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REPORT

**Whey
Protein
POWER**

Surprising success in the prevention and treatment of cancer is making whey protein a popular supplement. New reports also confirm that whey boosts cellular glutathione and immune function.

By Will Brink <http://www.brinkzone.com/>

The 1997 International Whey Conference held at the Westin Hotel O'Hare Hotel in Chicago was truly an international event, with scientists from Australia, Germany, France, New Zealand, Japan, the U.S., Canada, Poland, and other countries in attendance and/or giving lectures. There was a wide range of topics covered regarding the many uses of whey proteins.

Whey protein concentrate has been extensively researched for its ability to prevent and treat cancer in laboratory animals. A lecture given by Dr. Geoffrey W. Smithers, from CSIRO Division of Food Science and Technology, Highett, Australia, revealed that animals fed whey protein concentrate had a substantial reduction in colon cancer compared with animals fed any other type of protein, including soy. Tumors in whey protein concentrate-fed animals were smaller than in animals fed other proteins. In young and old mice on a whey protein concentrate diet, colon cancer was reduced by 50 percent, compared with the effects of other proteins. Finally, mice fed whey protein concentrate showed much greater excretion of cancer-causing chemicals than did animals fed a meat-based diet.

Also at the conference, Dr. James F. Chmiel from Case Western Reserve University, in Cleveland, focused on the use of whey protein concentrate in people suffering from head and neck cancers. He noted that, although people with head and neck cancers typically suffer from years of malnutrition and heavy alcohol use, most surgeons are afraid of "feeding the tumor" and do not attempt to improve the patient's nutritional state prior to operating on the patient. Nevertheless, when patients are malnourished, the postoperative outcome is grim, with reduced healing, increased complications and severe immune suppression. Chmiel was quick to point out that well-nourished patients have a much better chance of long-term survival, fewer complications and improved immunity.

He showed the audience of 400-plus researchers that animals directly injected with cancer cells had greatly reduced tumor growth when fed whey protein concentrate, and that this effect was dose-dependent...that is, a 40 percent whey protein concentrate diet was more effective than a 30 percent diet, and so on. Chmiel also noted that, although surgeons can remove the bulk of the tumor, some tumor cells are always left behind and it is the job of the immune system to mop up the remaining cancer cells.

Clearly, whey protein concentrate has great potential with many types of cancers, including cancers of the head and neck. It can help the immune system mop up left over cancer cells post-operatively, as well as improve the nutritional and immune status of the patient. Chmiel said that human trials are under way and that the preliminary data are very promising.

Antioxidant Activity of Whey

Several powerful antioxidants in whey have recently been discovered and examined. Dr. Eric A. Decker, from the University of

Massachusetts, Amherst, discussed the antioxidant activity of two compounds found within whey proteins. Though he mentioned that milk proteins are not usually seen as being rich in antioxidants per se, it appears that whey is an exception.

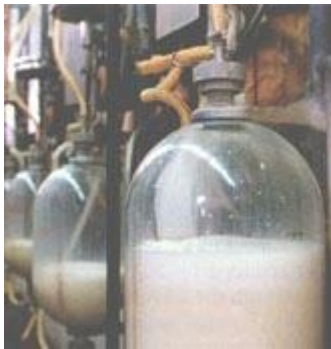
His research found that the two antioxidants in whey proteins are of a low molecular weight, are water soluble, and are quite stable through processing. They also are able to inhibit a wide range of free radicals and such free radical-inducing catalysts as iron, lipoxygenase, singlet oxygen, ferryl radicals and hydroxyl radicals. The two antioxidants in whey were found to be active at physiological pH and to be able to tolerate a wide range of temperatures.

Dr. K.D. Kussendrager of DMV International, in the Netherlands, reviewed one of the most promising fractions of whey, lactoferrin, and its ability to strongly inhibit iron-dependent free radical reactions by directly binding to iron. This iron-binding ability of lactoferrin also results in the inhibition of bacteria growth. Kussendrager also talked about another fraction in whey called lactoperoxidase that appears to have strong anti-microbial, anti-viral and antioxidant properties.

Dr. J.P. Perraudin of Biopole, Brussels, Belgium, outlined the abilities of both lactoferrin and lactoperoxidase to prevent iron dependent free-radical reactions, prevent anemia, and stimulate the immune system. Lactoferrin has become a super-hot dietary supplement because of its immune-enhancing effects. Those taking whey protein receive a potent dose of lactoferrin with each 20-gram dose. Whey proteins have been shown to raise levels of the powerful antioxidant and immune stimulant glutathione. However, these research findings show that whey proteins have far more benefits than their ability to raise glutathione.

Milk Proteins As Potential Diet Aids

Milk proteins such as casein and whey are known to contain glycomacropeptide, a powerful stimulator of cholecystokinin, which plays many essential roles relating to gastrointestinal function, including the regulation of food intake. In addition to being a regulator of food intake, cholecystokinin stimulates gall bladder contraction and bowel motility, regulates gastric emptying, and stimulates the release of enzymes from the pancreas. In animals, a rise in cholecystokinin is followed by a large reduction in food intake.



Dr. J.L. Maubois from INRA, Rennes, France, reported that the ingestion of whey and casein in six healthy volunteers resulted in a large increase in cholecystokinin release. (Casein has a higher concentration of glycomacropeptide than whey, but whey does appear to have an effect on cholecystokinin release.) This research could lead to the use of certain milk proteins as an appetite suppressant and/or diet aid. Many bodybuilders rely heavily on whey and casein-based protein supplements when dieting, which could be partially responsible for their success.

Whey, Immunity And AIDS

Finally, and possibly most importantly, was a lecture by Dr. Gustavo Bounous from Immunotec Research Ltd., in Vaudreuil-Dorian, Canada, regarding the uses of whey protein concentrate with the complex of diseases known as AIDS. Bounous is probably the most prolific and best known

researcher in the world today regarding the use of whey protein concentrate for the prevention and treatment of cancer, AIDS and immune suppression.

Bounous outlined his long history of research into the many benefits of whey protein concentrate for preventing cancer, improving immunity, raising glutathione, and fighting AIDS. Bounous explained that HIV needs low glutathione levels to replicate and that HIV has an antagonistic relationship to glutathione...that is, low cellular glutathione allows HIV to multiply and high glutathione dramatically slows viral replication. He has found a substantial reduction in virus activity in cells with an improved glutathione status after the ingestion of whey protein concentrate. Moreover, he cited a recent finding that the more glutathione found in the lymphocytes (immune cells) of people with HIV, the longer they were likely to survive.

Bounous also has found that this inhibitory effect of glutathione on HIV works on many non-retro viruses, which shows that the effect is not virus-specific. This means that increased glutathione levels (from the ingestion of whey protein concentrate) potentially inhibits a wide range of viruses.

One case in which Bounous used whey protein concentrate to treat AIDS involved an entire infected family. Lab reports indicated how each family member reacted to whey protein concentrate treatment. The wife experienced a drop in viral load from 19,000 to just 3,000 in a matter of months. Her CD4 helper T cells-the immune cells most affected by the HIV virus-rose slightly. The son in the family had a tenfold reduction in viral load, while the husband seemed to be the only semi-nonresponder in the family, with a slight drop in viral load and little change in CD4 counts.

Bounous said he has many case reports such as these showing clinical improvements in viral counts, CD4 numbers, and overall well-being among people he has treated with whey protein concentrate. Bounous was clear to point out that he does not see whey protein concentrate as an alternative to traditional treatments, but as a very effective adjunct to traditional therapies for a wide

range of diseases.

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