

## ***BULLETIN***

Dr. Elizabeth H. Jeffery, Professor of Nutritional Pharmacology and Toxicology University of Illinois, has provided additional information regarding the ingredient BroccoRaphanin® as implemented during her continuing studies emphasizing the biochemical mechanisms of cancer prevention by broccoli and other crucifers. The study involved two groups, each of which were deprived of glucosinolate metabolites prior to the test, followed by one group then administered BroccoRaphanin®.

**"I have some good news that I think you will feel has been worth awaiting. There were no glucosinolate metabolites in the control urines, and this now shows the appearance of BroccoRaphanin® metabolites in the urine of those receiving BroccoRaphanin® alone was significantly different from the control (group). Importantly, we saw several glutathione S-transferases up-regulated, not only following ingestion of sprouts, but also following the ingestion of BroccoRaphanin®. This is important for several reasons. First, these increases are indicative of bioactivity.**

**Second, glutathione S-transferase in white blood cells has been shown to reflect activity in soft tissues in the body, such as colon (Clapper, et al, 1997).**

**Third, these are the enzymes that have been shown to be increased in people fed broccoli.**

**These results show clearly that BroccoRaphanin® was converted to sulforaphane, which was absorbed and caused increases in phase II detoxification enzymes (and not in a range of phase I enzymes that we also evaluated). The product is effective."**



Dr. Elizabeth H. Jeffery is Professor of Nutritional Pharmacology and Toxicology, teaching and performing research in the area of safety and efficacy of functional foods and dietary supplements, with emphasis on biomechanical mechanisms of cancer prevention by broccoli and related crucifers. Dr. Jeffery gained her Ph.D. in Biochemistry from the University of London, England, studying the effects of vitamin E and selenium deficiency on detoxification enzymes. She then spent 10 years in the Dept. of Pharmacology at the University of Minnesota., studying the basic biochemistry of the hepatic detoxification enzymes, before joining the faculty of the University of Illinois in 1983. She is also Associate Head of the Graduate Program for Nutritional Sciences.