

MEDICINAL USE OF HUMIC SUBSTANCES

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Long before chemical formulae to cure diseases were developed, man discovered the healing powers of plants in nature. Today, the world goes back to Mother Nature and is rediscovering the value of natural products.

Humic acids are formed from the decomposition of plants and occur naturally in drinking water, peat, soil and brown coal (leonardite and lignite) and have been used to stimulate plant growth for many years. The richest source of humic acid is found in leonardite formed at the bottom of prehistoric lakes and valleys "only" 15-25 million years ago and is the "youngest" part of brown coal. Humic acid can also be extracted from peat or produced by controlled wet oxidation of bituminous coal.

Mud baths, rich in peat, were used to treat various ailments such as **rheumatic conditions**, in man during the 19th century. Peat was also used during the First World War to treat wounds and amputations externally in field hospitals to **prevent infections, relieve pain and facilitate healing**.

It has been documented in scientific literature 38 years ago that extracts of peat were given as a **tonic for liver and gastric ailments**. Various toxicity studies and clinical trials have been conducted since, indicating that it is well tolerated by man with no serious side effects reported.

Only a few humic acid based medications are commercially available world-wide. Their therapeutic properties have been documented as **antibacterial, antitoxic, anti-ulcerogenic, anti-arthritic, anti-allergic and anti-inflammatory**. A clinical trial indicated that humates improve the clinical condition of **osteoarthritis** patients due to its **anti-inflammatory and bone regenerating** properties. Various studies published in international scientific journals have also shown that humate can **absorb toxic compounds such as carcinogens, poisons and toxic metals** and is therefore described as an **anti-toxin**.

A research team, lead by Prof Medlen (publishes as C.E.J. van Rensburg) from the Department of Pharmacology, Faculty of Health Sciences, University of Pretoria has been involved with mechanistic studies on potassium humate the last few years. They have found that this product stimulates specific lymphocyte functions that are important in dealing with opportunistic infections by increasing the production of an important growth factor called interleukin-2. This response was even more striking in the case of lymphocytes obtained from patients with a decreased immunity.

Results by the same team also indicated that humates **inhibit the binding of inflammatory cells** to specific "sticky" molecules on the walls of blood vessels in the vicinity of inflammation. Another interesting finding by this team was that **humates inhibit the release of certain substances by white blood cells that are responsible**

for the tissue damage seen at the site of inflammation. In this way **humates will therefore protect areas of existing inflammation** from suffering more serious damage **by stopping inflammatory cells from sticking to the nearby blood vessels and depositing toxic substances in tissues** already suffering from the effects of previous attacks by these cells.

Research done by Pretoria University as well as various other research teams have pointed out that humates also possess **anti-viral activity**. This activity has been demonstrated on the **fever blister virus, the influenza virus as well as HIV**. The mechanism by which humates inhibit these viruses is by **preventing the adsorption of the virus to cell surfaces**.

In conclusion, humates have been shown to **stimulate the specific immune system** (important in coping with opportunistic infections), **inhibit inflammatory reactions, inactivate the growth of certain viruses and protect against environmental toxins**. **This combination of beneficial effects in one compound appears to be unique and makes it an ideal compound for the protection of man against diseases associated with viral and other opportunistic infections as well as inflammatory conditions such as auto-immune diseases and allergies.**