

Plant Stem Cell Extracts have Anti-aging Effects

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Editorial

Skin ageing is a multi-layered process that encompasses all of the epidermis and dermis layers. This process is influenced by both internal and external variables. UV radiation, which promotes photoaging of the skin, is the most significant external component in skin ageing. UV radiation causes the breakdown of unsaturated lipids in the intercellular cement, holes in the skin's lipid barrier, and increased TEWL, as well as changes in the structure of fibrillar proteins—collagen and elastins.

Physiological problems in the rate of epidermal exfoliation, obstruction of tissue regeneration, and inhibition of tissue development and differentiation processes are among the internal causes that induce alterations in skin structure. The diminished activity of stem cells, among other things, contributes to the skin's reduced regeneration ability. Human cells are limited in their proliferation by two mechanisms: replicative ageing, which is linked to changes in the structure and length of telomeres, and premature ageing, which occurs without obvious telomere modifications.

Cells having a high proliferation potential, such as fibroblasts, are characterised by the first of the pathways outlined above. It starts with the uncapping of the telomere loop structure and continues with the loss of telomeric repeats. The end-replication issue, or the inability of the DNA polymerase to completely synthesise a daughter strand on the parental lagging strand matrix, is thought to be the cause of this phenomena.

In addition to the end-replication issue, long-term exposure of cells to stimuli, particularly oxidative stress, may result in the gradual loss of telomeric DNA. Damage to the especially susceptible oxidation sequence, which is rich in guanine, at the ends of 3' telomeres is one of the direct effects of DNA exposure to reactive oxygen species. As a result, replication is instantly halted, and telomeres are shortened as a result. Methods to strengthen and protect skin cells are being investigated in order to delay skin ageing.

Modern anti-aging cosmetics strive to enhance the appearance of the skin by activating and rejuvenating natural physiological processes that improve skin condition and protect the skin from ageing influences, regardless of age. As a result, anti-aging cosmetics include ingredients that shield the skin

from the sun. Vitamins E and C, coenzyme Q10, carotenoids, or polyphenols and flavonoids found in plant extracts are among the second category of components found in such cosmetics that neutralise free radicals.

Nucleic acids, protein hydrolysates, algal extracts rich in microelements, EFA plant oils, notably oils from cereal germs, oenothera oil, borage oil, and alpha hydroxy acids with keratolytic and softening actions are among the substances that regenerate and postpone skin ageing. Phytohormones, cytokines, and neuropeptides are among the most recently popular substances. Stem cells and their potential in the promotion of epidermal stem cell proliferation have received a lot of interest in recent years.

Currently, European legislation restricts the use of human and animal compounds derived against their welfare origin due to ethical concerns, and the beauty sector is interested in plant resources. Plant stem cells have been shown to protect human stem cells, stimulate skin regeneration, and slow down the ageing process of the skin [1-5].

Conflict of Interest

None.

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