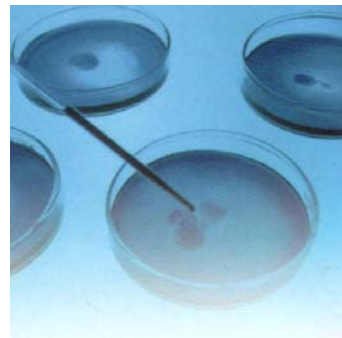


Scientific Backgrounder

Information for health care professionals only

BIOREJAN New Biotechnological Advanced in Rejuvenation and Immune Support



Exclusive formula
processes by:

Atrium Biotechnologies
– Quebec – Canada

for Holiterapias
– Lisbon – Portugal

New biotechnological advance with the application of BIOREJAN in rejuvenation and immune support

**BIOREJAN opens the door to a new
technically advanced nutritional
support**

Biorejan is the most advanced nutritional support, containing three fresh-cell extracts combined, from sources rich in pluripotential cells (stem cells)

- mesenchyme extract (60%)
- spleen extract (20%)
- umbilical cord extract (20%)

These molecular extracts are highly bio-available and of the highest quality available on the market today.

This unique preparation has been formulated by Serge Jurasunas based on over fifteen years experience of using embryological frozen organ extracts from bovine (and subsequently porcine) sources, such as spleen, liver, thymus and umbilical cord, to regenerate tissues and cells and act as an immune booster. He was probably the first integrative healer and pioneer to use umbilical cord as a cellular replacement.

New technology and new formula

The new idea is to use a blend of mesenchyme, spleen and umbilical cord through a patented process in which the extracts are enriched in small proteins and peptides normally found in the cells that compose each of these organs.

Stem cells in modern medicine

Today stem cells are gaining major interest in the scientific international community as an answer to the increasing levels of chronic and degenerative diseases and have been called the “cells of hope”.

According to medical science, many common degenerative diseases are a consequence of the failure of just one of the two hundred cell types that make up the body. As an example, diabetes is caused by the failure of islet cells in the pancreas to produce enough insulin and use of drugs has had limited success here as well as in the treatment of cancer.

What are stem cells?

Stem cells are self – renewing, pluripotent cells found in both the foetal and adult tissues of mammals. Stem cells have the ability to divide for indefinite periods in culture and to give rise to specialised cells.

Mesenchymal stem cells, for instance, have the ability to become almost any kind of cell. During embryonic development, these cells form various organs such the liver, stomach, kidney and tissues such as connective and nervous system tissues.

Cancer

We know that cancer cells are simply stem cells that have been frozen in an “abnormal state” while retaining their self-renewing property.

However a number of observations in this area position us on the threshold of a new age in cellular therapy and tissue regeneration through the use of stem cells from mammalian sources.

The human body is degenerating to such an extent that treating modern degenerative disease has become a real challenge to medicine and calls for biotechnological development. In the field of conventional cancer therapy this new type of approach opens up new perspectives as an adjunct to cytotoxic and destructive therapies.

Usually, conventional chemotherapy for cancer tends to be quite aggressive, with the highest tolerated dose being administered in multiple rounds of treatments, interrupted by periods of recover to limit neurotoxicity and damage to proliferating cells in healthy tissues.

Anaemia, nausea, fatigue, diarrhoea and cardiotoxicity are nevertheless frequent complications of chemotherapy. For instance, the incidence of anaemia can be as high as 90% with some chemotherapeutic agents (Groopman and Itri 1999) and can interfere with drug efficacy, as well as having a negative effect on clinical outcome (Caro et al. 2001).

Chemotherapy is damaging to healthy cells and especially to mitochondria, the powerhouse of cells that synthesise the molecular energy ATP. As a consequence, ROS activity increases while ATP synthesis falls. Now, ATP energy is necessary for synthesis of proteins, hormones and repair enzymes, but also to keep cells away from undifferentiation, i.e. from cancer.

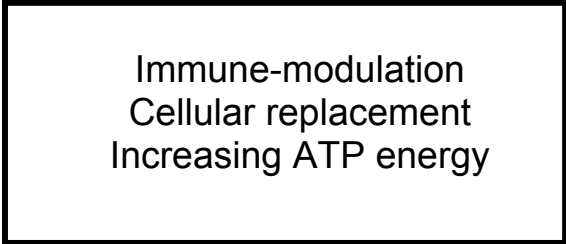
However it has been shown that the cells of most cancers have the potential to differentiate into more mature cells, since cancer cells retain the capacity to express some normal characteristics.

Cancer cells have a high mutation rate and the chances are that a few of them will develop pathways to multi-drug resistance, since at each division cancer cells are less differentiated than their progenitors.

Surgery with the removal of a primary tumor, particularly in breast cancer, is sometimes associated with early relapse and spread to target organs, which is believed to be related to immune deficiency and angiogenic factors.

Prevention is one major move to avoid early relapse and against dormant distant micrometastasis by nutritional supplementation, taken not only during the course of conventional cancer therapies but after remission to avoid such eventualities.

Such handicaps of modern conventional therapy call for a new approach such



Immune-modulation
Cellular replacement
Increasing ATP energy

Mesenchymal extract

Mesenchymal extract is prepared from mammalian extra-embryonic connective tissue. Mesenchymal stem cells are undifferentiated cells which, when triggered under appropriate conditions, can become almost any type of cell to help restore damaged or aging tissues (Caplan 1994). Mesenchymal stem cells liberate active molecules, which are then selectively isolated through a special patented process to obtain a mesenchymal liquid extract providing a rich, natural source of cellular growth factors and other signalling molecules.

Additionally, it has been demonstrated that mesenchymal extract has the ability to increase mitochondrial metabolism. In vitro experiments (Atrium Biotechnologies 2003) have demonstrated that mesenchyme exhibits a biological property of inducing aerobic respiration and promoting ATP energy production, while reduced mitochondrial oxidative phosphorylation directly affects ATP synthesis. The glycolytic pathway of the cancer cell does not require a large supply of oxygen, as their main source of energy fuel is only 5% obtained from foodstuff by utilising a large amount of glucose.

Mesenchymal stem cells are a rich source of cellular growth factors and other signalling molecules.

Mesenchymal extract enhances healing and repair of damaged or slow-to-heal tissues. For instance after surgery, such as mastectomy or for colon cancer, that is frequently difficult to heal, mesenchymal extract promotes rapid healing.

ATP energy is vital to activate all cellular functions such as division, differentiation, cellular repair and apoptosis, and must be stimulated as part of a comprehensive cancer treatment. As a metabolic booster, mesenchymal cell extract may help to restore the body's energy level in patients and increase their quality of life.

The spleen is a secondary lymphoid organ where immune responses can be initiated. The spleen filters the blood and during the process traps antigens from the bloodstream. Naïve lymphocytes that have matured in the thymus (T-lymphocytes) and the bone marrow (B-lymphocytes) enter the spleen with the bloodstream and are arrested and activated while first presented

with foreign antigens (acquired immunity) Natural Killer Cells, which are sentinels for innate immunity, are also activated in the spleen, from where they are mobilized during immune responses. A series of case reports in the early 1930's demonstrated that orally administered splenic extracts were able to increase white blood cell counts in individuals with extremely low counts. More recent research has documented natural killer cell activation in vitro.

Umbilical cord

Umbilical cord is a plentiful and rich source of stem cells, the building blocks of our immune system and the “mother cells” that lead to the production of all the various types of cells in the blood.

In a healthy organism, stem cells act as a source of new cells during tissue repair. Stem cells are capable of both self-renewal and clonal expansion and so are virtually immortal. Not surprisingly, stem cells are present in high numbers in tissues that constantly renew their population, such as the bone marrow and intestinal lining. Bone marrow cells have a turnover rate of approximately five days, which explains why chemotherapy is an insult since it kills the stem cells that renew blood cells.

Therefore umbilical cord may prevent chronic anaemia and leucopenia during frequent chemotherapy, may protect and renew healthy tissue and may manipulate gene expression to alter the degree of differentiation of cancer cells that display fewer malignant characteristics.

Biorejan is an exclusive formula developed by Serge Jurasunas and produced by Atrium Biotechnologies (Quebec) Canada for Holiterapias – Lisbon – Portugal.

Biorejan protein and peptide liquid extracts are offered in frozen form. Manufactured and purified at low temperature in a special fractionation process, they are kept frozen until use in order to preserve the structure and properties of the proteins.

Biorejan

1 bottle contains = 7 ml

Porcine Mesenchyme Aqueous extract	4.2ml
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Porcine Spleen Aqueous extract	1.4ml
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Porcine Umbilical Cordon Aqueous extract	1.4ml
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Suggested use:

As dietary supplement take one bottle of Biorejan per day as indicated on the box.

BIOREJAN is available for clinics, hospitals of complementary alternative medicine, doctors and patients of European countries.

Shipment is made through special 24 hours delivery of frozen substance such FEDEX courier.

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