

protocell

bio-active stem cell skin care

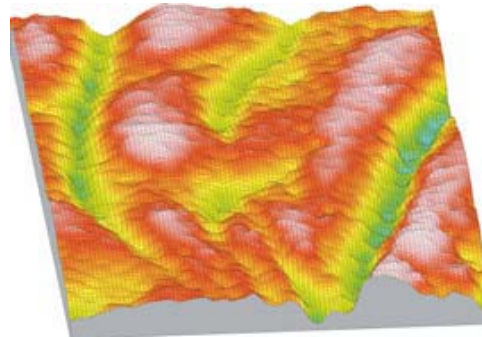
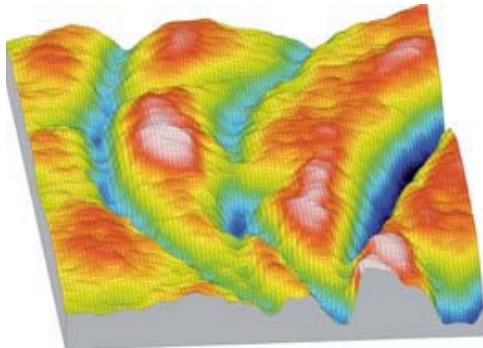
Protocell Clinical Studies

The anti-wrinkle effect of PhytoCellTec Malus Domestica was evaluated in a study with 20 volunteers aged from 37 to 64. An emulsion of 2% of PhytoCellTec Malus Domestica was applied twice daily for 28 days to the crow's feet. Wrinkle depth was determined by means of PRIMOS (phase-shifting rapid in vivo measurement of skin). Results showed a significant and visible decrease in wrinkle depth for 100% of the subjects.

Before (Day 0)



After (Day 28)



*A clinical study conducted by Val de Vire bioactives showed a reduction of wrinkle depth with a formula containing 0.4% of Pomactiv Hfv applied during 28 days (apple seed oil). Results showed a 50% reduction of wrinkle depth at cross foot level on Day 28.

Day 0



Day 14

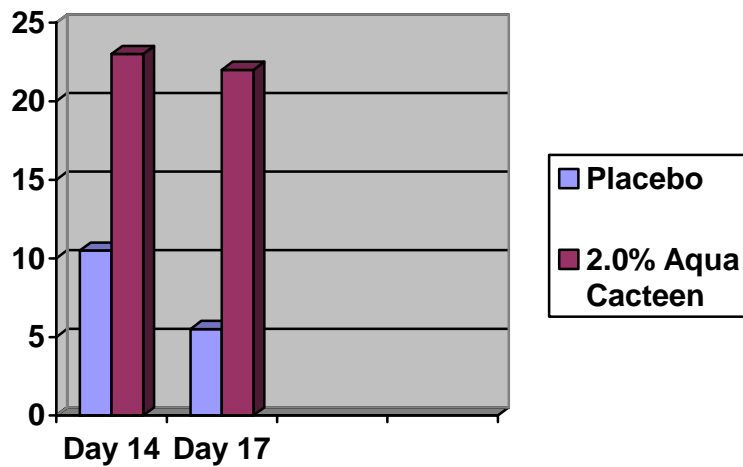


Day 28

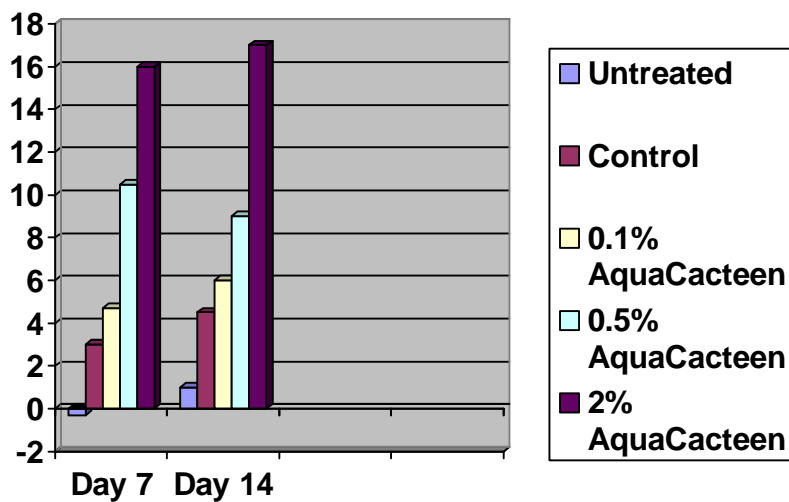


Study Results:

*Increase in skin firmness with 2% AquaCacteen, studied by Mibelle AG Biochemistry



*Increase in skin hydration with a shower gel containing AquaCacteen, studied by Mibelle AG Biochemistry



Val de Vire (Cider Apple)

Pomactiv Hfv regulates the action of grow factors (Cytokines) responsible for tissue repair and renewal.

Significant modifications of collagen genes expression: Correct Collagen Formation: wrinkles reduction and dermal repair of aged skin, improved skin elasticity and tonicity.

Anti-wrinkles evaluation:

study made on 20 women aged (35 - 60 years)

Application during 4 weeks of an anti-age cream containing 0.4% pomactiv hfv

Results: evaluation of wrinkle depth at crow's foot level measured by profile of lines on D0, D14, D28

-18% of wrinkles depth on D14

-20% of wrinkles depth on D28

Improvement of skin roughness (-8% D14, -16% D28)

Lipogenesis inhibition:

Control - adipocytes cells on differentiated

Adipocytes differentiated without pomaceo cqr - cellular lipids accumulation

Adipocytes differentiated with pomaceo cqr after 11 days of culture - cellular lipids decrease *

Anti-cellulite/firmness evaluation:

Study made on 20 women having noticeable cellulite on thighs. Application during 4 weeks of a slimming gel containing 0.4% pomactiv hfv. Subjective results - noticeable improved skin elasticity on D28, significant reduction of orange peel effect D14 and 28, improved smooth skin aspect D28

PhytoCellTec Malus Domestica:

Maintenance of Stem Cell Growth -

An in-vitro test was conducted on umbilical cord blood stem cells with Malus Domestica stem cell extract which is the active component of PhytoCellTec Malus Domestica. Umbilical cord blood stem cells (UCBSC) are the "youngest" safely available stem cells for research. The influence of Malus Domestica stem cell extract on UCBSC artificial growth was evaluated by counting the cell number after incubation. Results showed that Malus Domestica stem cell extract has a positive effect on UCBSC's artificial growth thus maintaining the growth and proliferative activity of UCBSC.

Protection against UV Radiation -

A second in-vitro test was conducted on umbilical cord blood stem cells with Malus Domestica stem cell extract which is the active component of PhytoCellTec Malus Domestica. The protective effect against UV damage of Malus Domestica stem cell extract on UCBSC was evaluated by an MTS assay. UCBSC were incubated with different concentrations of Malus Domestica stem cell extract for 24 hr and then exposed to UV radiation. The MTS assay, which measures the number of living cells and therefore the damage from UV, was performed 48 hr after UV radiation.

Results showed the capacity of Malus Domestica stem cell extract to protect UCBSC from UV damage even at low concentrations.

Effect on Gene Expression in Senescent Dermal Fibroblasts -

Recently a cellular model for premature senescence was established based on normal human dermal fibroblasts. After 2 hrs of treatment with H2O2, the cells showed typical signs of senescence. This model was used to prove the anti-senescence effect of Malus Domestica stem cell extract. After the H2O2 treatment, the fibroblast cells were incubated with a 2% extract for 144 hrs. Then gene expression was analyzed with a DNA array system comprising 150 probes.

Results showed that Malus Domestica stem cell extract can up-regulate specific genes involved in delay of senescence, protection against oxidative stress, and repair of DNA.