# Systemic Enzyme Therapy and Pulmonary Fibrosis

**SERRACOR-NK (SEBkinase)**

***What is Pulmonary Fibrosis?***

" Fibrosis" is a term used to refer to scarring, so pulmonary fibrosis means scarring throughout the lungs. Pulmonary fibrosis can be caused by many conditions including chronic inflammatory processes (sarcoidosis, Wegener's granulomatosis ), infections, environmental agents (asbestos, silica, exposure to certain gases), exposure to ionizing radiation (such as radiation therapy to treat tumors of the chest), chronic conditions (lupus, rheumatoid arthritis), and certain medications.

In a condition known as hypersensitivity pneumonitis, fibrosis of the lung can develop following a heightened immune reaction to inhaled organic dusts or occupational chemicals. This condition most often results from inhaling dust contaminated with bacterial, fungal, or animal products.

In some people, chronic pulmonary inflammation and fibrosis develop without an identifiable cause. Most of these people have a condition called idiopathic pulmonary fibrosis (IPF) that does not respond to medical therapy, while some of the other types of fibrosis, such as nonspecific interstitial pneumonitis (NSIP), may respond to immune suppressive therapy.

Synonyms (other names) for various types of pulmonary fibrosis that have been used in the past include chronic interstitial pneumonitis, Hamman-Rich Syndrome, and diffuse fibrosing alveolitis.

***What are pulmonary fibrosis symptoms?***

Symptoms of pulmonary fibrosis include shortness of breath, coughing and diminished exercise tolerance. The severity of symptoms and the progression (worsening) of symptoms over time can vary and are at least partially dependent upon the cause of the fibrosis.

***How is pulmonary fibrosis diagnosed?***

Pulmonary fibrosis is suggested by a history of progressive (worsening over time) shortness of breath with exertion. Sometimes, during examination of the lungs with a stethoscope, the doctor can hear crackling sounds in the chest. The chest x-ray may or may not be abnormal, but a special x-ray test called a high resolution CAT scan will frequently demonstrate abnormalities. Lung function testing is distinctly abnormal.

The diagnosis can be confirmed by lung biopsy. An open surgical biopsy, meaning that the chest wall must be surgically opened under general anesthesia to remove a portion of lung tissue, may be necessary to obtain enough tissue to make an accurate diagnosis. The removed tissue is examined microscopically by a pathologist to confirm the presence of fibrosis.

***How is the pulmonary fibrosis treated by the medical community ?***

The treatment options for idiopathic pulmonary fibrosis are very limited. There is no evidence that any medications can help this condition, since scarring is permanent once it has developed. Lung transplantation is the only therapeutic option available. At times, this diagnosis can be difficult to make even with tissue biopsy reviewed by pathologists with specific experience in this field. Research trials using different drugs that may reduce fibrous scarring are ongoing. Since some types of lung fibrosis can respond to corticosteroids (such as Prednisone) and/or other medications that suppress the body's immune system, these types of drugs are sometimes prescribed in an attempt to decrease the processes that lead to fibrosis.

The immune system is felt to play a central role in the development of many forms of pulmonary fibrosis. The goal of treatment with immune suppressive agents such as corticosteroids is to decrease lung inflammation and subsequent scarring. Responses to treatment are variable. Once scarring has developed, it is permanent. Those whose conditions improve with immune suppressive treatment probably do not have idiopathic pulmonary fibrosis.

The toxicity and side effects of treatments can be serious. Therefore, patients with pulmonary fibrosis should be followed by a lung specialist experienced in this condition. The lung specialist will determine the need for treatment, the duration of treatment, and will monitor the response to therapy along with any side effects. Only a minority of patients respond to corticosteroids alone, so other immune-suppressing medications are used in addition to corticosteroids. These include gamma-interferon, cyclophosphamide, azathioprine, methotrexate, penicillamine, and cyclosporine. The anti-inflammatory medication colchicine has also been used with limited success. Ongoing trials are underway using newer drugs such as gamma interferon, mycophenolate mofetil (Cellcept), and pirfenidone.

Pulmonary fibrosis can cause decreased oxygen levels in the blood. A decrease in blood oxygen level (hypoxia) can lead to elevated pressure in the pulmonary artery (the vessel that carries blood from the heart to the lungs to receive oxygen), a condition known as pulmonary hypertension, which can in turn lead to failure of the right ventricle of the heart. Therefore, patients with pulmonary fibrosis are frequently treated with supplemental oxygen to prevent pulmonary hypertension.

There is also evidence that patients suffering from pulmonary fibrosis may be at increased risk for blood clots that travel to the lung (pulmonary emboli), and therefore anticoagulation (blood thinning) therapy may be indicated.1

## ***A new approach against Pulmonary Fibrosis?***

### *Eat Away Pulmonary Fibrosis Scar Tissue*

Pulmonary Fibrosis literally means lung (pulmonary) scarring (fibrosis). The lung scarring occurs in the tissue of the lung called the interstitium, which supports the structures of the lung (air sacs/alveoli). There are an estimated 130-200 related diseases called Interstitial Lung Disease that are similar in characteristics and can result in scarring. Pulmonary Fibrosis causes the lung tissue to thicken and become stiff. Scarring inhibits oxygen from entering the blood stream. 2

### *The research behind Enzyme Therapy for Pulmonary Fibrosis?*

Serrapeptase has been in use since 1979. Since then the effacous anti-inflammatory response with the use of Serrapeptase has been shown not only as new way to eliminate fibrin or fibrous formations in the body systemically but is showing promising results for Chronic inflammation in the lungs along with the dispelling of mucus in the lining of the arterial walls in the lungs. Studies have shown the positive effects of Serrrapeptase for the use of Pulmonary Fibrosis.

### *Serrapeptase Study #1*

***Effect of the proteolytic enzyme serrapeptase in patients with chronic airway disease.***

OBJECTIVES: The proteolytic enzyme serrapeptase (SER) is widely used in clinical practice in Japan. We investigated the effect of SER on sputum properties and symptoms in patients with chronic airway diseases. METHODS: This study was an open-labelled trial with a non-treatment control group. Patients were randomly assigned to oral treatment with (n = 15) and without (n = 14) SER 30 mg/day for 4 weeks. Patients collected sputum samples for about 4 h in the morning on the day the trial began and 4 weeks later. We measured the amount of sputum by weighing. Part of each sputum sample was weighed and then completely dried and reweighed. The percentage solid component, viscosity and elasticity of the sputum were measured. Mucociliary transportability index was measured using ciliated bovine trachea ex vivo. Sputum smears were also prepared to count sputum neutrophils. Patients' symptoms were assessed by a questionnaire that used a visual analogue scale. RESULTS: After 4 weeks of SER treatment, sputum weight in the morning, percentage solid component, viscosity and elasticity of sputum, sputum neutrophil count, frequency of coughing and frequency of expectoration significantly decreased. The mean mucociliary transportability index increased from 13.3 +/- 1.8 to 24.4 +/- 2.5 (P = 0.0103). CONCLUSIONS: SER may exert a beneficial effect on mucus clearance by reducing neutrophil numbers and altering the viscoelasticity of sputum in patients with chronic airway diseases.3

***Serrapeptase Study #2***

***Evaluation of Serratia peptidase in acute or chronic inflammation of otorhinolaryngology pathology: a multicentre, double-blind, randomized trial versus placebo.***

The efficacy and tolerability of Serratia peptidase were evaluated in a multicentre, double-blind, placebo-controlled study of 193 subjects suffering from acute or chronic ear, nose or throat disorders. Treatment lasted 7-8 days, with the drug or placebo being administered at a rate of two tablets three times a day. After 3-4 days' treatment, significant symptom regression was observed in peptidase-treated patients. There was also a significant reduction in symptoms after 7-8 days for patients in both treatment groups but the response was more marked in those patients receiving the active drug. Statistical comparison between the two groups confirmed the greater efficacy and rapid action of the peptidase against all the symptoms examined at both stages. Tolerance was found to be very good and similar for both groups. It is concluded that Serratia peptidase has anti-inflammatory, anti-oedemic and fibrinolytic activity and acts rapidly on localized inflammation.4

Another effacious systemic enzyme Nattokinase has been used by Japanese Pharamaceutical companies for anti-thrombosus and blood anti-coagulation. Nattokinase like Serrapeptase has had a good amount of clinical studies behind it, to prove not only is Nattokinase effective for thinning the blood and reversing the formation of blood clots but it has shown to be one of the strongest fibrinolytic activity systemically in the blood stream.

***The use of Nattokinase for Pulmonary Fibrosis***

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***Nattokinase Study #1***

***<u>Nattokinase decreases plasma levels of fibrinogen, factor VII, and factor VIII in human subjects</u>***

Nattokinase, a serine proteinase from Bacillus subtilis, is considered to be one of the most active functional ingredients found in natto. In this study, we hypothesized that nattokinase could reduce certain factors of blood clotting and lipids that are associated with an increase risk for cardiovascular disease (CVD). Thus, an open-label, self-controlled clinical trial was conducted on subjects of the following groups: healthy volunteers (Healthy Group), patients with cardiovascular risk factors (Cardiovascular Group), and patients undergoing dialysis (Dialysis Group). All subjects ingested 2 capsules of nattokinase (2000 fibrinolysis units per capsule) daily orally for 2 months. The laboratory measurements were performed on the screening visit and, subsequently, regularly after the initiation of the study. The intent-to-treat analysis was performed on all 45 enrolled subjects. By use of mixed model analysis, a significant time effect, but not group effect, was observed in the change from baseline of fibrinogen (P = .003), factor

VII (P < .001), and factor VIII (P < .001), suggesting that the plasma levels of the 3 coagulation factors continuously declined during intake; also, the extents of decrease were similar between groups. After 2 months of administration, fibrinogen, factor VII, and factor VIII decreased 9%, 14%, and 17%, respectively, for the Healthy Group; 7%, 13%, and 19%, respectively, for the Cardiovascular Group; and 10%, 7%, and 19%, respectively, for the Dialysis Group, whereas blood lipids were unaffected by nattokinase. No significant changes of uric acid or notable adverse events were observed in any of the subjects. In summary, this study showed that oral administration of nattokinase could be considered as a CVD nutraceutical by decreasing plasma levels of fibrinogen, factor VII, and factor VIII.5

***Nattokinase Study #2***

**Enhancement of the fibrinolytic activity in plasma by oral administration of nattokinase.**

The existence of a potent fibrinolytic enzyme (nattokinase, NK) in the traditional fermented food called 'natto', was reported by us previously. It was confirmed that oral administration of NK (or natto) produced a mild and frequent enhancement of the fibrinolytic activity in the plasma, as indicated by the fibrinolytic parameters, and the production of tissue plasminogen activator. NK capsules were also administered orally to dogs with experimentally induced thrombosis, and lysis of the thrombi was observed by angiography. The results obtained suggest that NK represents a possible drug for use not only in the treatment of embolism but also in the prevention of the disease, since NK has a proven safety and can be mass produced.6

## ***Systemic Enzyme Therapy for Pulmonary Fibrosis***

***What is Systemic Enzyme Therapy?***

People must know that the correct medical name for the therapeutic use of natural enzymes is "Systemic Enzyme Therapy." This means that enzymes flow throughout our body, producing the desired healing effects. For an accurate description of Systemic Enzyme Therapy, one needs to know a little bit about the structure and function of enzymes, in general. You must know that without enzymes, there is no possibility of life, in animals, plants or persons. Enzymes are essential for each and every reaction in a living organism.

Enzymes are catalysts, or rather we should say, "biolcatalysts." We are dealing with determined substances whose presence causes the transformation of an organic substance and it also accelerates it, just as a catalyst would do it. Today we know what these enzymes are and how they act.

At the Program for Studies of Alternative Medicines of the University of Guadalajara (Mexico), we have researched the therapeutic value of these natural proteolytic enzymes in the treatment of acute and chronic clinical conditions. We have had the opportunity of reaffirming that enzymes are catalytically active polymer compounds made of amino acids. They are involved in virtually all of the vital metabolic processes. They set metabolic conversions in track (in train), control

energetic processes and regulate syntheses. Without enzymes, nothing goes on at all within an organism.

It is therefore normal to use enzymes for therapeutic purposes. Substitution in intestinal enzyme deficiency conditions is a classical treatment modality that no one would dispute. External use of enzymes for impaired wound healing (e.g. in the presence of varicose ulcers) has been part of the armamentarium of medical practitioners for centuries.

After many years of experience in analysis and pharmaceutical areas, it was thought that these powerful enzymes could be used in the therapeutic field, too. This way, a new area of enzymatic therapy began. It was applied to alleviate disturbances in the metabolism, that is, impairments in the functions of the organs and to repair genetic faults.

Soon scientists concluded, thanks to these new biochemical tools, that the genetic defects could be corrected or neutralized by means of the application of enzymes. Besides, the genetic defects are enzymatic defects. So far there have been reported in the medical literature more than 150 diseases that are due to enzymatic faults genetically conditioned. This means that the patient's organism does not form a specific enzyme or it manufactures and places a similar enzyme which has only weak activity. This weak enzyme replaces the right one.

***Systemic Enzyme Therapy and its use for Inflammation?***

Enzymes are not anti-inflammatory drugs, instead, they promote the inflammation; this is, inflammation is the marvelous response from our body to a noxious stimulus. Most times we look at inflammation as something bad and to be avoided. It should not be so. It is the way our body is trying to get rid of the harmful foreign agents.

The classical signs of inflammation are; pain, tumor, heat and blush. When inflammation ends, the body repairs the area affected. So, if the inflammation finishes sooner, then the repair will begin earlier. That's the reason why enzymes are promoters instead of inhibitors of inflammation.

Systemic enzyme therapy is a proven method; it diminishes the edema, activates the fibrinolytic system, and stimulates cells like macrophages. The pain and the cramps disappear, swelling goes away, and blood flow increases in a short time. The efficacy of certain enzyme mixtures has been tested by double-blind studies.7,8

## ***SERRACOR-NK and Systemic Enzyme Therapy***

***The formulation:***

***SERRACOR-NK® (SEBkinase®)*** is formulated by the #1 enzyme supplier to the world Specialty Enzymes. They cultivate their own enzymes in a 200 million dollar enzyme manufacturing facility. Once the enzymes pass the many stringent testing qualifications they are then bio fused together into formulations by a team of enzyme researchers and doctors to have the highest enzymatic effect within the body for that specific formulation. Specialty Enzymes has been formulating enzymes formulations for over 75 years and has been the leader in not only the

highest quality enzymes but many of the effective enzyme formulations you seen on the market to date. ***SERRACOR-NK® (SEBkinase®)*** is Specialty Enzymes newest formulation ***(SEBkinase®)*** a fibrin dissolving systemic enzyme blend that will effectively eliminate fibrosis and C-reactive protein within the body. In fact this same exact enzyme formulation has been available for the last 5 years. Now the ***SEBkinase®*** blend is only being sold under the product name ***SERRACOR-NK® .*** This unique formula contains Peptizyme® Specialty Enzymes own trademarked serrapeptase.

***Peptizyme SP®*** is formulated for maximum fibrinolytic activity. Fibrin is a tough protein arranged in long fibrous chains. It is formed from fibrinogen, a soluble protein that is produced by the liver and found in blood plasma. ***Peptizyme SP®*** supports normal fibrin metabolism, thus reducing viscosity and aiding normal blood flow. Fibrin tends to form circulating complexes that build a wall of fibrin around areas of inflammation, creating a barrier for the uptake of healing nutrients. In addition ***Peptizyme SP®*** supports healthy inflammatory response by reducing metabolic inflammation, usually an asymptomatic inflammatory process in response to stress, improper nutrition and other environmental insults. There is also evidence of inhibition of C-Reactive Protein, a marker for inflammation that has been linked to cardiovascular health. 22a, 22b

**SERRACOR-NK® (SEBkinase®)** also contains ***NattoSEB®*** [Nattokinase], also Specialty Enzymes own trademarked and formulated Nattokinase. ***NattoSEB®*** recently a new enzyme with potent fibrinolytic activity that rivals pharmaceutical agent has been discovered and shows great potential in providing support for hyper coagulative states. This all-natural enzyme, ***NattoSEB®*** [Nattokinase], is derived from fermented soy and the bacteria Bacillus Natto. Already, backed by research, ***NattoSEB®*** [Nattokinase] shows promise in supporting areas such as cardiovascular disease, stroke, angina, venous stasis, thrombosis, emboli, atherosclerosis, fibromyalgia/chronic fatigue, claudication, retinal pathology, hemorrhoid, varicose veins, soft tissue rheumatisms, muscle spasm, poor healing, chronic inflammation and pain, peripheral vascular disease, hypertension, tissue oxygen deprivation, infertility, and other gynecology conditions (e.g. endometriosis, uterine fibroids).

Both ***Peptizyme SP®*** (serrapeptase) and ***NattoSEB®*** (nattokinase) are enterically coated and are formulated to an exact milligram for optimal performance in this blend. Digestive enzymes (DigeSEB) are also used in the SEBkinase formula, there purpose is to aid in the enhancement of the formula and should not be taken strictly as a digestive supplement. The last ingredient in ***SERRACOR-NK® (SEBkinase®)*** is Co-Q10 this is in the formula not only as a coenzyme, but to complement the strong cardiovascular benefits of ***SERRACOR-NK® (SEBkinase®)*** 23

***How can SERRACOR-NK® (SEBkinase®) can help for Pulmonary Fibrosis?***

***SERRACOR-NK® (SEBkinase®)*** is a gaining popularity and becoming a promising supplement for people suffering from the harmful and life threatening effects of Pulmonary Fibrosis.

***SERRACOR-NK® (SEBkinase®)*** has encouraging outcome for people suffering from Pulmonary Fibrosis. The combination of Serrapeptase and Nattokinase in ***SERRACOR-NK® (SEBkinase®)*** are formulated to break up fibrinogen and lower the body's anti-inflammatory response. The use of systemic enzymes for Pulmonary Fibrosis is a new approach to combat the fibrin build up in the arterial lining within the lung walls. By reducing the fibrin levels within the lungs a synergistic effect is also created by the ***SERRACOR-NK® (SEBkinase®)*** formula, improve immune function. By removing the fibrin from the lungs your body's inflammation marker will drop resulting in improved immune function which in turn allows the body's natural healing process to begin. A secondary function on ***SERRACOR-NK® (SEBkinase®)*** is the decreased amount of mucus to be harnessed in the lungs. As mucus levels drop so will the bacteria and infection within the lung membranes. Fibrin being a major cause to reduction of airflow and by reducing the infection of bacteria in the lungs, users will start to have an improvement of airflow, reduction of mucus, improved energy and an overall improvement in their body's immune response.

***SERRACOR-NK® (SEBkinase®)*** is an important step in the fight against Pulmonary Fibrosis. Users should always consult with a doctor before taking any supplement and also taking prescribed pharmaceuticals. ***SERRACOR-NK® (SEBkinase®)*** should not be taken with any blood thinning medication. ***SERRACOR-NK® (SEBkinase®)*** does thin the blood and users should always discontinue the use of ***SERRACOR-NK® (SEBkinase®)*** if your are taking any blood thinning medications.9



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