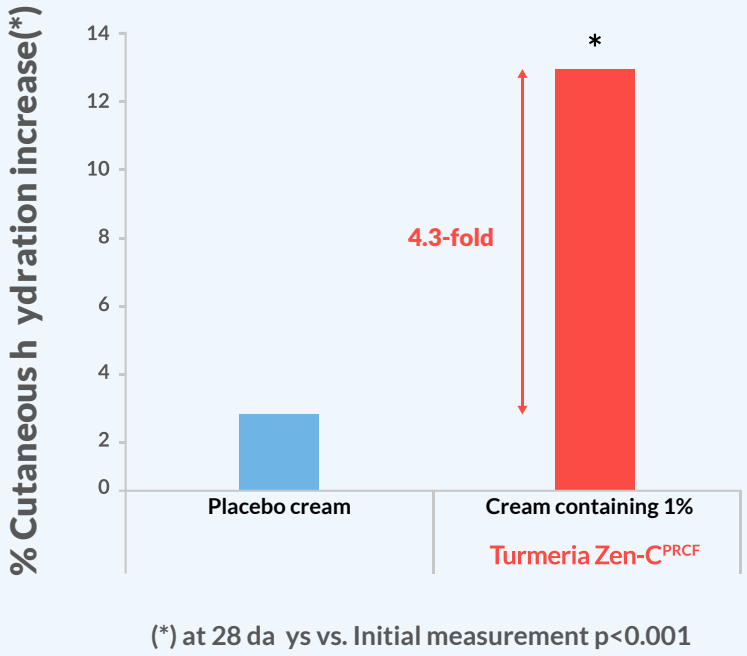


Figure 11. Skin hydration effect after 28 days of twice daily application of a cream containing 1% of TURMERIA ZEN^{PRCF}.

3.2.5. Polidocanol (Laureth-9)

Polidocanol is a synthetic long-chain fatty alcohol and can be used as a sclerosing agent but can also be used externally against itching (Salgueiro et al., 2022; Simon et al., 2018). The clinical study of Khurana and Mathachan (2022) in patients with pyogenic granulomas, which are vascular nodules and lesions on skin, showed that systemic treatment with polidocanol (1% solution) until a maximum of three sittings resulted in an highly effective, safe and cost-effective sclerosant for the treatment of this condition. Li et al. (2021) in a clinical study in children also showed the efficacy of polidocanol to treat the pyogenic granulomas. In other hand, in a clinical study with two emollients containing lactic acid, refined almond oil with or without polidocanol confirmed the efficacy of both to substantially reduce itching and restore the skin barrier integrity (Simon et al., 2018). Thus, authors considered both emollients as a valuable approach to treat xerotic eczema, including atopic dermatitis. A clinical study using healthy volunteers showed that polidocanol is a clear antipruritus agent when the PAR-2 dependent itch pathways, which are associated with atopic dermatitis, are triggered (Hawro et al., 2014).

3.2.6. Squalane

Squalane, a natural oil derived from sources like olives or sugarcane, can offer valuable benefits when included in a cosmetic formulation designed to help relieve skin symptoms associated with psoriasis (Wolosik et al., 2013). While it›s important to note that squalane is not a primary treatment for psoriasis, it can play a supportive role in alleviating discomfort and improving the overall condition of psoriasis-prone skin.

Psoriasis often leads to dry, flaky, and irritated skin. Squalane›s lightweight and non-greasy texture makes it an excellent moisturizer. It helps to replenish and lock in moisture, easing the dryness commonly experienced by individuals with psoriasis (Safety Assessment, 2019).

Squalane can also help fortify this barrier, enhancing the skin›s ability to defend itself against external aggressors and reduce potential triggers. The soothing properties of squalane can help calm the itchiness and discomfort that often accompany psoriasis (Sethi et al., 2016). By providing a protective layer, squalane can reduce friction and alleviate irritation caused by clothing or movement. Squalane›s emollient nature contributes to a smoother skin texture. This can be particularly beneficial for individuals with psoriasis, as it can help minimize the appearance of scales and promote a more even skin surface. Some research suggests that squalane may possess anti-inflammatory properties (Hunag et al., 2013). While it might not replace prescribed anti-inflammatory treatments, its inclusion in a formulation could offer additional relief from inflammation associated with psoriasis.

Finally, squalane is generally well-tolerated by different skin types, including sensitive skin. This makes it a viable option for individuals with psoriasis-prone skin who may be more sensitive to certain ingredients.

3.2.7. Silicone polymers

Silicone polymers, only present in Kelo.Cell Psoris Acute Balm, are commonly used in cosmetic formulations for their unique properties, such as their smooth texture, water-resistant nature, and ability to create a protective barrier on the skin. Silicone polymers can form a barrier on the skin›s surface that helps to lock in moisture. This barrier can be particularly beneficial for psoriasis-prone skin, which tends to be dry and sensitive (Mijalika et al., 2022). Silicone polymers can enhance the texture of cosmetic products, making them feel smoother on the skin. This could be helpful in products designed for individuals with psoriasis, as it can contribute to a more comfortable application. The barrier created by silicone polymers may provide a level of protection for the skin against external irritants and environmental factors that could exacerbate psoriasis symptoms (Kulawik-Pióro et al., 2021).

Silicone polymers can offer a silky and non-greasy feel on the skin, which could be appreciated by individuals with psoriasis who may experience discomfort from certain textures.

3.3. Safety assessment

KELO.CELL Psoris Body Lotion contains no raw material which is registered on the negative lists to be considered of the European Commission. A health risk in case of intended and predictable use can be excluded on account of our considerations. This cosmetic product does not contain any ingredients in quantities requiring a warning note and/or conditions of use according to the Annexes III to VI of the European Cosmetic Regulation (EC) 1223/2009, therefore it is considered appropriate to use under the predicted on the labelling.

A similar conclusion was performed after safety assessment of Kelo.Cell Psoris Acute Balm.

04.
INDICATIONS, CLAIMS AND PRODUCT STATEMENTS

4. INDICATIONS, CLAIMS AND PRODUCT STATEMENTS

4.1. Current product positioning

The indications, claims and activity statements for KELO.CELL Psoris were extracted verbatim from the supplied artwork documents. Considering the product composition and the reviewed scientific literature on section 3, a detailed analysis is presented:

i) Intention of use

Kelo.Cell Psoris Body Lotion

Kelo.Cell Psoris Body Lotion is a moisturizer specially developed to take care of skin areas prone to scales, redness and itching. Its daily use helps to prevent further breakouts and can help to extend the injury-free period.

Kelo.Cell Psoris Acute Balm

Kelo.Cell Psoris SOS Acute Balm is a silicone-based balm with extra moisturizing properties for the relief of skin prone to manifestations of psoriasis and atopic dermatitis such as plaques, scales and itching. Designed to improve the overall appearance of the affected skin areas.

Given the previous literature and scientific data present, these intentions of use are aligned with the ingredients in the formula.

ii) Claims/Product Statements

Kelo.Cell Psoris Body Lotion

CLAIMS/ PRODUCT STATEMENT	ANALYSIS	REFERENCES
Takes care of the whole-body skin, particularly the skin areas prone to scales, redness and itching.	All of the incorporated ingredients are reported to reduce the patient's subjective sensations of discomfort and itching. Polidocanol, DermaClera™ among others are examples of that. This care is also a result of increased hydration of stratum corneum and restoration of skin barrier function	Data on file from the manufacturers, Kulawik-Pióro et al., 2021
Its daily use helps to prevent further breakouts and can help to extend the injury-free period.	DermaClera™ has an Ex- Vivo study and a clinical study, which shows the efficacy of the active ingredient at Psoriasis skin. Because of this, it is to assume that the daily use of the product can prevent further breakouts.	Data on file provided by Radiant
Restores the skin´s natural balance, smoothing and softening it. Deeply hydrates and nourishes the skin, ensuring a comfortable feeling.	The natural lamellar emulsifier BIOPHILIC, not only mimics skin structure for a biocompatibility and tolerance, it forms a thin film which prevent water loss or acts as a reservoir of water and biologically active molecules which are slowly released to the stratum corneum. It forms an innovative texture and soft and rich skin feel.	Data on file provided by Lucas Meyer (manufacturer of BIOPHILIC™).
Suitable for adults and children	The product contains no restricted raw materials. The application for children is also part of the European safety assessment.	Safety Assessment (Confidential)
Non greasy feel	This claim should be supported by a consumer panel test.	-
Complementary care for psoriasis-prone skin	All of the ingredients were described to be compatible with the use in sensitive skin. Nevertlhess, caution should be kept as products intended to treat or prevent eczema, psoriasis, dermatitis or other adverse skin conditions will be considered to be medicinal products.	https://www.ctpa.org.uk/news/cosmetic-claims-mhra-position-on-adverse-skin-conditions-4073, Assessed on August 16th.

ii) Claims/Product Statements

Kelo.Cell Psoris Acute Balm

CLAIMS/ PRODUCT STATEMENT	ANALYSIS	REFERENCES
Helps to alleviate the cutaneous manifestations of skin areas prone to scales, redness, itching, improving the overall appearance of the affected skin areas.	DermaClera™ has an exVivo study and a clinical study, which shows the efficacy of the active ingredient at Psoriasis skin. Because of this, it is to assume that the product would alleviate the associated irritation to psoriatic skin lesions at the initial phase.	Data on file provided by Radiant and CLR.
Deeply nourishes, maintains the skin´s natural balance and normalizes skin barrier function.	Vitamin F (Linoleic acid) is important for an intact lipid barrier and its physiological function. It is able to repair disturbed lipid barrier and is a gentle moisturizing emollient. Also, DermaClera shows efficacy in regulation of skin barrier function.	Data on file provided by Radiant and CLR.
Ideal for quick relief and for unwieldy flaky skin conditions	Studies with DermaClera shows quick relieve in redness and itching. High amount of Polidocanol helps for a quick relieve too. The high amount on Squalan and Vitamin F restores the lipidic structure of the skin and prevents TEWL and prevents skin suppleness.	Data on file provided by Radiant and CLR.
Complementary care for psoriasis-prone skin	All of the ingredients were described to be compatible with the use in sensitive skin. Nevertheless, caution should be kept as products intended to treat or prevent eczema, psoriasis, dermatitis or other adverse skin conditions will be considered to be medicinal products.	https://www.ctpa.org.uk/news/cosmetic-claims-mhra-position-on-adverse-skin-conditions-4073, Assessed on August 16th.

5. COMPETITIVE LANDSCAPE

The competitive landscape for any product includes any solution that will achieve the goal irrespective of the constituents, mode of action or product classification. A market analysis suggests that the key competitors to KELO. CELL Psoris for psoriasis management are likely to be other lotions appropriated for psoriasis prone skin.

The principal players are outlined in Table 2 and 3 as well as product characteristics, indication of use and comments regarding advantages and disadvantages.

Among the other products in the market, KELO.CELL Psoris products are distinguished by:

- **Content in stem cells extract:** The incorporation of the bioactive ingredients derived from vegetable totipotent stem cells allows additional claims regarding remodelling properties.
- **Innovative formula**
- **Dynamic duo:** The two presentations make of Kelo.Cell Psoris line a good option to the management of irritation of sensible skins.

Table 2. Competitive landscape of KELO.CELL Psoris Body Lotion

NAME	CHARACTERISTICS/ COMPOSITION	INDICATION	DIFFERENCES FOR KELO.CELL PSORIS
Psorisdin® (Isdin)	• Urea • Salicylic acid • Niacinamide • Polidocanol •Allantoin • Aloe vera	• Softens, normalizes and hydrates the skin. • Helps reduce itching.	• Demonstrated efficacy in plaque psoriasis • Decrease the redness and itching associated with psoriatic skin
Lipikar Lait Urea 5+ (La Roche-Posay)	• Shea butter • Urea • Exfoliating factor • Allantoin	• Hydrates and rebuilds lipids • Decreases the granular appearance and soothes the roughness of the skin on the body • Strengthens the skin barrier and soothes skin discomfort	• Clinically tested • Declaration of stronger claims like "%98 skin dryness right after applying Lipikar Lait Urea +5"
Aveeno Active Naturals Skin Relief Moisturizing Lotion	• Triple oat • Shea butter	Soothe the discomfort associated with itching and dryness	• Clinically tested • Allergy tested • Parabens free • Dyes free
Aveeno - Eczema Therapy Nighttime Itch Relief Balm Fragrance-Free	• Colloidal oatmeal • Ceramide	Relieves itch and irritation while replenishing skin's natural moisture barrier	• Steroid free • Fragrance and dyes free • Parabens free

NAME	CHARACTERISTICS/ COMPOSITION	INDICATION	DIFFERENCES FOR KELO.CELL PSORIS
CeraVe Psoriasis Skin Therapy Moisturizing Cream	• Salicylic acid • Lactic acid • Niacinamide • Ceramides	Help skin itching, scaling, redness, flaking, and irritation associated with psoriasis, as well as to help prevent the reoccurrence of psoriasis symptoms.	• Controls the symptoms of psoriasis and helps prevent reoccurrence • Non-comedogenic, non-irritating • Fragrance free • Developed with dermatologists
Eucerin Urea Repair Plus 10% Ureia Loção	• Urea • Ceramides • Natural factors of nourishment	• Strengthens the natural skin barrier • Maintains hydration and comfort • For dry to very dry, scaly and itchy skin	• Clinically tested • Fragance and dye free
Noreva Psoriane Leite Hidratante	• Shea butter, thermal water, sterile AHA, glycerin and fa extract	• Moisturizing and regenerating milk. • Dry, scaly or irritated skin.	The skin is smooth, comforted and more supple.

Table 3. Competitive landscape of KELO.CELL Psoris Acute Balm.

NAME	CHARACTERISTICS/ COMPOSITION	INDICATION	DIFFERENCES FOR KELO.CELL PSORIS
Isso-Urea MD Baume Psoriasis (La Roche-Posay) Ducray Kertyol PSO	• Medical Device • Procerad® • Protease activator factor and Urea	• Improves and alleviates the cutaneous manifestations of psoriasis: plaques, scales and itching • Complementary care for psoriasis-prone skin	• Clinically tested • Subjects noticed more hydrated and soothed skin, and a reduction in the itching sensation • Favors the elimination of plaques • Smoothes the itchy feeling
Uriage Xémose PSO Concentrado Calmante	• Cathelicidin LI-37 Modulation • Uriage thermal water • Karite butter	• Relieves irritation and itching • Restores essential skin comfort • Nourishes, softens and reduces redness • Suitable for psoriasis-prone skin	• Clinically tested • Eliminate up to %90 of skin plaques, in combination with medical treatments. • Effectively calms the feeling of discomfort, while strengthening the skin barrier • Fragrance free
XeraCalm A.D Bálsamo Relipidante	• I-modulia® • Cer-omega, similar skin lipids	Very dry skin prone to atopic eczema and itching	• Clinically tested • ANTI-PRURITIS: efficacy recognized by dermatologists of the European Dermatology Forum in the management of atopic eczema (category «Emollient PLUS**) • RELIPPING: relieves very dry skin prone to atopic eczema and itching • SOOTHING
Atoderm Intensive (Bioderma)	• Lipigenium™	• Relieves and reduces itching • Intensely nourishes and restores the skin • Strengthens skin barrier	• Clinical tested • No flare-ups for 6 months • Fragrance free

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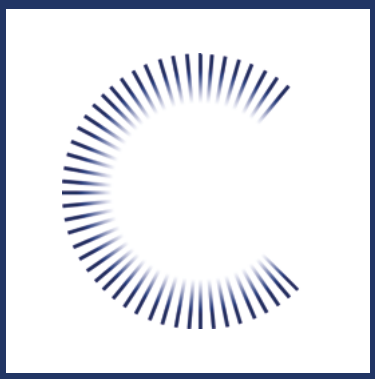

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