

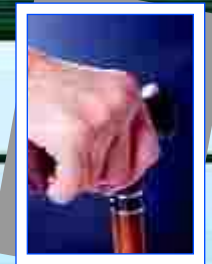


# enzymeworld

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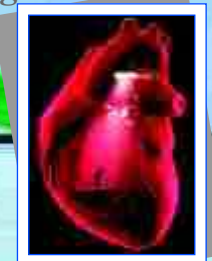
## In the Service of Human Healthcare

Pg. 3



Alternative to NSAIDs

Pg. 7



Key to a Healthy Heart

Pg. 11



Biological Response Modifiers

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DESIGN HUNT ADVERTISING



# EDITORIAL



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Welcome to this latest edition of Enzyme World. This issue is being published at a time of economic uncertainty. Yet, some advances in the worldwide economy are happening. This provides hope and a measure of confidence for the future. It is with this hopeful spirit that we launch our newest division, Advenza, Advanced Vital Enzymes Ltd. Advenza credo will be to manufacture and market the highest quality enzyme supplements in a finished form. Ultimately, health is our most precious gift and Advenza is in the business of marketing health in the form of enzyme supplementation. Therefore, this issue is devoted to health. For questions about these articles or enzymes in general, please feel free to contact us at our "Ask the Enzyme Experts" email, ew@enzymeindia.com and one of our experts will contact you directly.

BRM-100™ is a combination of Lactoferrin and Lysozyme, which has antibacterial, antimicrobial and immunomodulatory properties.

### CEROKINASE™ (SEBKinase®)

Cardiovascular disease (CVD) remains one of the most pressing health issues worldwide. It presents a significant drain on healthcare systems, economies and a very real reduction in the quality of life for millions of people. Advenza is taking systemic enzyme care to the next step with the introduction of CEROKINASE™ (SEBKinase®). This powerful systemic enzyme blend helps to maintain healthy blood flow by restoring healthy fibrin metabolism. Research has established that CEROKINASE™ (SEBKinase®) is an enzyme blend that supports healthier fibrin levels that in turn reduces blood viscosity, blood pressure and cholesterol.

### ENMAX™ (Exclzyme® EN)

Joint pain and inflammation has many causes. For millions of people suffering from stiff, sore and swollen joints, the standard treatment tends to be treating the symptoms with NSAIDS (non-steroidal anti-inflammatory drugs). As an alternative, ENMAX™ (Exclzyme® EN) from Advance Vital Enzymes, is a proteolytic enzyme blend that not only possesses potent anti-inflammatory activity, but also reduces edema. Clinical studies have demonstrated that systemic proteolytic enzymes, like those in ENMAX™ (Exclzyme® EN) effectively reduce symptoms as well or better than NSAIDS and without the untoward side effects.

The SEB Companies, Advanced Enzymes and Specialty Enzymes and Advenza have as part of our mission statement, a responsibility to provide industry with enzyme solutions that are not only effective, but help, not harm the environment. Our company continues to look for novel product solutions that reduce or eliminate pollution of the environment. In essence, we strive to provide a value added product line that is an eco-friendly solution as well.

### BRM 100™ (ImmunoSEB®)

Today, treatment therapies emphasize the use of compounds that stimulate, replace or duplicate the actions of endogenous cellular mediators the body uses in conjunction with the immune system to protect from disease. These are collectively called Biological Response Modifiers. Advenza is proud to announce the launch of our own Biological Response Modifier, BRM -100™.

Read on,

Mike Smith

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## ENMAX™ (EXCLZYME® EN): Enzyme Alternative to NSAIDs

Joint pain and inflammation may have many causes. For some, the aches flare up with cold weather. For others, it may be an acute reaction to over exertion, strains and sprains. For still others, it may be a more chronic condition like osteoarthritis or rheumatoid arthritis. Regardless of the cause, for many millions of people, suffering from stiff, sore and swollen joints, the standard treatment tends to be treating the symptoms with NSAIDS (non-steroidal anti-inflammatory drugs).

Of course, NSAIDS are drugs and as such, have their own drawbacks. For example, the possible side effects of NSAIDS include headaches, dizziness, ringing in the ears and gastrointestinal problems, like occult bleeding and potentially even ulceration. In addition, there is evidence that NSAIDS may inhibit the repair of the cartilage that, in turn, may worsen the progression of the condition. As a result, the search for an appropriate analgesic, anti-inflammatory continues.

The anti-inflammatory effects of systemic proteolytic enzymes is well known and has been in use for over 50 years.<sup>1</sup> Fortunately, Proteolytic enzymes are well-tolerated and not associated with any significant side effects.<sup>2</sup> The next step in systemic enzyme therapy was to find the most effective and well researched systemic enzyme blend to effectively treat both the symptoms and causes of inflammation and pain. As a result of extensive research from Specialty Enzymes and Advanced Enzymes, a powerful new systemic enzyme blend is being introduced by Advenza, Advanced Vital Enzymes: ENMAX™ (Exclzyme® EN).

### ENMAX™ (Exclzyme® EN)

ENMAX™ (Exclzyme® EN) is a unique and proprietary, non-animal systemic enzyme blend, which possesses high stability and activity under a much broader range of pH conditions than animal source enzyme blends. The powerful proteolytic enzyme blend in ENMAX™ (Exclzyme® EN) reinforces the body's natural defense mechanisms. ENMAX™ (Exclzyme® EN) is ideal for acute traumatic injuries as well as chronic conditions.<sup>4,5</sup> It's powerful proteolytic enzymes are combined with amylase, lipase the important bioflavonoid rutin, which is important for blood vessel integrity.

ENMAX™ (Exclzyme® EN) is enterically coated to protect the physicochemical structure of its enzymes and as a result, maximize its bioavailability. This systemic enzyme blend effectively works with the body to reduce inflammation, swelling and pain. Advanced Vital Enzymes, in coordination with research from Specialty Enzymes and Advanced Enzymes, now makes this significant advance in oral systemic enzymes available to help manage inflammation and pain.

### How ENMAX™ (Exclzyme® EN) Works?

ENMAX™ (Exclzyme® EN) proteolytic enzymes not only possess potent anti-inflammatory activity, but also reduces edema<sup>4,6</sup> and has significant fibrinolytic activity.<sup>3</sup> It is unusually effective with the symptoms of osteo- and rheumatoid arthritis. Rheumatoid arthritis is especially difficult since it is the result of a storm in the body's immune system. The body normally produces white blood cells, antibodies and other compounds to fight off infections. In autoimmune diseases like rheumatoid arthritis, the body turns on itself, invading the tissue of the joints, attacking as if they were pathogens invading the body. The results can

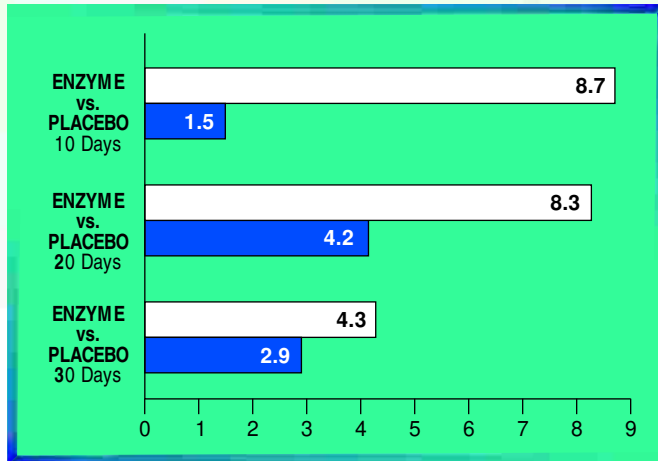
be devastating. Commonly, powerful anti-inflammatory drugs are used to reduce the symptoms. The side effects are often dramatic and even intolerable. Clinical studies have demonstrated that systemic proteolytic enzymes, like those in ENMAX™ (Exclzyme® EN) effectively reduce symptoms as well or better than NSAIDS and without the untoward side effects.<sup>7,8</sup>

ENMAX™ (Exclzyme® EN) anti-inflammatory effect is mediated through prostaglandin D2 and its downstream genes. This may be as a result of a COX2 like regulation by ENMAX™ (Exclzyme® EN). ENMAX™ (Exclzyme® EN) works wonders for pain and inflammation with virtually no side effects.



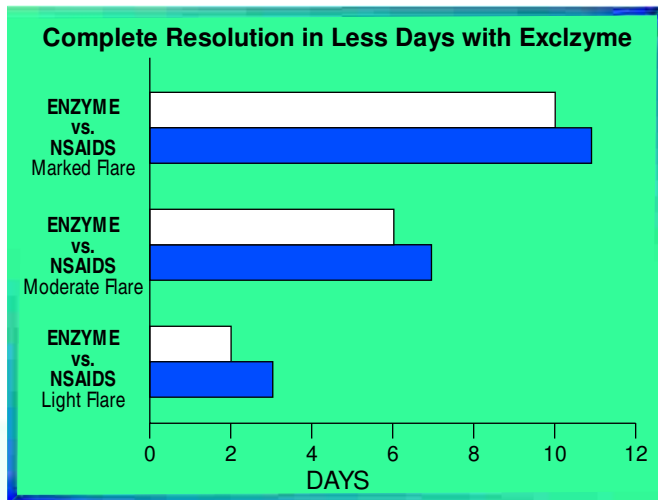
**RESEARCH**

**Pain Relief**



ENMAX™ (Exclzyme® EN) has been proven through an IRB-approved double blind, placebo controlled clinical trial to significantly improve most of the major symptoms associated with joint problems. Patients experienced greatly reduced fatigue, soreness and discomfort while using ENMAX™ (Exclzyme® EN).<sup>3</sup>

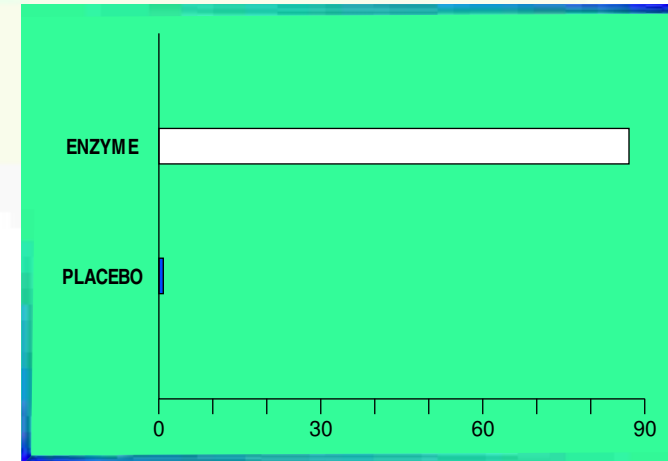
**ENMAX™ (Exclzyme® EN) and NSAIDS**



60 patients on ENMAX™ (Exclzyme® EN) and 60 on NSAIDS. Injuries included inflammation from sports injuries (muscle tears, tendonitis, sprains, orthopedic injury and others). Complete resolution took less time with ENMAX™ (Exclzyme® EN).<sup>9</sup>

**ENMAX™ (Exclzyme® EN)**

**Effects on C-Reactive Protein CRP Levels**



83% of Subjects Improved from Abnormally Elevated CRP Baseline Levels.<sup>9</sup>

**ENMAX™ (Exclzyme® EN) is useful in the following indications:**

- Acute pain and inflammation from sports injuries or other trauma.
- Chronic pain and inflammation from Rheumatoid and Osteo Arthritis.<sup>7,8,11</sup>
- Post Operative Rehabilitation.<sup>4</sup>
- Fibromyalgia
- Excessive fibrin production or reduced metabolism of fibrin
- Otolaryngeal disorders.<sup>10</sup>

Whether pain and inflammation are acute or chronic, with ENMAX™ (Exclzyme® EN) relief occurs with virtually no side effects. This is true even on an empty stomach, which is the preferred way to take ENMAX™ (Exclzyme® EN) along with a full glass of water. The cardiovascular benefits are also significant with its fibrinolytic activity and lowering of C-Reactive Protein. Truly, ENMAX™ (Exclzyme® EN) is an important alternative to NSAIDS for joint and cardiovascular health.

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## CEROKINASE™ (SEBKinase®) : Key to a Healthy Heart

Cardiovascular disease (CVD) remains one of the most pressing health issues worldwide. It presents a significant drain on healthcare systems, economies and a very real reduction in the quality of life for millions of people. In industrialized countries, CVD is the number one killer, greater than the next three causes of death put together. The goal really should be prevention, but we tend to wait until the problem has advanced in the form of a stroke or a serious cardiac event.

There are usually warning signs that foreshadow more serious cardiovascular events. People with angina have blood rheologic abnormalities that suggest a disturbed blood flow and predict an increased potential for coronary artery thrombosis. A series of anticoagulants (heparin, coumarin and aspirin) are currently used to reduce thromboembolic complications. At the present time their application is unavoidable.

The use of anticoagulants for CVD has been always been somewhat controversial, yet anticoagulants are a mainstay in CVD therapy today. According to a recent study in the American Heart Journal, people with heart failure that follow a treatment regimen including blood thinners, could actually be increasing their over all risk. While millions take these medications every day, many suffer from a long list of side effects, including gastrointestinal bleeding, ruptured blood vessels and more. Worst of all, these medications do little to solve the underlying problem. One need only look at the facts since the introduction of these medicines, there has been no decrease in the number of heart attacks or strokes.



Myocardial infarct patients have an inherent imbalance in their thromolytic enzymes. Advenza, Advanced Vital Enzymes, Ltd. has closely followed the clinical research concerning the pathology that results from this imbalance. Our particular focus is on the role of oral systemic enzymes in circulatory health. Advanced Enzymes and Specialty Enzymes have conducted focused research on role of CEROKINASE™ (SEBKinase®) in circulatory health. Our clinical studies have highlighted the effectiveness of CEROKINASE™ (SEBKinase®) as a preventive measure.

### Why CEROKINASE™ (SEBKinase®) .....

CEROKINASE™ (SEBKinase®) helps to maintain healthy blood flow. Blood has a sticky quality that helps it clot and stop the bleeding from wounds. When a wound occurs, blood platelets rush to the wound site and cause a series of reactions that produce strands of fibrin. These fibrin strands form a thin, web-like structure that covers the wound and stops the bleeding. Research has established that these fibrin strands are the main cause of sluggish blood. As a result, researchers next began looking for a substance that would act to maintain healthy levels of fibrin.

That breakthrough discovery is CEROKINASE™ (SEBKinase®), an enzyme blend that supports healthier fibrin levels that in turn reduces blood viscosity, blood pressure and cholesterol.

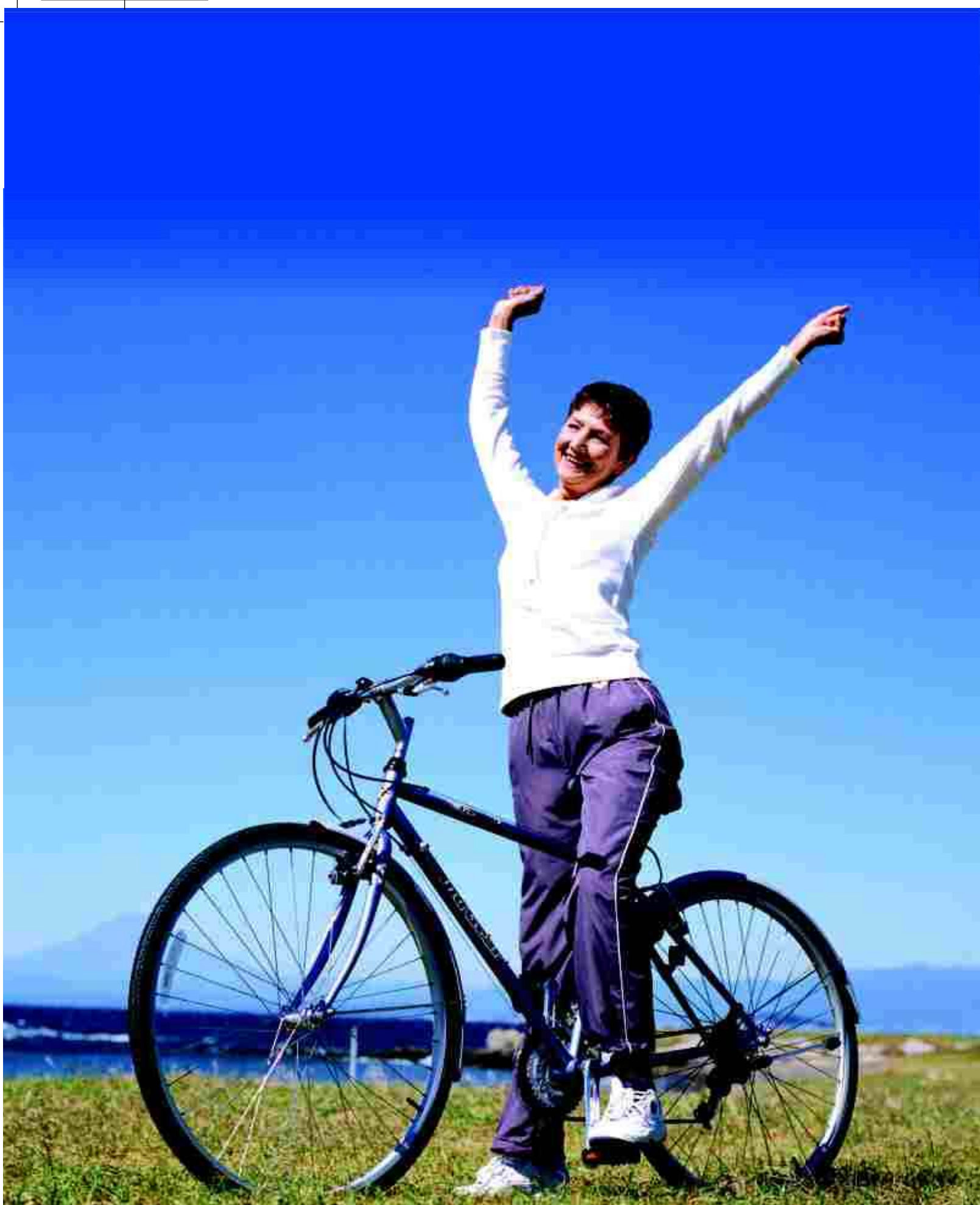
### What is CEROKINASE™ (SEBKinase®)?

CEROKINASE™ (SEBKinase®) is a potent fibrinolytic enzyme blend extracted and highly purified from bacterial fermentation. CEROKINASE™ (SEBKinase®) is a natural dietary supplement that supports healthy cardiovascular function with virtually no side effects.

CEROKINASE™ (SEBKinase®) is a proprietary preparation specially formulated to assist the body by restoring healthy fibrin metabolism. As fibrin builds up in our bodies, it has the potential to cause or exacerbate many unhealthy conditions. CEROKINASE™ (SEBKinase®) can help keep fibrin under control.

CEROKINASE™ (SEBKinase®) is a superior fibrinolytic, systemic enzyme formula, offering a tremendous synergistic effect in the body and excellent cardiovascular support.





**Benefits of CEROKINASE™ (SEBKinase®):**

- Strong antioxidant properties help to keep you fresh and healthy
- Antibacterial properties
- Lowers C-Reactive protein, an inflammation marker and CVD risk factor
- Helps support healthy blood pressure, cholesterol and cardiovascular health
- Clinically tested for dissolution of arterial plaque and thrombi 'blood clots'
- Excellent cardiovascular support and cellular regeneration properties
- Potent fibrinolytic activity that reduces systemic fibrin concentrations
- Enhances body's production of plasmin and other clot dissolving agents, including urokinase
- Maintains normal blood rheology.

Fibrinogen is unique among blood proteins in that it is readily converted into insoluble fibrin by the action of enzyme thrombin. When thrombin acts on fibrinogen, a fibrinopeptide molecule becomes activated and a meshwork is formed which acts as a framework of clot (Bernard L. Oser, 1965). The globulin fraction consists of a variety of proteins of similar physical characteristics. Two general types of globulin are recognized, euglobulin and pseudoglobulin. It is in pseudoglobulin that we find a conjugated protein, primarily lipoproteins. Euglobulin predominantly consists of plasmin, plasminogen activator and fibrinogen. Thus, euglobulin is the key factor in the process of lysing a blood clot. A thrombus is an intravascular clot that is potentially lethal. Deep vein thrombosis can cause such events as cerebral hemorrhage, cerebral infarction and cardiac infarction.

Increased risk factors for thromboemboli include angina pectoris, atherosclerosis, hypertension and congestive heart failure, among others.

Cardiac infarct patients may have an inherent imbalance in that their thrombolytic enzymes are weaker than their coagulant enzymes (Chatterjea and Rana Shinde, 2005). Thus prevention of thrombotic disease or early treatment of a thrombus is essential to save a life. When a thrombus is formed in a normal healthy person, fibrinolytic enzymes present in plasma digest the clot, thus avoiding potential serious events. The lysis time of these clots is determined as a measure of the activity of the activators of fibrinolysis (e.g. plasminogen activators). Thus, compounds, which stimulate the release of tissue-type plasminogen activator from the vessel wall, can be detected. The thrombolytic activity of CEROKINASE™ (SEBKinase®) is thus measured using Euglobulin Lysis time.

In essence, CEROKINASE™ (SEBKinase®) is important nutritional support for a healthy cardiovascular system. Most notably, it can help restore normal, healthy fibrin metabolism, reduce C-reactive protein and provide significant anti-inflammatory activity as well as many other benefits.

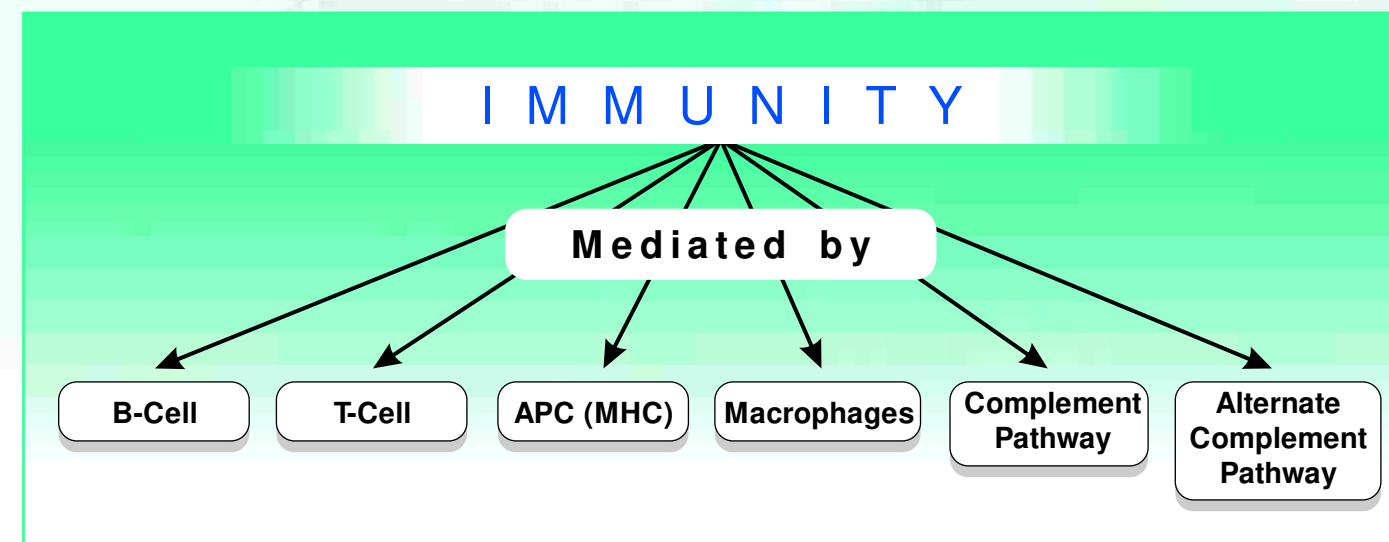


# Introduction to Biological Response Modifiers (BRMs)

In recent years, medicine has entered a new era of therapy. Today, treatment therapies emphasize the use of compounds that stimulate, replace or duplicate the actions of endogenous cellular mediators the body uses in conjunction with the immune system to protect from disease. These compounds are of biological origin and administered to patients in an effort to improve or modify body system responses, generally of the immune function. These substances are collectively called Biological Response Modifiers or BRMs. A biological approach to treatment is increasingly considered a rational and safe approach that stimulates natural biological responses to defend the body. They are purported to modulate or stimulate an immune system that is compromised by stress, illness or trauma. The BRMs are very similar to natural immune mediators in the body, especially those capable of boosting normal immune functions. Thus, it is thought they allow the rest of the body's defenses to reconstitute themselves and take over. Therapeutic enzymes work together with the body's endogenous enzymes to stimulate the immune system and together are considered important Biological Response Modifiers.



## Immunomodulatory action of BRMs



### BRMs in use today

The introduction of BRMs to modern medicine represents a tremendous advance in treatment and it can be expected that their use will increase more and more as we discover more about how our body's defenses function. Results of their use appear most encouraging.

BRMs have been used in a number of immune compromised conditions including autoimmune diseases, cancer and HIV diseases. Interferon, an important biological response modifier, is now available as a prescription medicine. There are several varieties of interferon that stimulate the immune system and even stop the growth of some cancer cells and of some viruses. Interleukins, tumor necrosis factors etc. are also other important BRMs.

**Interleukin-2 :** Interleukin-2 (IL-2) was originally described as a biological activity of stimulated lymphocytes that supported the growth of certain T-cells bearing the IL-2 receptor. Subsequent generations of IL-2 from stimulated cell lines and, finally, the cloning of IL-2 have made available large quantities of purified material for preclinical and clinical trials. Because

of the ability to support T-cell proliferation, IL-2 has been evaluated : IL-2 has been used to support the proliferation of T-effector cells *in-vitro* in the hope that large quantities of these effector cells can be used therapeutically after expansion to sufficient numbers.

The acquired immunodeficiency syndrome (AIDS) represents a clinical model in which IL-2 may be useful. Patients with this syndrome have a selective defect in

T-helper cells and a reversal of the T-helper/suppressor ratio in addition to certain other immunologic deficiencies that may underlie their susceptibility to multiple infections. There is now preliminary evidence that IL-2 partially corrects the T-cell defect when AIDS patient's T-cells are coincubated with this biological *in-vitro*.

Preliminary clinical trials administering IL-2 to patients with AIDS have also shown some encouraging results with respect to correcting this defect. In addition to the effects on T-cells, IL-2 plays a role in supporting the growth of NK-cells or Natural Killer Cells. NK Cells are a specialized kind of lymphocyte that helps protect the body by targeting tumor cells and a wide variety of infectious microbes.

**Gamma Interferon:** Perhaps the first cloned biological to have a clinical application that also acts as an interleukin is gamma interferon. Extensive testing of the alpha interferons and early testing of the beta interferons have emphasized their antiviral activity and their potential antiproliferative activity in humans. Further, both of these interferons possess immunomodulatory effects as well and these effects act concomitantly. Still, preclinical studies seem to indicate that gamma interferon is a more diverse and powerful immunomodulator than alpha or beta interferon, and there are already indications that it may be responsible for some of the biological activities in these early studies.

supernatants are used as a source for MIF or MAF, the antibody does not always eliminate these activities. This seems to indicate that gamma interferon may have MIF and MAF activity, but there are other substances produced by mammalian cells with these activities as well.

**Tumor Necrosis Factor :** Tumor necrosis factor (TNF) is a substance naturally secreted by macrophages. When activated by endotoxins, macrophages release TNF, which then binds to receptors on cell membranes. Once bound to the cell membrane, TNF initiates cellular activity and is possibly cytotoxic to that cell.

TNF is in the early phases of clinical trials and has not yet demonstrated therapeutic effectiveness against malignant diseases. Side effects on TNF are similar to those experienced with interferon therapy, including a flu-like syndrome and soreness at the injection site. Fevers and chills are generally mild and disappear with subsequent doses of TNF.

**Enzymes as Biological Response Modifiers :**

At present, in the United States and worldwide, certain specific medical enzymes are used as an effective systemic treatment for a number of conditions.

Enzymes play a central role in ensuring that an equilibrium exists between the activation and inhibition of response of the immune system. An imbalance in this equilibrium may lead to tissue damage in response to disease. When an imbalance occurs, there is an enzymatic interruption of a

Recent studies on gamma interferon have indicated that it has both macrophage inhibitory factor (MIF) and macrophage activity factor (MAF) activity. The in vitro use of cloned gamma interferon and of monoclonal antibody to gamma interferon has proven to be a powerful approach in determining the precise in vitro activities associated with this molecule. It is clear from these studies that antibodies that neutralize the antiviral activity of gamma interferon can diminish both the MIF and MAF activity of cloned gamma interferon. By contrast, when cell-line or stimulated-cell



complementary cascade, including a breakdown of pathogenic immune complexes and activation of macrophages. According to the published reports and presentations of BRM conferences, interleukins, tumor necrosis factors and interferons appear to have a significant beneficial effect. However, their use in combination with enzyme BRMs has been reported to yield superior results when compared to either of the substances alone.

**Lysozyme :** Lysozyme is an enzyme found in egg white, tears and other secretions. It is responsible for breaking down the polysaccharide walls of many kinds of bacteria and thus, has the potential to provide protection against infection.

Lysozyme is an antimicrobial innate immune molecule that hydrolyzes the 1,4-beta links between N-acetylmuramic acid and N-acetylglucosamine, cleaving an important polymer of the cell walls of many bacteria. More specifically, degrading peptidoglycan of the bacterial cell wall.

The antimicrobial effect of lysozyme combined with a variety of antimicrobial drugs was studied with respect to 74 bacterial cultures. It was shown that a synergistic relationship between lysozyme and antimicrobials was variable for depending upon the specific drug and the pathogen specie. The most pronounced synergism was observed with respect to gram-positive bacteria and many of the drugs. Combining lysozyme with aminoglycosides resulted in increasing antimicrobial effect with respect to practically all the microbial cultures tested. Clinical trials with the effective combinations of antibiotics and lysozyme proved to have high efficacy in patients with bacterial pneumonia and pyelonephritis.

Lysozyme protects us from the ever-present danger of bacterial infection. It is a small enzyme that attacks the protective cell walls of bacteria. Bacteria build a tough outer layer of carbohydrate chains, interlocked by short peptide strands. These brace their delicate membrane against the cell's high osmotic pressure. Lysozyme breaks these carbohydrate chains, destroying the structural integrity of the cell wall. As a result, the bacteria burst under their own internal pressure.

In-vitro data was applied to clinical trials with chronic and acute pyelonephritis and to chronic inflammatory diseases of Staphylococcus etiology. It was shown that antibiotics lowered the ++ anti-lysozyme activity of microorganisms, which when combined with lysozyme, resulted in a more rapid disappearance of clinical signs of the disease. In addition, the terms of remission increased 2- to 3-fold and resulted in an increase in the number of individuals with complete remission (54.5 to 63.6 per cent) as compared to the use of drugs that stimulated the pathogen property or were indifferent to it.

Lysozyme has shown beneficial effect on wound healing which may be due to its cationic influence on the cell membranes in the epithelium and to pH change in the ulcerations.

**Lactoferrin :** Lactoferrin is a globular multifunctional protein with antimicrobial activity (bactericide, fungicide) and is part of the innate defense, mainly at mucoses. Lactoferrin is found in milk and many mucosal secretions such as tears and saliva. Lactoferrin is also present in secondary granules of polymorphonuclear leucocytes (PMN) and also is secreted by some acinar cells. Lactoferrin can be purified from milk or produced recombinantly. Human colostrum has the highest concentration, followed by human milk, then cow milk.



Over the past three decades, various laboratories have identified lactoferrin as an antimicrobial agent. The occurrence of lactoferrin in saliva has initiated many studies on antimicrobial activity against oral Streptococci and control of caries.

Lactoferrin, an abundant protein component of human colostrum, binds to iron. Binding to iron makes less available for use by bacteria and other pathogenic microorganisms, including fungi and viruses, which use iron to promote their own growth. Lactoferrin's ability to regulate iron also influences T-cell, neutrophil, and monocyte proliferation, all essential components of the immune response. Iron-regulating strategies are also essential to normal growth and the control of the advancement of disease processes in the body. Taken as a supplement, it can boost the immune system and help the body to burn fat and build lean muscle. Thus Lactoferrin is a globular multifunctional protein with antioxidant, antimicrobial activity (bactericide, fungicide), and is part of our innate defense system, mainly at mucoses.

(Lipopolysaccharides) molecules and increasing bacterial susceptibility to lysozyme by increasing its penetration through the outer membrane.

Lactoferrin and lysozyme are each bacteriostatic to *Vibrio cholerae*, *Salmonella typhimurium* and *E.coli* but are often bactericidal to all three organisms when used in combination under certain conditions. The bactericidal effect of a lysozyme lactoferrin combination is dose-dependent and is blocked by iron saturation of lactoferrin and is inhibited by high calcium levels.

Hence, BRM-100™ (ImmunoSEB®) i.e. lactoferrin and lysozyme in combination shows synergistic effect and can be used against a wide range of infections. BRM-100™ (ImmunoSEB®) may also accelerate the healing of injuries; increase the antimicrobial activity of certain drugs to reduce their dosage levels which is beneficial in chronic renal and liver failures, have an anti-aging effect and is very beneficial in diabetic patients including children to reduce their allergic response.



### BRM-100™

BRM-100™ (ImmunoSEB®) is a combination of Lactoferrin and Lysozyme, which has antibacterial, antimicrobial and immunomodulatory properties.

Lysozyme is effective against many gram-positive bacteria. In combination, lactoferrin it may enhance the effectiveness of lysozyme against gram-negative bacteria since lactoferrin has been shown to enhance the antimicrobial activity of lysozyme against *E.coli*. Lactoferrin damages the outer membrane of gram-negative bacteria causing release of LPS

## AETL launches Advenza - Advanced Vital Enzymes



Advanced Enzyme Technologies Limited (AETL), a SEB Group Company, is Asia's pioneer in Enzyme research and development. AETL has a global footprint in over 30 countries is now proud to announce a further expansion by launching a new division, Advenza - Advanced Vital Enzymes, solely dedicated to serve human healthcare. Advenza is aiming to shift the existing medical paradigm of treating symptoms to prevention and treatment of the underlying causes of disease.

### Advenza's Philosophy and Focus:

The philosophy of the SEB Group is clearly articulated as "Enzyme is Life". We, at Advenza, have realized that enzymes are vital to any life form and naturally to humans. This scientifically supported belief has translated into an opportunity for us to serve the people of India and the world by bringing the benefits of enzymes to everyone. With a half century of enzyme manufacturing experience, we truly are in the best position to accomplish this task.

### Mission:

Our mission is

- To establish enzymes as the treatment of first choice among all medical practitioners and...
- To establish enzymes as lifestyle products of first choice among all consumers



**Vision:**

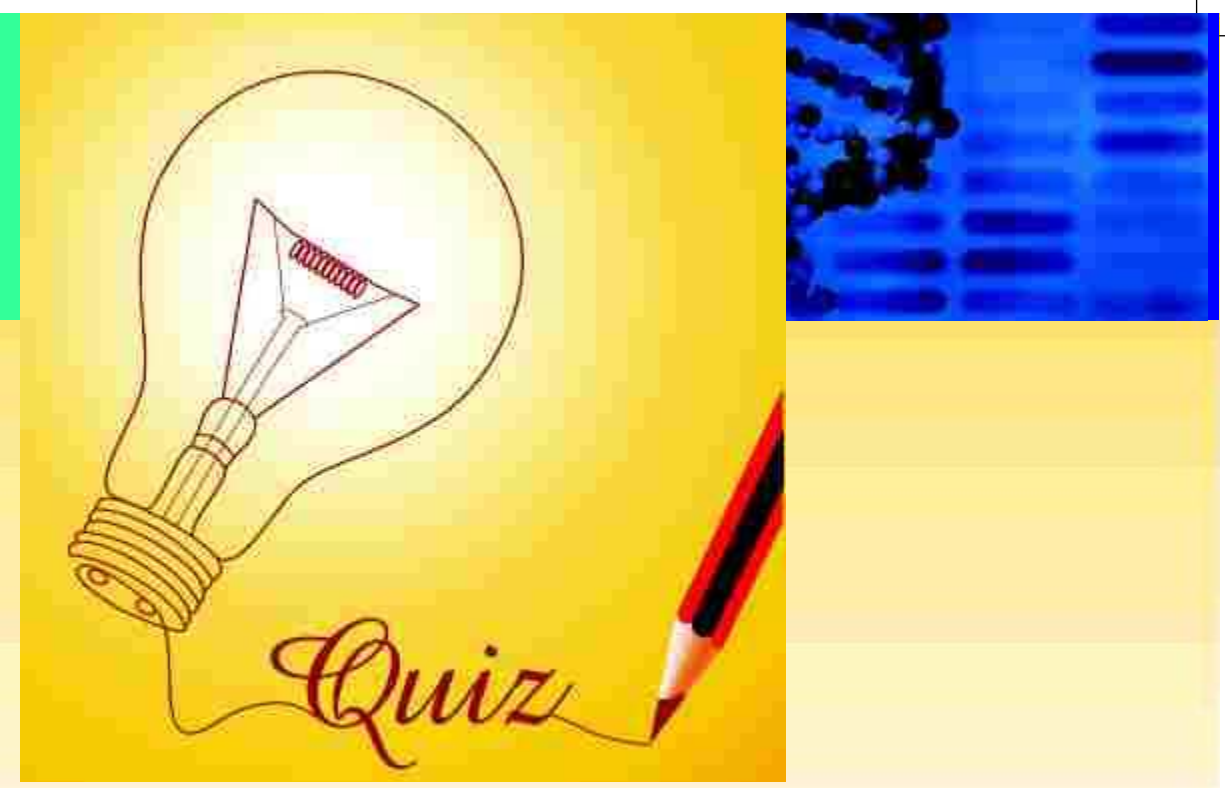
By 2020, our vision is

- Enzymes in each and every prescription generated in India
- Usage of Enzyme products in each and every household in India



**BRM 100™**

**CEROKINASE™**



- 1) Which of the following enzyme is used to wash clothes?
  - a) Nuclease
  - b) Pectinase
  - c) Cellulase
  - d) None of the above
- 2) Name the enzyme present in human saliva?
  - a) Cellulase
  - b) Polymerase
  - c) Kinase
  - d) Amylase
- 3) Which enzyme can cleave protein?
  - a) Lipase
  - b) Proteinase
  - c) Cellulase
  - d) Nuclease
- 4) Which of the following is an enzyme?
  - a) Carbon dioxide
  - b) Trypsin
  - c) Alcohol dehydrogenase
  - d) Both 2 and 3
- 5) The site where enzyme catalyzed reaction takes place is called?
  - a) Active site
  - b) Catalytic site
  - c) Activity site
  - d) Functional site
- 6) The molecule that is bound and acted upon by the enzyme is called?
  - a) Biomolecule
  - b) Substancee
  - c) Reactant
  - d) Substrate
- 7) In how many classes enzyme is divided by Enzyme Commission?
  - a) 4
  - b) 5
  - c) 2
  - d) 6
- 8) Which suffix is added to the name of the substrate or to a word or to a phrase describing the activity of enzyme, to name an enzyme?
  - a) -ise
  - b) -ase
  - c) -ic
  - d) -ace
- 9) At about 0°C., most enzymes are
  - a) inactive
  - b) active
  - c) destroyed
  - d) replicated
- 10) Which chemical is classified as an enzyme?
  - a) galactose
  - b) lipid
  - c) protease
  - d) manganese dioxide