Provital
Do Care

Altheostem™

Dermohacking senescence through the eternal power of plant stem cells

1st SENOLYTIC MECHANISM ever awarded in cosmetics

AI checked

CareActives

Well-aging

**Image created through MidJourney, the independent research lab & program that uses Artificial Intelligence to expand the human imaginative power.*

Altheostem™

Dermohacking senescence through
the eternal power of plant stem cells

MAIN CLAIMS

- Next-level efficacy and sustainability for the cosmetics of the future
- Leverages technology for a tailored biological action on senescent skin cells
- AI-proved well-aging power of over 3 years less on apparent age
- Biotechnological active sustainably obtained from lab-grown flower stem cells of *Althaea rosea*

PROVEN COSMETIC ACTIVITY

IN VITRO

Increasing % of Altheostem™

Senolytic activity

This study was Awarded as TOP 10 Poster on IFSCC 2020, and its results demonstrate the selective and dose-dependent elimination of senescent human dermal fibroblasts (HDF) by Altheostem™ and its positive consequences on the skin's Extracellular Matrix (ECM).

AI-PROVED WELL-AGING POWER

2% Altheostem™

Calculation of the Visual Apparent Age with a new Machine Learning system

−3.26 years less after 56 days (vs placebo)

IN VIVO

2% Altheostem™

Healthy & youthful skin

The results of the various instrumental tests performed prove that Altheostem™ significantly improves many mechanical and visible well-aging parameters.

↑ +8.5%*	Healthy glow	↑ +7.8%***	Skin redensification
↑ +16.8%*	Elastic recovery	↓ −13.8***	Wrinkle depth
↓ −18.6%*	Skin sagging	↓ −6.7%*	Wrinkle volume
↑ +17.9%*	Biological elasticity	100% of volunteers felt their skin was healthier after treatment	

* p<0.05 ** p<0.01 *** p<0.001

MARKETING TOOLS

1. Respond to the most savvy consumer with a new dermocosmetics-like natural ingredient.
2. Emphasize the ecological benefits of lab-grown and stem cell-based ingredients.
3. Capitalise on Artificial Intelligence by aligning tailored solutions with our ingredient's efficacy.
4. Create an elevated but fun formulation topic around immortality and 'zombie' cells.

INCI

Propanediol, Water, Glycerin, Althaea Rosea Flower Extract, Xanthan Gum, Pentylene Glycol, Levulinic acid, Glyceryl caprylate

RECOMMENDED DOSE

2 %

CERTIFICATION

HALAL

ECOCERT COSMOS APPROVED

COMPLIANCE

100% Natural Origin (ISO16128)

CHINA

VEGAN

Unfading lust for life

The longevity era brings a new quest for immortality

Humans have long harboured an obsession with living forever, but not at any price. Ever since some of humanity's oldest tales, dating back to the 22nd century BC, one of its deepest desires has been to attain everlasting life (1). Now, modern science has opened up a variety of new ways to improve survival and quality of life, and members of the technology-driven ultra-rich are adopting these new approaches in an attempt to **extend and enjoy their own lives for longer**.

That longstanding appetite for life intensifies along with a **worldwide population ageing phenomenon**. In fact, the global population aged 65+ will grow by 62.5% between 2021 and 2040, and reach 1.3 billion by 2040. And this is no longer only a developed market phenomenon. Actually, developing countries are now ageing faster than the developed world. (2)

As this is a large, growing and relatively affluent demographic, **older consumers offer a great chance for innovation** to cater to their special demands, where health takes a central stage and the approach to well-aging is holistic, seeking balance in body and mind with wider lifestyle choices that include supplementation, exercise, diet, beauty products and therapy. In response to the increased interest in this type of "healthy fix" for ageing among older consumers, manufacturers across consumer health have taken different approaches to leverage **preventative health**.

Provital anticipated the effect of this unfading fervour for life, and combined nature and science to **capture the essence of immortality in a brand -new approach to well-aging…**

Dermohacking cosmetics

Naturally hacking senescent skin cells with Altheostem™

With the recent trend in preventative health, new terms and movements are **leading innovations in healthcare**. **Biohacking**, for example, is a term that is getting more and more popular amongst healthcare. It basically refers to the reasoning behind the health benefits one can achieve by employing certain changes in daily habits. It details **how these little "hacks" to our own physiology can affect our aging process, and how technology can make them feasible**. Biohacking is an umbrella term that encompasses a bunch of self-help material, a dollop of scientific reasoning, and a sprinkle of philosophy for good measure (1). The adoption of these practices is growing due to their potential to decrease the risk of genetically associated diseases and to optimise the general body functions (3), and its global market size is anticipated to reach USD 63.7 billion by 2028, registering a CAGR of 19.4% over the forecast period (3).

The emerged success of the **biohacking concept in healthcare goes hand in hand with the unprecedented scientific advances** that are occurring in the anti-ageing field, particularly with the discovery that the rate of ageing is controlled by genetic pathways and biochemical processes conserved in evolution – such as cellular senescence (4). As this **relation between ageing and cellular senescence becomes established in the scientific community,** the beauty industry can better tap into the opportunities that the longevity era and the innovation-eager consumer offer.

In this regard, Provital is taking the lead in a new type of cosmetics that will leverage technology, science and natural preferences to push the boundaries on efficacy and personalisation, while still supporting an environmentally friendly brand positioning: **DERMOHACKING COSMETICS.**

✓ Hyper-efficacy [Dermo-like Science]

When further analysing the current proactive approach to health, we see that the consumer is looking for efficacy and results. Clean beauty, herbal, traditional medicine and doctor-founded brands in the premium space overlap with dermocosmetics consumers' demand for "safer" & science-backed solutions. So, efficacy is no longer only the clinical effects of the end product, but also the combination of those tests with the known efficacy of its active natural ingredients (5). This trend is now known as hyper-efficacy, and it will be a key driver of success in the future beauty world.

✓ Hyper-selectivity [Sustainable Tech]

Along with hyper-efficacy, all over the world consumers' personalisation needs will evolve to go beyond tailored skincare (5). Because, at present, personalisation is only about using technologies like AI, AR, and VR to guide consumers to personalised advice or product matching (6). However, it is through selective mechanisms of action such as Altheostem™'s that a beauty product will be able to address the specific needs of each person's skin by selectively targeting the 'damaged' cells. Plus, through its specifically designed biotechnological obtention, Altheostem™ tackles both sustainability and technological advances to achieve the globally desired hyper-selectivity.

Altheostem™ appears as a new kind of well-aging ingredient that blends both dermocosmetic and biohacking concepts: A new plant stem cell-based active that selectively eliminates skin cellular senescence, thus providing the next-level efficacy and sustainability aspects that the global well-aging market demands.

Hacking the future with a lab-grown flower extract

Seizing the self-renewal power of stem cells to reach ecological immortality

Consumers are paying more attention to ingredients than ever before. They research ingredients to understand their effectiveness (5). Besides, value creation has become a defining feature of the beauty industry, with sustainability claims remaining high (7) and innovative technologies bringing **engineered and lab-grown ingredients** to a new level. This is particularly visible in the well-aging category, where the global number of stem cell-based product launches have increased by almost 15% since 2018 (8).

In this context, and in line with our *Do Care* philosophy, in 2020 Provital brought together all the ingredients sustainably obtained from plant stem cells in "the **Provital Stem Cell Collection**". Now Altheostem™ joins the group thanks to the fact that it is obtained through the same **100% traceable, eco-responsible biotechnological process**. It is expanding the collection's opportunities with this *Althaea rosea* flower extract, a powerful ingredient with a strong move towards premiumisation detected over the last few years (8). Thus, an ingredient like Altheostem™ can tie sustainability to a greater integrity of ingredients, even in areas of beauty like dermocosmetics, where this 'tech-driven sustainability' momentum has not picked up yet, but is still a very ingredient-focused segment (6).

Altheostem™ is produced from stem cells obtained from the lab-grown *Althaea rosea* (hollyhock, malva real, rose trémière) petal derived callus.

This **immortal source** of the active has been **standardised in total polyphenols**.

In addition to being a beautiful flower species with many medicinal properties (18) *Althaea* is a Greek mythological female figure, whose name comes from *Althaía* (**"healer" in Ancient Greek**) and whose **eternal power** is the spirit that fuels Altheostem™.

All in all, Altheostem™ uses the self-renewal power of stem cells to reach superlative ecological standards, which ultimately turn it into a **Vegan-compliant, COSMOS-Approved** active of **100% Natural Origin** (ISO16128), with the unique ability to modulate the mortality of certain human skin cells.

Leading innovation in cosmetics science

Altheostem™, 1st Senolytic mechanism awarded in cosmetics

At Provital, we care by combining nature and science, and we work to ensure that technologies and scientific advancements align with the needs of our industry. That is why we participate in the International Federation of Societies of Cosmetic Chemists (IFSCC) in their work focused on making cooperation in cosmetic science possible.

During the 31st @IFSCC Congress 2020 in Yokohama we presented a poster on the **cutting-edge strategy for healthy skin ageing that had been discovered for Altheostem™.** The poster was called "*Senolysis, a cutting-edge strategy for healthy skin ageing, is activated by Althaea rosea stem cells*" (9), it was **ranked among the Top 10 best posters** (out of a total of 367 exhibited). Its main author, Dr. David Manzano, was invited by the scientific committee of the 5th Intercontinental Personal Care Excellence (IPCE) Conference to explain the breakthrough that these discoveries represented for cosmetic science and product excellence.

Senolysis,
a real breakthrough for well-aging beauty

Cellular senescence is a stress response to damaging inputs such as genotoxic or oxidative stress, telomere shortening, DNA injury or mitochondrial dysfunction, which results in irreversible resistance to apoptosis. Although it is a normal and healthy cellular response in young tissues, the accumulation of senescent cells over time has deleterious consequences in some critical physiological processes (10,11). In fact, senescence is considered **one of the most important hallmarks of ageing**, and one of the reasons why human skin develops certain age-related alterations in elastic fibre morphology, facial wrinkles, and perceived age (4,12). So, senescent cells are occupying a spot while not participating positively in the maintenance of the healthy skin tissue; they are an hindrance for a young skin tissue.

It is not surprising then that cell senescence, and the inflammatory factors that follow it—known as senescence-associated secretory phenotype (SASP)—are widely studied in pharmacology as treatment targets. In the anti-ageing field, the strategies followed when attempting to block the negative effects of senescent cells can be classified as:

- **Senomorphic, when the objective is to supress the SASP phenotype**
- **Senolytic, when the target is the selective elimination of senescent cells**

Although the selective removal of senescent cells (**senolysis**) is an emerging anti-ageing pharmacological strategy, its use **in the cosmetic field is still very limited**. And yet the skin was one of the first organs in which senescent cells were identified (13) and may contain up to **55% of senescent fibroblasts** (14) whose specific type of SASP has shown unique features related to various skin ageing and homeostatic processes other than the common features such as pro-inflammatory and matrix-degradation phenotypes (15).

At Provital, we saw the scientific opportunity that this represented and embarked upon the development of Altheostem™, a new biotechnological plant ingredient that displayed **senolytic activity in dermal fibroblasts** to ultimately provide a cosmetic formula with a rather **effective way of prolonging the skin's youthful and healthy state**.

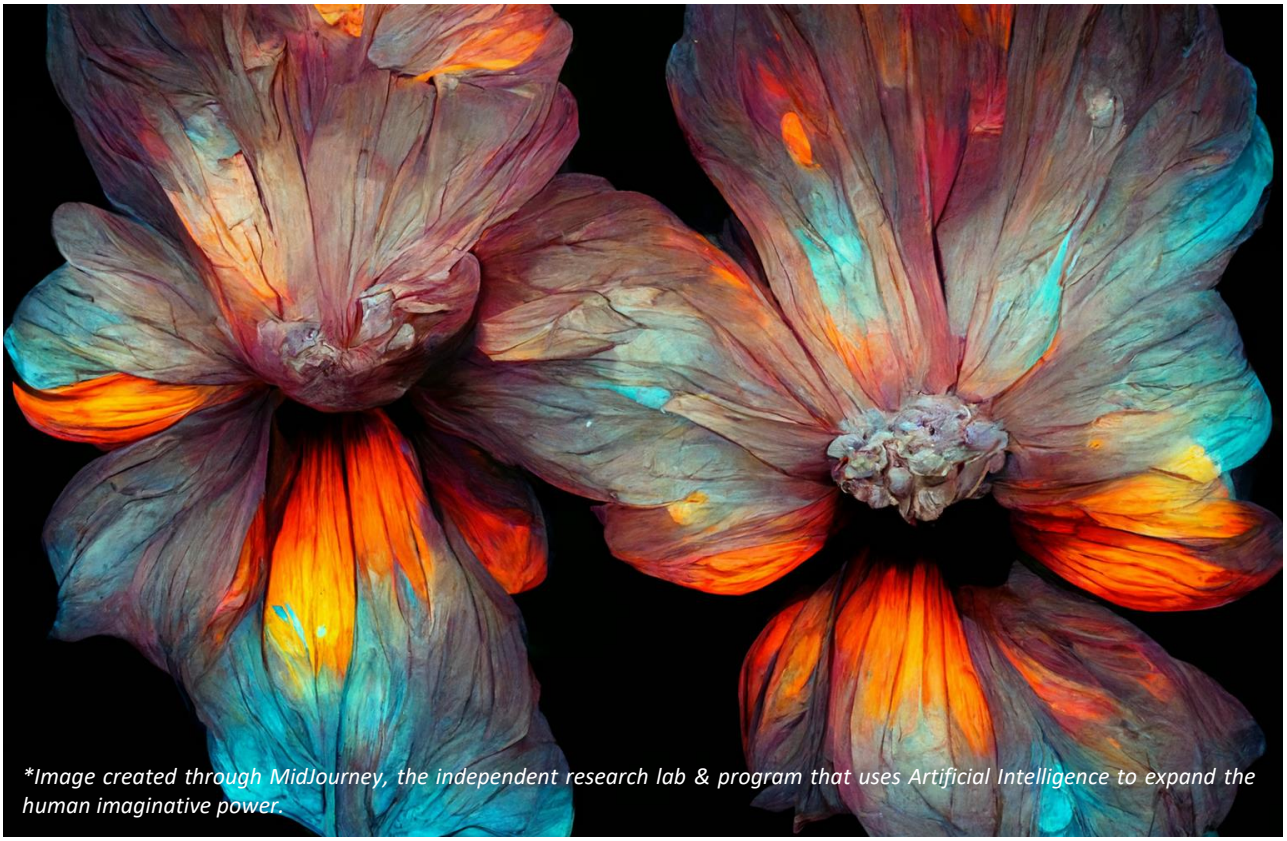
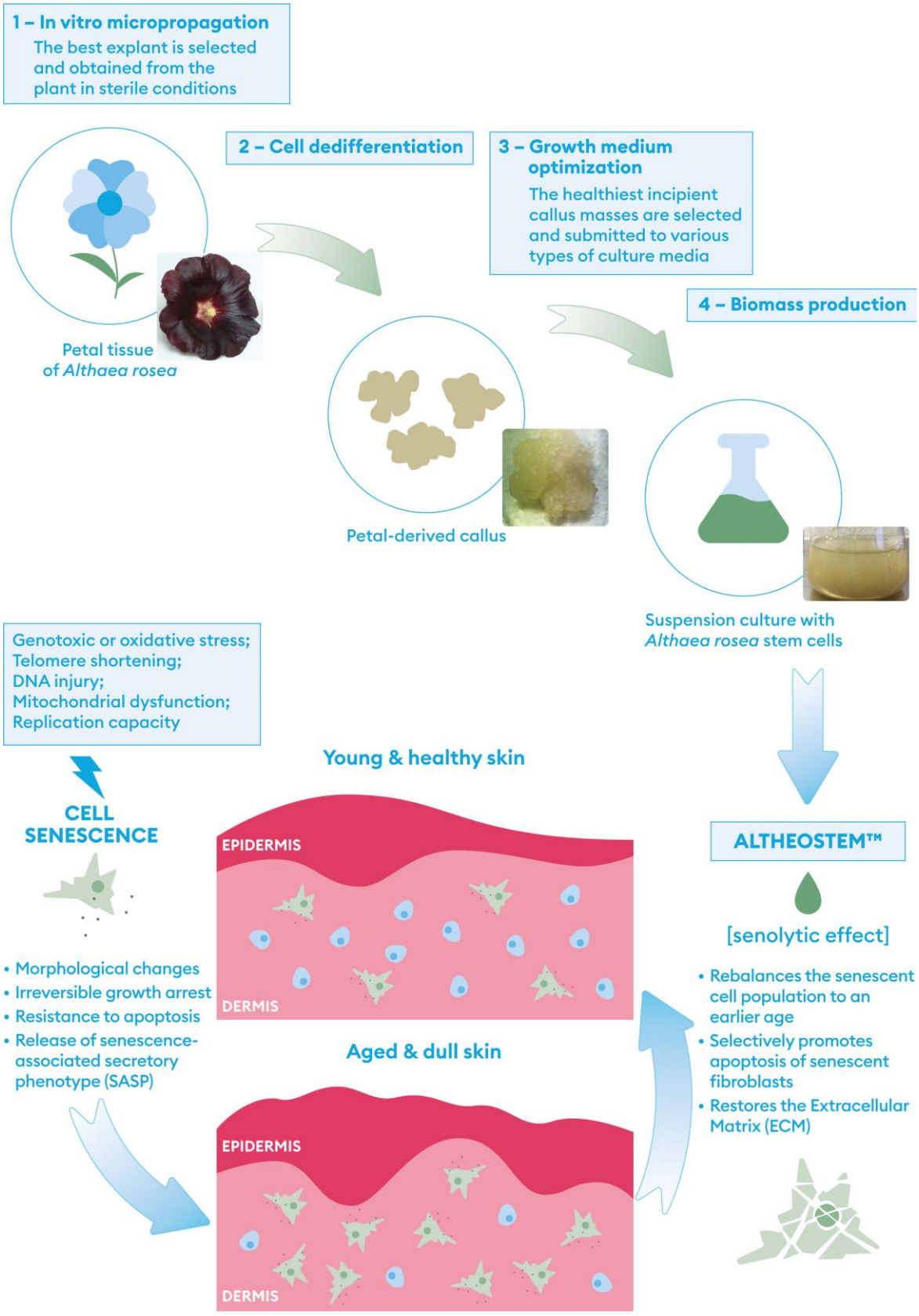


**Image created through MidJourney, the independent research lab & program that uses Artificial Intelligence to expand the human imaginative power.*



Altheostem™ illustrates a new biotechnological path to selectively hack skin senescence

IN VITRO efficacy

Quantification of the Senolytic activity of Altheostem™

In vitro study on Human Dermal Fibroblasts (HDF)

To evaluate the leading-edge senolytic activity of Altheostem™ on the skin, Provital performed 4 different assays that demonstrate how Altheostem™ selectively reduces the viability and the number of senescent HDFs by inducing their apoptosis, and how such activity is transferred into the anti-ageing biological pathways of the skin.

How?

Provital was able to quantify and double-substantiate the senolytic activity of Altheostem™ thanks to the use of two different HDF senescent models.

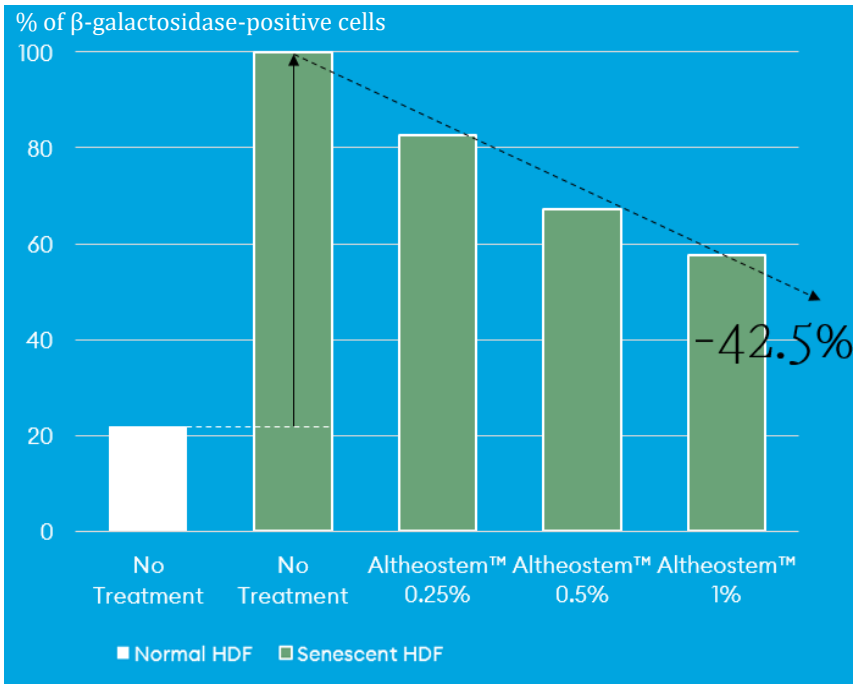
First, HDFs were induced with H_2O_2 to cause **extrinsic cell senescence**. Then, these **chemically induced** senescent cells were treated with different concentrations of Altheostem™. Their viability was then analysed by quantifying both the proportion of β-galactosidase-positive cells and their ATP levels.

Furthermore, a second type of senescent model was used to quantify the selective induction of apoptosis on senescent HDFs. In this case, the **replicative model of cellular senescence** was used, where HDFs from a young donor were continuously subcultured, until they lost their division capacity and showed a previously defined senescent marker (9). Then, these **naturally induced** senescent cells were treated with different concentrations of Altheostem™ and two different apoptotic markers were quantified.

All these measurements of Senescent HDFs were compared to Normal HDFs, which were the same cell lines that had not been induced for any kind of senescence, to obtain the following results in vitro for the active ingredient Altheostem™:

1. Dose-dependent senolytic activity

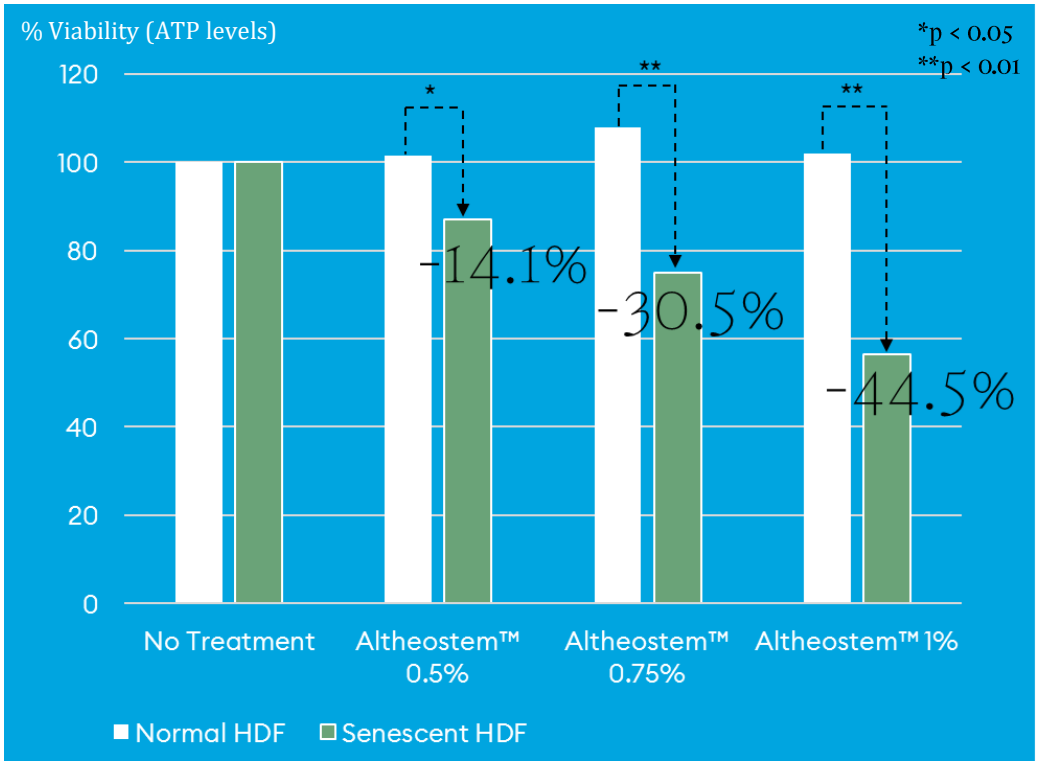
The proportion of β-galactosidase-positive cells diminishes proportionally to the increasing % of Altheostem™



β-galactosidase is a known and specific biomarker for senescent cells (13). So, it is no surprise to see how after treatment with H_2O_2, the resulting senescent HDFs show a dramatic increase in the proportion of β-galactosidase-positive cells. The interesting part of this graph is that this proportion decreases as the concentration of Altheostem™ increases, thus indicating a dose-dependent reduction in the number of senescent cells.

2. Selective elimination of senescent cells

The viability of senescent cells is significantly and selectively reduced by treatment with Altheostem™

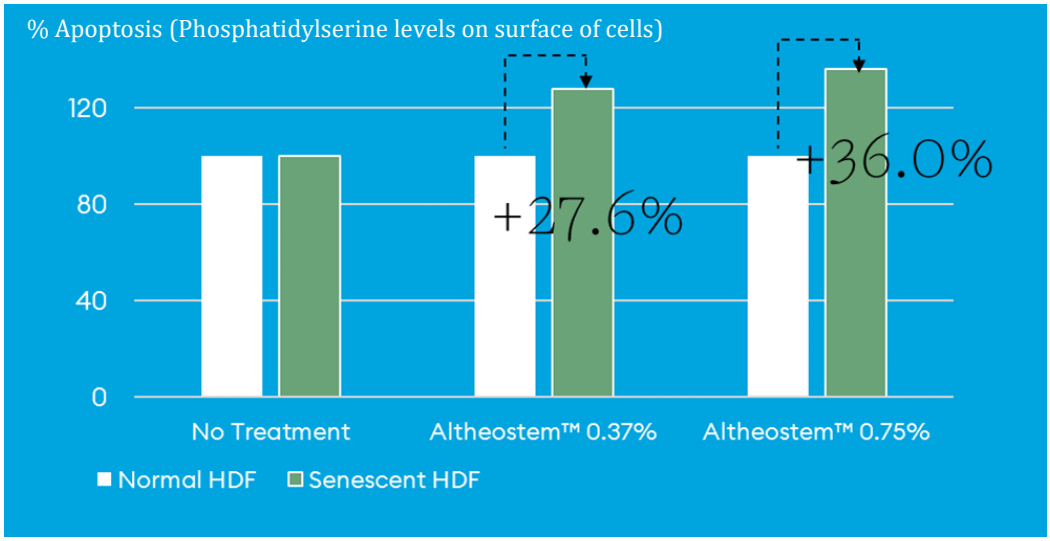


The other viability evaluation performed with Altheostem™ was the quantification of the ATP levels of the senescent and normal HDFs. To this end, the previous graph shows how Altheostem™ significantly reduces the viability of senescent cells at any of the assayed concentrations (ranging from 0.5 to 1%); and, even more importantly, the differences in the reduction detected in the viability of senescent and normal HDFs were statistically significant at any of the assayed concentrations and go up to 44.5% when treating with Altheostem™ at 1%. This not only ensures the dose-dependent activity of Altheostem™, but also proves that such effect is **selective to senescent cells**.

3. Selective apoptotic effect on senescent cells

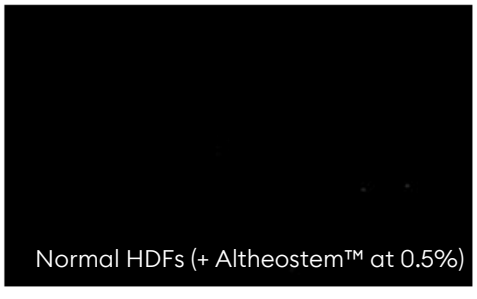
The induction of apoptosis is only observable and quantifiable on formerly resistant senescent HDFs

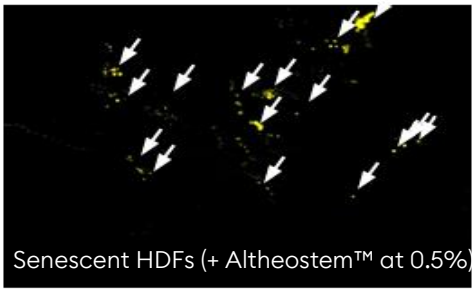
One of the identifying phenotypes of senescent cells is their resistance to apoptosis. In fact, a proposed mechanism to evaluate the activity of the senolytic compounds is their capacity to induce the apoptosis of senescent cells, often by upregulating pro-apoptotic molecular pathways.



In the case of Altheostem™, the analysis of the apoptosis was performed through the quantification of the levels of phosphatidylserine exposure (a biomarker of apoptotic early events) on the surface of the senescent HDFs treated with different concentrations of the active.

The results were compared with those obtained in normal HDFs. As shown in the graph above, while normal HDFs remained the same, the treatment of senescent HDFs with Altheostem™ increased the apoptosis levels by 36% at highest concentrations, thus indicating a selective induction of apoptosis for those formerly resistant to it. Such selectivity was also observable thanks to the evaluation of a second marker of apoptosis, the activation of Caspase-3/7 analysed by high-throughput automated imaging acquisition and high-content screening:



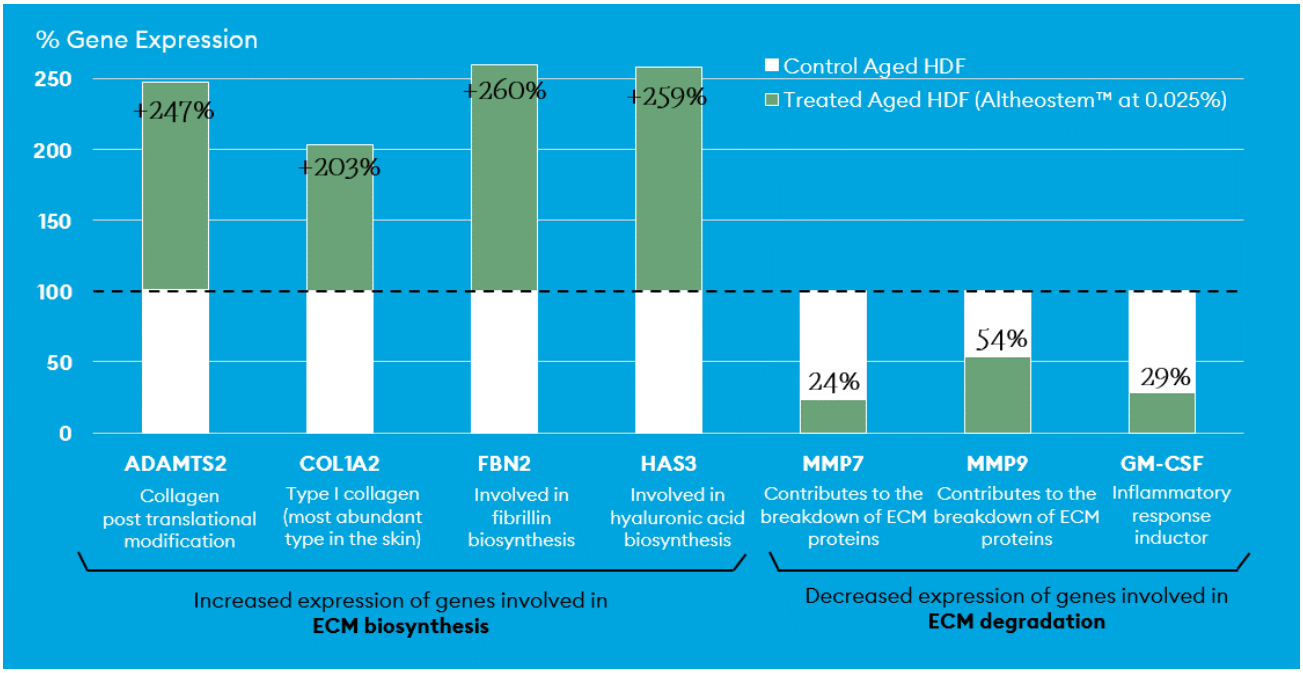


4. Anti-ageing outcomes resulting from Senolytic activity on the skin

The activation of selective senolysis promotes the right modulation of the expression of genes involved in the ECM remodelling of senescent HDFs

To further evaluate the biological relevance of the recently discovered senolytic activity of Altheostem™ in the context of its potential anti-ageing application (12), a gene expression analysis of the relevant genes involved in Extracellular Matrix (ECM) remodelling was performed, by comparing the expression levels of certain genes on natural aged HDFs (from an old donor) treated or not treated with Altheostem™.

The results below show a clear induction of the genes involved in the formation of the extracellular matrix, including COL1A2, ADAMTS2 (both involved in collagen formation), HAS3 and FBN2 (involved in hyaluronic acid and fibrillin biosynthesis, respectively). Conversely, genes involved in extracellular matrix degradation such as the metalloproteinases MMP7 and MMP9 and the pro-inflammatory factor GM-CFS are strongly repressed (16,17).



Altogether, these in vitro results strongly suggest the positive outcomes that the senolytic activity of Altheostem™ exerts on ageing skin cells.

Altheostem™ induces the selective apoptosis of senescent cells, creating a senolytic effect on dermal fibroblasts that subsequently leads to a series of positive biological consequences for ageing skin.

IN VIVO efficacy

Instrumental analysis

Placebo vs active ingredient at 2%

A panel of 70 healthy Caucasian female subjects, aged between 45 and 65 years were studied in a double-blind in vivo study. A formulation with 2% Altheostem™ was applied by 35 volunteers, and 35 applied the placebo, (according to a previously defined randomisation list) and efficacy tests were performed after 28 and 56 days of treatment. The results of the various instrumental tests performed prove that **Altheostem™ significantly promotes:**

❖ *A healthy glow*

[statistically significant (*p<0.05) at D56 vs placebo]

As the new well-aging consumer becomes increasingly health-greedy and desirous for a personalised and natural approach to ageing (2), the measure of skin gloss becomes more important in dermatology and cosmetology, as it helps in the evaluation of both skin health and beauty, and it is linked to skin rejuvenation.

Fuelled by its senolytic action, Altheostem™ provides 7.4% more skin radiance than the placebo after only 28 days, a difference that keeps on increasing until the last day of this clinical assay, providing a significant +8.5% improvement in the glowing appearance compared to the placebo.

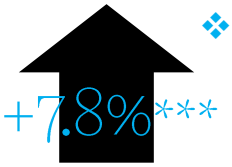
❖ *A triple reestablishment of skin elasticity*

[the 3 different parameters are statistically significant (*p<0.05) at D56 vs placebo]

Another important sign when it comes to skin health is its elasticity. When the skin is in good condition, its mechanical properties are too. In this sense, at Provital, we wanted to clinically ensure the in vitro results found in the improvement of the skin's ECM with a triple elasticity test where—by using a Cutometer® on the cheeks of all volunteers—we could evaluate Altheostem™ and its:

1. **Elastic recovery** (ability to recover the skin's original position after deformation)
2. **Less skin sagging** (uplifting and moisturising properties)
3. **Elastic composition** (balanced composition of the skin's elastin fibre network)

Altheostem™ showed a statistically significant effect in all three parameters after 56 days of treatment and compared to the placebo. However, it already provided a better elastic recovery (12.19%), a significant lifting effect (18.87%*) and improved skin elastic composition (7.98%) after only 28 days of treatment - all expressed as a difference vs the variation of each parameter in the placebo.



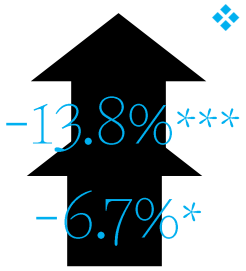
❖ *A cumulative redensifying effect*

[statistically significant (*p<0.001) at D56 vs placebo]**

With the same purpose, we also confirmed the in vitro results on collagen increase and ECM remodelling with an ultrasound thickness evaluation of dermis and epidermis of all volunteers.

The resulting increase in total skin thickness was impressive: after only 28 days, Altheostem™ increased dermal and epidermal thickness by 6.4%, which represents a statistically significant difference of 4.8% (p<0.001) vs placebo in that

same period. Nonetheless, these numbers almost doubled after 56 days, suggesting that Altheostem™ reverses the loss of skin thickness associated with age in both the dermis and the epidermis in a significant and cumulative fashion.



❖ *A remarkable anti-wrinkle effect*

[statistically significant (*p<0.05; ***p<0.001) at D56 vs placebo]

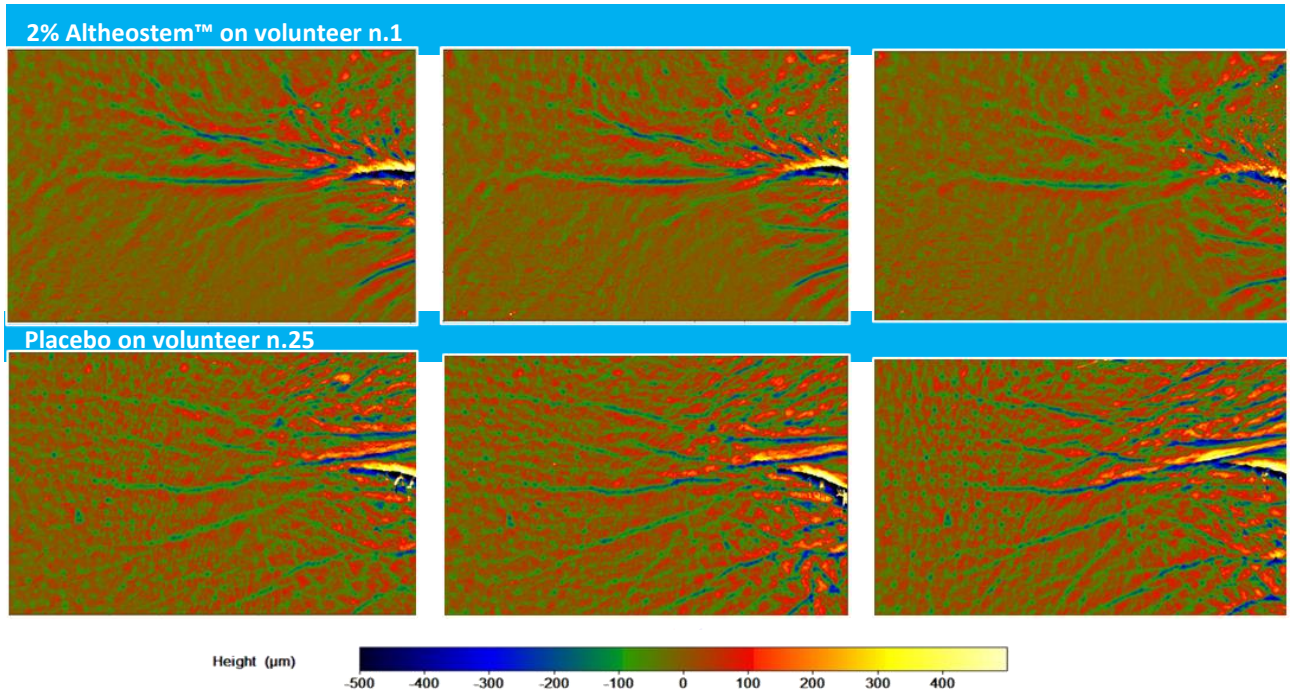
When talking about efficacy in well-aging cosmetics, it is indisputable to tackle skin smoothness. In fact, 'wrinkles' and 'fine lines' are the 3rd and 6th top skin concerns globally (6). For this reason, we studied the effect of Altheostem™ on the skin surface thoroughly.

Thanks to the 3D Primos device and the subsequent evaluating software, we were able to quantify and visibly observe the decrease in wrinkle depth and volume as well as the overall smoothing effect on the periocular area.

As per the quantification, Altheostem™:

- significantly decreases wrinkle depth both after 28 and 56 days of treatment, by -8.01% and -13.86%, respectively and compared to the placebo.
- markedly decreases wrinkle volume down to -2.55% at day 28 and -6.76% (p<0.05) at day 56 vs placebo.

This remarkable and cumulative anti-wrinkle effect is also visible in the 3D Primos images of the volunteers' crow's-feet area, as can be seen in the example below:



❖ *A recovery of almost 6 years in the periocular area*

[a 5.7 years less effect is proven by skin profilometry vs placebo]

This "X-year less" effect is evaluated by fitting the periocular wrinkle depth data obtained in this study into a reference curve constructed from a large database that links the biological age of female volunteers with wrinkle depth. This estimation shows how Altheostem™ decreases the average estimated age of the volunteers by 2.8 years and 5.7 years after 28 and 56 days of treatment, respectively, compared with the placebo.

IN VIVO efficacy

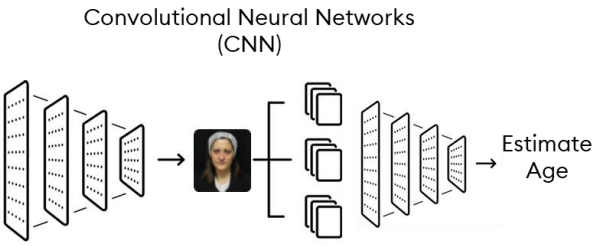
Visual apparent age based on Artificial Intelligence

Placebo vs active ingredient at 2%

The same panel of 70 healthy Caucasian female subjects, aged between 45 and 65 years were also studied in vivo for both short- and long-term results after 28 and 56 days. In this case, Provital calculated the Visual Apparent Age with a cutting-edge and highly reliable Machine Learning system based on Artificial Intelligence.

How?

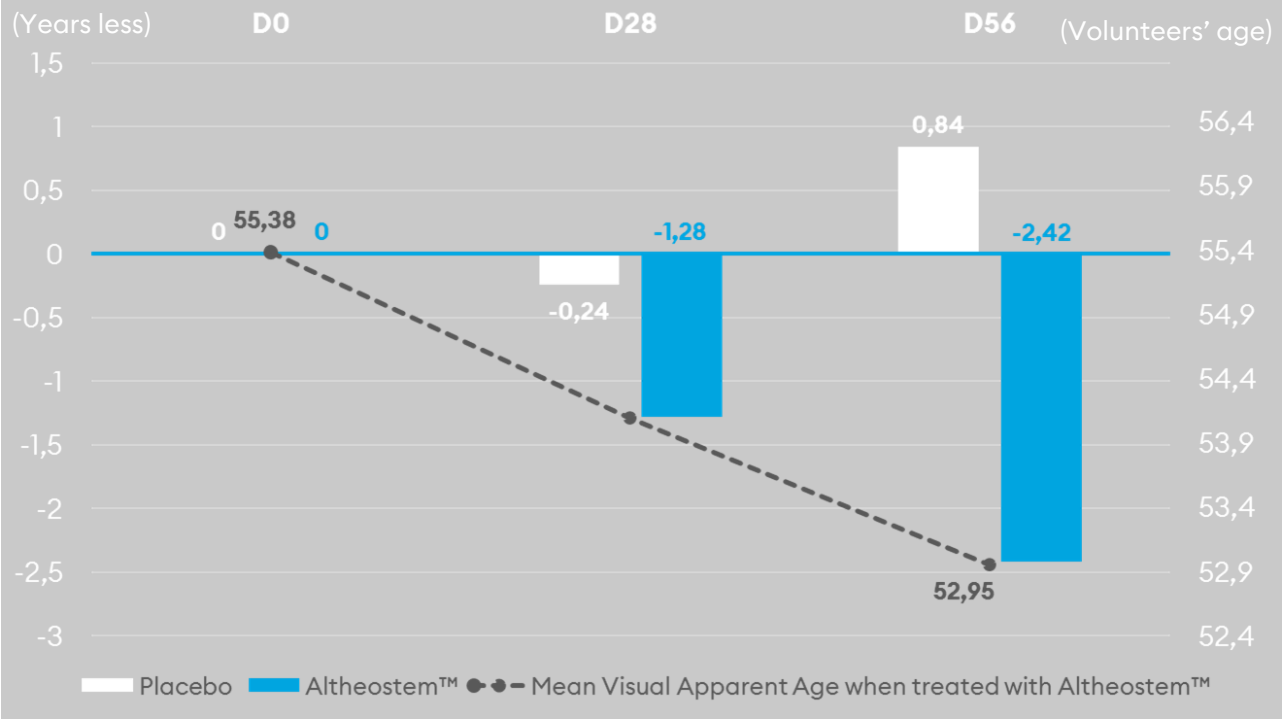
This age estimation module consists of a Machine Learning system that, based on Image Data, predicts the age of subjects in a controlled environment. In order to create an efficient system for apparent age estimation, an ensemble of different convolutional neural networks (CNNs) was used. The latter work together to extract information from each of the analysed pictures. The age detection model was initially trained using 55,134 images from 13,617 subjects with ages ranging from 16 to 77 years old. The source data in our study consists of 207 videos showing the evolution of the subjects during different stages of treatment (D0-D28-D56). These videos were recorded in Full HD at 30 frames per second (FPS) and have an average duration of 36 seconds, with a total of 223,560 images analysed. These CNNs will firstly isolate and crop the subject's face from the image to eliminate possible background noise with a face detector, and then that portion of the image containing the subject's face is fed to 3 different models that estimate the age of the subject.



It is thanks to this calculation that Provital could estimate the change in the Visual Apparent Age of all volunteers, thus proving the well-aging power of Altheostem™ through Artificial Intelligence.

AI-PROVEN WELL-AGING POWER

Altheostem™ decreases apparent age by over 3 years



The results obtained show how the apparent age decreased by approximately 2.5 years in the group treated with Altheostem™ at the end of treatment (56 days) and remained almost the same in the placebo group, or even increased (0.84 years). So, when comparing Altheostem™ with the placebo, the difference was of 1.04 years less and 3.26 years less after 28 days and 56 days of treatment, respectively.

Thus, Altheostem™ unveils its well-aging power by decreasing the mean apparent age of volunteers by over 3 years, and becoming a pioneering active ingredient with the capability of evolving to the predictive tailored facial care that the future consumer will demand and understand easily (5), thus making hyper-selectivity sustainable and scalable through tech-based personalised products.

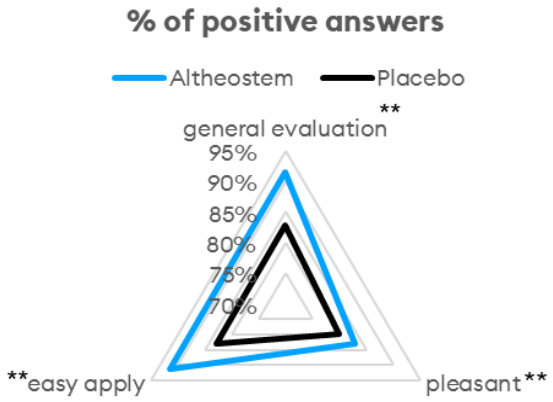
By selectively triggering senolysis in ageing skin, Altheostem™ appears as an undeniable 'dermohacker' whose tailored biological action will induce such a significant improvement on ageing skin that the apparent age after treatment will certainly decrease.

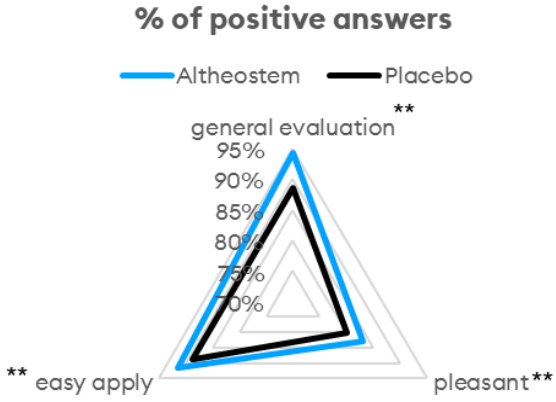
IN VIVO efficacy

Subjective assessment questionnaire for all volunteers

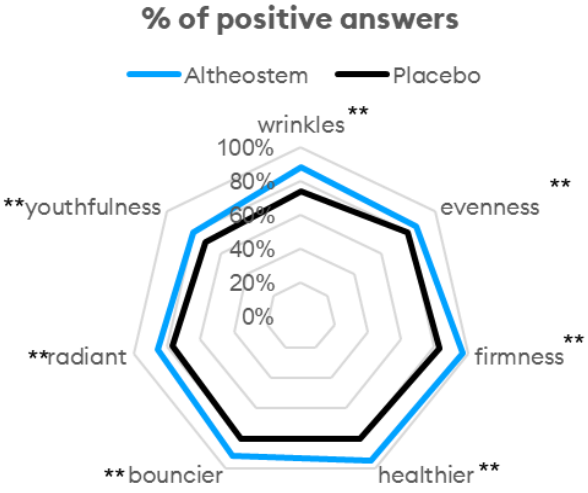
Placebo vs active ingredient at 2%

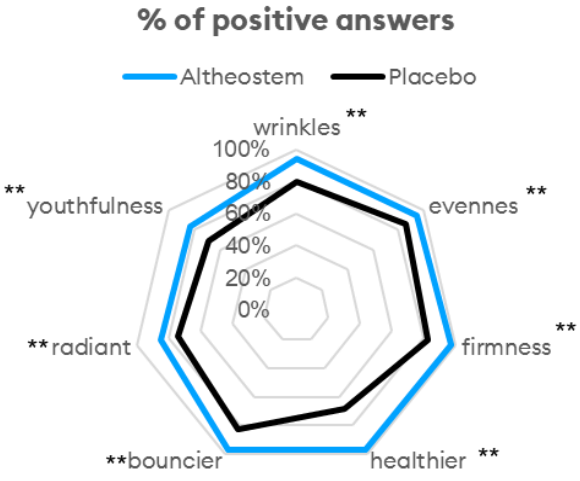
After 28 and 56 days of the clinical study, all 70 volunteers were asked to express their opinion on the tested product (in terms of tolerability, efficacy, and pleasantness) by answering a questionnaire. They answered using a defined grading scale and the results are expressed in percentage of people that answered positively.





D28 **D56**





Altheostem™ was judged to be far superior in comparison with the placebo for all acceptability and efficacy items and the differences were statistically significant (**p<0.01), summing the ingredient's efficacy as both empirical and emotional.

Altheostem™,

Dermohacking senescence for a 100% perceived healthier and bouncier skin

Opportunities with Altheostem™

Listen to this at Provitalks!

Marketing Tools

Responding to TOP trends

1. Emphasize the ecological benefits of lab-grown materials with education on stem cell-based ingredients

Consumers are more interested in ingredients than ever before, and innovative technologies bring engineered and lab-grown ingredients to a new level (5). Therefore, brands could now take communication further and use it to educate the premium beauty consumer on the benefits of biotechnological ingredients in terms of efficacy, but especially in sustainability. For that, stem cells and growth protocol's know-how represent a unique advantage.

2. Respond to the savviest consumer with a new face of dermocosmetic-like beauty product that combines effectiveness & naturalness

Since dermocosmetics is linked with health rather than with beauty, the segment has experienced notable growth in the last years due to the credibility that dermocosmetic brands bring to the consumer (6). These brands leverage science-backed claims, what subsequently gives them a greater perception of safety, efficacy and transparency, and a larger pool of potential users.

Now that the dermocosmetic user tends to be younger, digitally-savvy and have more natural preferences; clean beauty, plant-based, traditional medicine-based, and doctor-founded brands can overlap with dermocosmetic consumers' demands by combining the perceived safety of their natural origin with new powerful science-backed claims.

3. Capitalise on Artificial Intelligence by aligning tailored solutions with our ingredient's efficacy through simple algorithms that predict age improvement with your product

Data science and tech will make hyper-selectivity sustainable and scalable from a business perspective (5). By virtue of using Altheostem™, a brand could take the high-tech personalisation narrative to the next level by creating a simple App that calculated the apparent age of users which – through a simple algorithm that related age with the % of senescence in their skin (based on in vitro and in vivo studies of Altheostem™) – it was able to calculate, for example, the amount of time that the user should be applying the product containing Altheostem™ to reach a healthier and youthful skin.

4. Make immortal cosmetics an elevated but fun formulation topic around the concept of 'zombie' cells

See how we embraced the senescence concept on an elevated but fun inspirational formula on the next page!

Formulation Tools

Responding to TOP trends

Let us inspire you with our *SKIN REVIVING ANTIDOTE:*

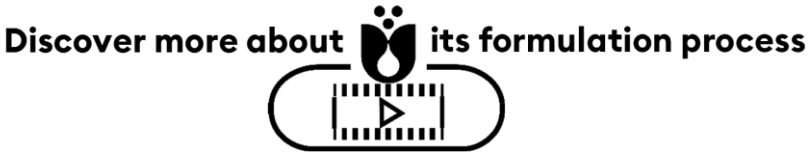
A ***COSME-FLIX original*** formulation especially created to guide you through the winning immortal cosmetics trend in an elevated but playful way around the concept of 'zombie' cells.

With a formula like our Skin Reviving Antidote (containing a **2% of Altheostem™**) your product will be hacking the power of biotechnological plant stem cells to eliminate zombie cells sustainably and selectively, bringing a new kind of rejuvenating hyper-efficacy to the table.

Moreover, this emulsifier-free emulsion was designed to target the premium and sustainable-seeker well-aging consumer, with the delicate silky skin feel and many other activities that our selected range of CareMotives™ add to the formula:

- Hazelnut oil helps to repair the skin barrier thanks to its remarkably high oleic oil proportion (up to 90%).
- Grape seed oil is rich in polyphenols which are free radical scavengers.
- Black Baccara rose is a symbol of elegance and brings a pleasant velvet feel and instant skin glow due to its content on anthocyanosides whose main power is to improve blood circulation.

For more technical inspiration, download the formulation file on our website, and to quickly sightsee the formulation process, click on the image below!



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