Nutrition

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HMS 90: A Promising Protein

Acting on the immune system through diet is a still little known field of research, but it is one that is very lively. While probiotics are beginning to gain popularity and recognition, the impact of whey protein has received less media attention.

A native of Italy, Dr Gustavo Bounous advanced the science considerably through to the optimization of an immune response obtained by feeding mice whey proteins (lactalbumin). A surgeon by training, Dr Bounous was a researcher at the Medical Research Council of Canada before becoming director of R&D for Immunotec Research, a position he will give up next year to take a well-deserved retirement in Italy. His successor, Dr Wulf Droge, head of the immunology division of the German Cancer Research Center, is an eminent researcher in the field of immunology.

Dr Bounous' research on mice, at the beginning of the 1980s, revealed a threshold effect with a ration of 20 g of whey protein per 100 g ration of food, beyond which no additional impact was observed. The activities of proteins are manifest on several levels: the mice become more resistant to bacterial infections (*Streptococcus pneumoniae, Escherichia coli*) and are able to combat the carcinogen dimethylhydrazine.

As well as benefiting from its immunological and anticarcinogenic properties, the mice fed this specific protein also showed increased longevity. In spite of the medical significance, this dietary component made little impact on physicians at the time given the importance attached to the pharmaceutical industry. For Dr Bounous, the role of nutrition in the prevention of disease is paramount.

Following a meeting with another researcher, Dr Gerald Batist, Dr Bounous began to suspect that glutathione was the source of the effects observed. Whey protein contains eight times more cysteine – a glutathione precursor (an intracellular tripeptide) – than caseine. Made up of three amino acids, cysteine, glutamic acid and glycine, glutathione is the primary intracellular antioxidant. Whey protein acts as an effective delivery system for the cysteine required to synthesize glutathione.

It was following these discoveries that Dr Bounous, working with colleagues, developed a whey protein concentrate called Immunocal (HMS 90 in Canada [for Humanized Milk Serum], which contains 90% protein), which became the flagship product of the company Immunotec.

Human trials were conducted, and they produced promising results in seropositive individuals, for whom HMS 90 improved their clinical condition considerably. If heated, the protein becomes denatured and loses its effectiveness. The patented formula is therefore taken from raw milk from an American cheese dairy. The isolate has properties similar to those of breast milk.

For John H. Molson, vice president of R&D at Immunotec and a top athlete, HMS 90's primary interest lies in its potential in the fight against cancer. In prevention and as an adjuvant treatment to chemotherapy (the protein appears to make tumour cells more vulnerable to chemotherapy), HMS 90 could be a therapeutic tool of choice given the prevalence of this illness. Studies have also demonstrated the importance of the product in the treatment of asthma and chronic fatigue as well as in increasing performance in sports. In total, 26 studies on this protein have been published in medical journals, some using animals as models and others describing case histories.

In humans, trials have been conducted with 20 g of protein per day on average, or the equivalent of two packets of HMS 90. According to the condition of health and the effect sought, doses ranging from one to three packets are recommended.

During the open house organized by Immunotec, numerous people came to testify to the impact of this supplement on their health; their allergies, cancer and other health problems seem to have disappeared almost miraculously. Nevertheless, health specialists are waiting for more double-blind clinical trials before recommending this product, natural as it may be. "It is our responsibility to conduct the studies necessary to demonstrate the effectiveness of this product," said Molson. "In the meantime, I remain cautious in what I say, even though I have great hope for the clinical studies underway." This outstanding athlete, his wife and their two children take their whey protein daily, and they seem to have iron constitutions!

The product is sold via network marketing. For Molson, this avoids expensive marketing campaigns and makes it possible to devote a larger portion of earnings to clinical research. We await the data from these clinical trials impatiently, given the very promising results of studies published thus far!

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