

ANTI-AGING BREAKTHROUGH:

Thymic Protein A

An Interview with Dr. Terry Beardsley on his new discovery.

Dr. Terry Beardsley is an immunologist with a Ph.D. in Experimental Biology from Baylor College of Medicine, Texas. He has been the principal scientist in the Monoclonal Antibody Facility at Smith Kline Beckman; Assistant Professor of Research at the University of California at San Diego; Research Associate at Scripps Clinic, La Jolla; and Assistant Research Professor at UCLA's Laboratory of Nuclear Medicine.

He has spent most of his career researching the thymus gland, and is considered one of the experts on this subject. He is the first person to isolate and purify an intact thymic protein and make it available for commercial use.

TH: *Dr. Beardsley, you have recently been awarded a U.S. patent for your important discovery of a whole thymic peptide called Thymic Protein A, which promises to extend human life span through its major role in strengthening the human immune system.*

A: I would like briefly to explain the function of the human immune system for your readers, before I discuss my discovery. First, let me say that it is now established in medicine that a strong immune system increases life span by protecting the body from the daily attacks of pathogens in our environment, as well as slowing down the diseases of aging. Any substance which measurably strengthens immunity may well extend life and, most importantly, quality of life. Witness all the new research to find agents to improve immunity in the treatment of cancer and other degenerative diseases.

We know that the immune system is a complex network of specialized organs, glands and cells and it is composed of two basic sub-systems, the Humoral and the Cell Mediated, each with different methods of defending the body against disease. The Humoral side creates antibodies to defeat invading pathogens. Cell Mediated Immunity employs specific cells which attack and kill invaders identified by it.

B-lymphocytes (B-cells) and T-lympho-

cytes (T-cells) are types of white blood cells utilized as "soldiers" by the immune system. B-cells are the antibody producers used in Humoral Immunity and T-cells are the shock troops used in Cell Mediated Immunity. They are all born in the bone marrow. B-cells mature in the bone marrow, hence the B for bone marrow. T-cells are matured by proteins from the thymus gland.

Both sides of the immune system must function properly in order for the body to have an optimum immune response to invading pathogens. In fact, B-cells will react quicker, proliferate and produce an antibody response more efficiently in the presence of a T-cell response. So the presence and sufficient activity of T-cells is crucial for maximum immunity in an individual.

TH: *We hear a lot about the importance of T-4 cells as regulators of the immune system. Please elaborate.*

A: Of all the cells in the immune system the T-4 helper cell is the most important because it serves as controller of many key functions of immunity. It's like the "conductor" who keeps an orchestra playing in tempo and in tune. It regulates the delicate balance of the immune system by secreting certain lymphokines and cytokines, among them Interleukin-2 and Interferon, which act as "messengers" to tell specific cells to attack and destroy certain invading pathogens. The T-4 cell is also necessary to interact with B-cells, as it transforms them into cells which produce antibodies to a particular antigen. In addition, the T-4 cell calls upon the bone marrow to manufacture more of itself and other types of T-cells and has a role in the production of total white blood cell levels, red blood cells and production of the important CD56 natural killer cells, which also attack and destroy cancer cells, among others. The key word in all this is "regulation." We are beginning to understand that the body has its own methods of keeping balance. The cause of many degenerative illnesses is increasingly viewed as a "dysregulation" of immunity. For example, auto-

immune diseases such as Lupus, Multiple Sclerosis or Arthritis are now understood to be caused by too strong an immune response of certain cells, which actually attack the body. Cancer, Chronic Fatigue Syndrome and AIDS are examples of illnesses which involve a weakened immunity.

In the past, medicine has tried to either strengthen or decrease immune response by certain synthetic agents and drugs. I do not believe in forcing an immune response. I feel that the correct way to deal with these illnesses is by a well-regulated immune system. Since the T-4 cell is the key to regulation, we need to cooperate with nature by protecting and strengthening its activity, rather than interfering with or forcing it to behave in a certain manner. The widespread use of chemotherapy and radiation in treatment of cancer are well-known as damaging to the immune system. In many cases, the patient who receives these treatments damages the T-cells and thus his or her ability to mount a sufficient immune response to the constant stream of pathogens which enter the body every day. Many people treated for cancer die of opportunistic infections which would normally be easily handled by a strong immune system.

While a healthy young person aged 21 has an abundance of well-functioning T-cells to regulate the immune system, by the age of 40 most adults' immunity has been significantly decreased. Now we are learning that this is due to a lack of properly programmed T-cells and the shrinking of the thymus gland.

TH: *What is the role of the thymus gland in immunity?*

A: Since T-4 cells are naive (immature) when born, they will not function unless they are programmed by certain thymic protein. I have been fortunate enough to be one of the first to discover a specific substance which activates the T-4 cell, which I call Thymic Protein A. I am the first scientist to produce this protein in an intact manner in the laboratory so that it can be administered to people to help regulate their immune systems.

The thymus is a ductless gland which lies just beneath the breastbone. We now know that it begins to shrink after puberty. By age 40 an average human has only a small portion of the thymus still intact as the glandular tissue converts to connective and fatty tissue.

In the past 30 years research has shown that newly-born (naive) T-lymphocytes migrate from the bone marrow to the thymus where they are programmed to distinguish between "self" and "non-self". Three main classes of cells are produced: T-4 helper cells, which help to signal and to turn on certain functions and stimulate production of antibodies by the B-lymphocytes; T-8 cytotoxic (killer) cells, which are guided by the T-4 helper cells to attack and destroy invading cells such as viruses and cancer cells; and T-8 suppressor cells, which are necessary to terminate attack by the T-8 killer cells.

TH: *We have heard of using thymus extracts to treat immune deficiency. How does Thymic Protein A compare with these extracts?*

A: For many decades physicians have treated deficiencies involving the thyroid gland, the pancreas, and adrenal gland with physiologic replacements, with the theory: "If a gland dries up, replace it." Extracts of thymus generally consist of whole thymus gland which is ground and dried or strained into liquid and administered in capsules or in sublingual drops. By the very nature of how these extracts are processed, the resultant product is a conglomeration of thymus tissue, cell debris, fragments of thymus proteins and thymus by-products. These extracts are only slightly effective because they are mere fragments. To attain full effectiveness a protein must have a specific shape with exact transmitter and receptor sites. It is therefore logical that since supplying whole but biologically inactive thymus in a processed and fragmented form helps people with thymus deficiencies, it would be much more effective to supply a purified single thymus protein which is still biologically active.

The new "intact" thymic protein I call Thymic Protein A is the complete 500-amino chain which fits the receptor site on the T-4 cell. The protein acts like specific software which "turns on" the computer (in this case the T-4 cell). No other thymic extract known compares because none of them are "intact." Due to the processing methods I explained previously, they contain only fragments of the

whole protein and do not fit the T-4 receptor. That's why even drugs like thymosin, a patented thymic fraction, on which many millions of dollars have been spent in development, has shown only a mild positive effect, and only when used together with doses of interferon to treat hepatitis.

TH: *What benefit to longevity does Thymic Protein A offer?*

A: As I stated previously, the thymus has atrophied by the age of 40 and no longer produces sufficient proteins to program newly-born T-cells properly. It may well be determined that the atrophy of the thymus is one of nature's methods of "programmed death" for humans. Longevity medicine seeks to extend life by measuring the body's vital functions, to determine which organs are performing at reduced capacity, and attempt to restore their function by replacing the missing natural substances such as hormones. Witness the use of human growth hormone, melatonin, DHEA and other substances. We now have added to our arsenal one of the most important of these natural replacements, Thymic Protein A.

A daily dose of a mere 4 micrograms of this material can make a major difference in longevity by strengthening the immune system through its T-cell "programming" role. The more T-cells that are properly functioning, the more immune response may be mounted against all infections and pathogenic agents which are constantly entering the body.

TH: *What kinds of results have you gotten with Thymic Protein A?*

A: The benefits to strengthening the immune system with Thymic Protein A include increased stamina, energy, well-being and ability to ward off infections. Clinical research is already underway, and one pilot study recently completed showed that a dose of 12 micrograms of Thymic Protein A daily for 60 days produced a 50 percent or greater reduction in the level of Early Antigen Epstein-Barr viral loads in 67 percent of individuals tested. These results simply confirm the positive anecdotal reports we have received from sufferers of Chronic Fatigue Syndrome. Another study is underway on Hepatitis C. In the four years that Thymic Protein A has been available, anecdotal reports have shown protec-

tion against flu, resolution of many types of infections, from minor to major, as well as benefits in serious illnesses such as cancer. Most significant are numerous reports from people undergoing chemotherapy who have taken this substance and maintained their total white blood count at acceptable levels. It is well-known among oncologists that chemotherapy and radiation will often induce a serious drop in white blood count to dangerous levels which may dictate cessation of therapy.

TH: *Are any doctors using Thymic Protein A?*

A: Yes, indeed. Dr. Julian Whitaker has called Thymic Protein A: "Likely the most powerful natural stimulant of the immune system ever discovered." Many other physicians such as Drs. Robert Atkins, Abram Ber, Jonathan Wright, Lee Cowden and Serafina Corsello, are using it regularly in their practices and for themselves.

TH: *In what form is Thymic Protein A available?*

A: Thymic Protein A is sold as a powder in sealed individual dose packets, administered under the tongue, where it rapidly dissolves. Each box contains 30 packets. The suggested use is from 1-3 packets per day. Those who wish to improve their immune function may use one packet daily, or every other day. Higher doses are not harmful and may be used with additional benefits. Some individuals with serious health problems may require higher doses for periods of time.

Because the product is so highly purified, no allergic reactions should occur, as is possible with whole thymus extracts. The product is made from cultured cells, not from actual thymus glands. No animals must be sacrificed and there are no considerations of the health of the donor animal, as there would be with thymic extracts from whole glands.

The potential of this new thymic protein is just beginning to be realized. The implications for protection against infections and overall slowing of the aging of the immune system are only a few of the possible benefits of this unique substance. One day in the near future all medicine will utilize this protein, with an array of other natural substances to protect against the very causes of illness and aging. ■