innovating for your success

mibellebiochemistry

PhytoCellTec™ Malus Domestica

Revolutionary anti-aging active based on plant stem cells – protects and stimulates skin stem cells and prevents chronic skin aging

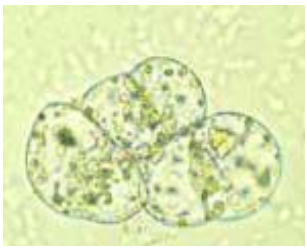
SWISS QUALITY PRODUCT

Mibelle Biochemistry Switzerland is launching a completely new cosmetic active based on plant stem cells at the in-cosmetics 2008 in Amsterdam.

Following their motto „inspired by nature - realized by science" Mibelle Biochemistry has established a new way to combine nature and science and so to obtain new raw materials derived from plants that were not previously available.

The Technology (Cell Culture with Plant Stem Cells)

Mibelle Biochemistry started investigating plant cell culture technology (PhytoCellTec™) some years ago in their lab and built a corresponding bio-technical center for production. Plant cell culture technology makes it possible to breed plants in form of cells that are difficult to harvest in nature, either because they are protected or rare, or subject to large seasonal variations. Starting from a small piece of the plant, e.g. a leaf, the so-called callus cells can be obtained. These dedifferentiated cells can be propagated first on agar plates and then in liquid cultures. Establishing the appropriate stable culture can be very difficult and may take 1 – 2 years. This technology can theoretically be used to propagate any plant in the form of cells in liquid cultures, opening up many possibilities.



Plant cells in suspension

The Story (Old Types of Swiss Apples)

In Switzerland, fruit-growing has a long tradition. Using apples that can be stored over the winter was earlier of great significance as a rich source of vitamins. Therefore the storage stability of apples was then most important.

The „Uttwiler Spätlauber" was widely grown in those days because this apple could be stored for a long time due to its high tannin content and long-life cells. However, this type of apple is today almost extinct. It has been replaced by apples that taste better since storage stability is no longer important.

Mibelle Biochemistry established plant cell culture from the few trees that still exist. This sort of apple, that in principle only existed on postage stamps, is again available in substantial quantities in form of plant cell cultures to the cosmetic industry.

Uttwiler Spätlauber

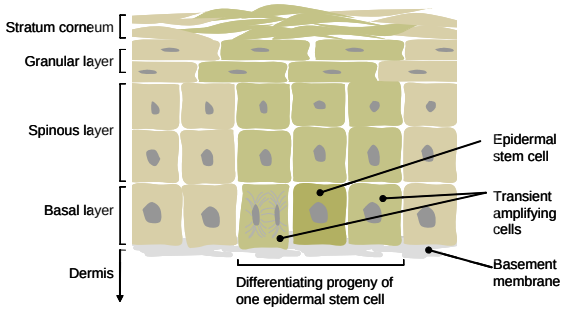
The Use (Stem Cells in Cosmetics)

Mibelle Biochemistry developed callus cells from a sample of apple flesh and propagated these in liquid culture. These dedifferentiated cells correspond to stem cells. A whole apple tree can be grown from these plant stem cells using the appropriate means.

Research with human embryonic stem cells is very controversial. Therefore, one tries to work with adult stem cells. In the skin, there are at least 2 types of adult stem cells:-

1. Epithelial stem cells in the basal layer
2. Hair bulge stem cells in the hair follicle

The protection and longer life of these skin stem cells is the basis of the newest research in cosmetics. The use of plant stem cells to protect skin stem cells is the basis of the new active substance „PhytoCellTec™ Malus Domestica“ from Mibelle Biochemistry (patent pending). The use of a special apple extract derived from long-life, tannin-rich cells and the epigenetic factors of the stem cells is completely new and is a pioneering step in the use of stem cells in cosmetics.



Model of a skin layer with epidermal stem cells

The Effect

The new substance „PhytoCellTec™ Malus Domestica“ from Mibelle Biochemistry was investigated in various experiments. In-vitro experiments showed that the substance promoted the growth of human mesenchymal stem cells and protected them against UV attack. In further experiments with hair follicles, it was shown that the apple stem cell extract delayed the senescence of the follicle cells and so led to a rejuvenation of the cells.

Claim

PhytoCellTec™ Malus Domestica offers completely new possibilities in cosmetics. Using plant stem cells, skin aging can be delayed due to the protection of the vital skin stem cells. The skin remains young longer and looks correspondingly better. Also new possibilities are open in hair care. „PhytoCellTec™ Malus Domestica“ protects the hair stem cells and so prevents early balding and delays graying of the hair.

SWISS QUALITY PRODUCT