OXYCELL®

Metabolic regulator

FILATOV OR THE PRINCIPLE OF TISSUE THERAPY

In 1913, Professor Filatov, a Russian ophthalmologist, developed a transplantation technique based on placenta tissue implants in order to stimulate the body's vital reactions. As in many scientific discoveries, innovations are sometimes purely a matter of chance.

Pr Filatov

At the time, Filatov practised fresh corneal transplants to help ensure that patients' vision was restored as much as possible. However, on each occasion, this hope was dashed because the implant turned opaque and the patient gradually became blind again! This was up until the day when, instead of fresh cornea, tissues preserved in ice were used. Professor Filatov observed to his amazement that the implant resisted well and that remission could be achieved!

Filatov thus developed the hypothesis that implants preserved in ice and **under conditions of sufferance,** could trigger the appearance of new molecules, namely the BioStimulins. These self-defensive substances could be secreted by tissues to counter aggression and to repair damaged elements.

Numerous scientific studies were thus set in motion. There are various data relating to the effect of such products on the body such as, for example: the effects of healing, the improvement of circulatory disorders, an exhilarating effect in patients, a decrease in fatigue levels and an enhanced appetite, etc.

By extrapolation, the human and animal Filatov placenta extracts found themselves propelled, over the decades, to the ranks of skin regeneration substances, which after all, is perfectly normal given the role played by the placenta in mother-fœtus interactions.
A new hope dawned: to rejuvenate and enhance the appearance of the skin.

WHEN PLANTS REPLACE ANIMALS…

As animal resources have long since been catapulted onto the accused bench, mankind has turned to Nature to find a substitute for the placenta extracts. Solabia Group scientists mainly directed their research towards seeds of corn, basing their work on the principle that seeds naturally contain all the substances needed to promote the development of the germ or "plant embryo". Furthermore, if we give it some considerable thought, aren't seeds to the germ what the placenta is to the foetus?

OXYCELL,
CORN PHYTOSTIMULINS,
SKIN AND CAPILLARY REGENERATION FACTOR!

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COMPOSITION

Oxycell® is obtained according to the Filatov method by placing the corn seeds under stress (cycle of freezing/thawing in succession) followed by an autoclaving stage at 120°C (the phytostimulins are heat-resistant) and various filtrations (purification of phytostimulins). The Oxycell® product is available in several forms.

OXYCELL® C	:	Placenta Filatov vegetal extract containing 12 g/l (dry extract) *Preserved by 0.2% Phenonip*
OXYCELL® ST	:	Placenta Filatov vegetal extract containing 12 g/l (dry extract) *Sterile, without preservative*
OXYCELL® LYO	:	Placenta Filatov vegetal extract *Lyophilised*
CTFA name	:	Water* (and) Zea mays (corn) kernel extract

** except for Oxycell Lyo*

CORN, THE PLANT WITH GOLD SEEDS

Originating from Central America, the corn (*Zea mays* – "Zea" coming from the Colombian botanist, Zea Francisco), originates from a graminae - teosinthe. Nicknamed "Ma-Hiz" by the American Indians and then "maize", pre-Columbian maize hardly resembled the corn that we consume nowadays. With its ears that are a few centimetres long and bearing only a few seeds, the corn has undergone extensive changes through the ages (by crossing different plants) thanks to the hard work of the American Indians and the people of the new world.

Corn is surrounded by several traditions and anecdotes. In Aztec mythology, during the creation of the world, the Sun exploded and provided mankind with a reign of golden fragments, which turned into corn seeds on touching the earth. The "Maize" god was also held in high esteem because he was considered to be the God of Life…

PHYTOCHEMISTRY

According to the bibliography, the seeds of corn mainly contain:

- **fats**: a wealth of unsaturated fatty acids (oleic and linoleic acid) and saturated fatty acids (palmitic and steric acid)
- **proteins** (9% on the whole)
- **sugars**
- **mineral salts:** magnesium, calcium, phosphorus, potassium, iron
- **vitamins:** A, B1 and E

The exact nature of phytostimulins still remains unclear to this day. However, the presence of mineral and amino acid components has been described. Phytostimulins are characterised by their heat stability and their solubility in water.

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CELL RESPIRATION

A basic physiological process in any living animal cell, cell respiration groups together a series of complex reactions, the aim of which is to produce energy that can be used by the cells to ensure their metabolism and therefore their survival. In fact, the oxygen taken up by the cells will serve to oxidise the metabolites in order to create energy, rather like the way in which a fire produces all its heat by consuming oxygen and degrading the organic material (wood). However, at cell level, the energy arising from respiration is not lost in the form of heat but converted into chemical energy in the form of ATP during oxidative phosphorylation.

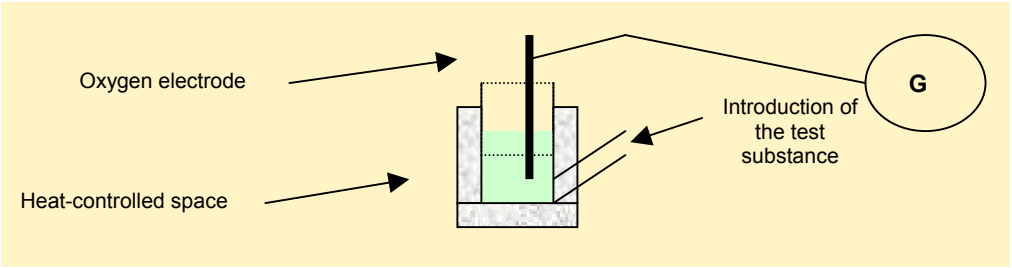
Cell respiration takes place in particular within a specialised organite, the mitochondria (*see photograph opposite).*

Evaluation method

The measurement of the effect of a substance on the stimulation of cell respiration can be manifested by measuring the quantity of oxygen consumed: it is the very principle of oxygraphy – the reference method used to assess the efficacy of Filatov placenta extracts.

The method involves measuring the oxygen pressure of the survival medium in which the living cells have been immersed (murine liver cells), in the presence or absence of the test substance. This measurement is recorded by means of an oxygen electrode (Clark electrode) linked to a galvanometer.

A negative electric current is applied to the cathode involving the oxidoreduction of the oxygen molecules found inside. The resulting current is then transmitted to the galvanometer (G). At a constant temperature, the current produced in this way is proportional to the oxygen pressure in the medium in which the electrode is immersed.



In the presence of live, oxygen-consuming cells, the pressure falls and this decrease is registered over time in order to establish the oxygen consumption of the cells at a given time.

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▲ PERFORMANCES

✓ ON THE STIMULATION OF CELLULAR BREATHING

(Oxygraphic assay based on murine liver cells immersed in Ringer liquid and kept at 38°C for 10 minutes / Oxygen pressure measured over time with calculation of the cell oxygen consumption / Concentration of Oxycell LYO tested: 1.2 g/l which is equivalent to a 10% Oxycell ST and C concentration)

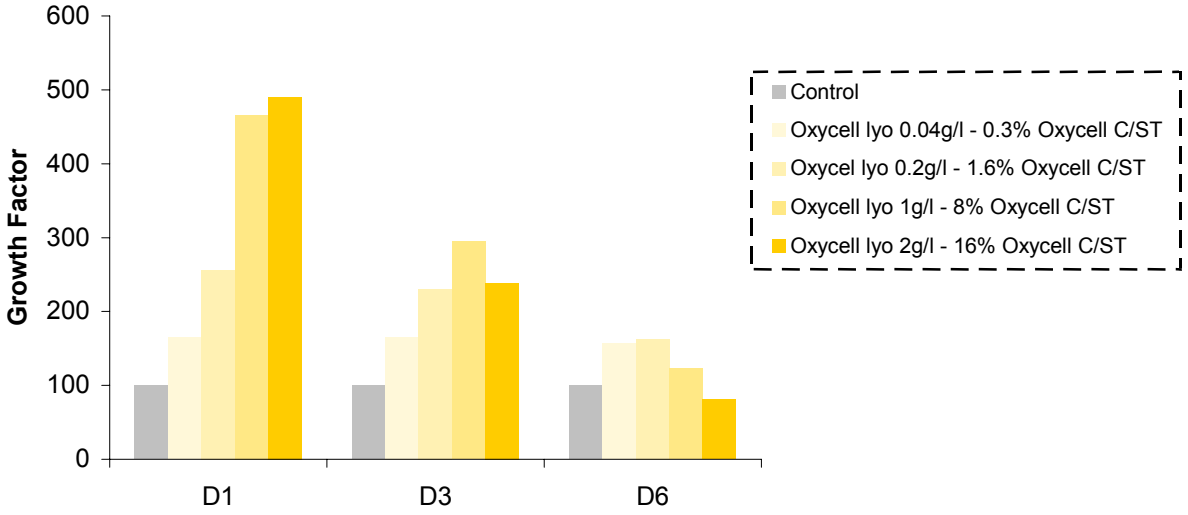
O_2 consumption in ppm	Control	**Oxycell LYO**
■ Average	0.72	1.56
■ Standard deviation	0.15	0.15
■ **Stimulation / control**	-	116%

The oxygraphic unit is defined as being the activity of the quantity of extract producing a 1% oxygen increase in 10 minutes for a quantity of murine liver cells capable of consuming 1 ppm of oxygen over the same length of time.

Comparison Oxycell / Bovine Placenta Filatov extract	**Oxygen consumption in oxygraphic units (Uox/g)**
■ Oxycell lyo (1.2 g/l)	295
■ Bovine lyo Placenta Fil. Extract (1.2 g/l)	118

✓ ON THE STIMULATION OF HUMAN FIBROBLASTS GROWTH

(Normal human fibroblast culture in a culture medium to which fœtal calf serum (3%) has been added up to semi-confluence followed by cell incubation at 37°C in a new medium in the presence of various Oxycell lyo concentrations. Monitoring of cell density after 24 hours, 3 and 6 days by determining the number of live cells (colorimetric MTT test) and calculating the growth value (No. of treated cells – No. of cells on D0 / No. of control cells – No. of cells on D0).



	Concentrations Oxycell lyo			
	0.04 g/l	0.2 g/l	1 g/l	2 g/l
Stimulation / control D1	+ 16%	+ 37%	+ 87%	+ 93%
Stimulation / control D3	+ 36%	+ 71%	+ 106%	+ 75%
Stimulation / control D6	+ 45%	+ 50%	+ 18%	-

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