The Application of Chitin and Chitosan on Dietary Nutrition

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ABSTRACT

In the biochemistry of human nutrition, chitin-chitosan has been reported as capable of reducing the level of cholesterol , or decreasing the digestion and absorption of the fats of food in the intestinal canal . It is also reported that this function is linked to the positive charge it carries. The scholar points out that chitin processed with deacetylation can be used as a material of health foods capable of reducing the level of cholesterol. There ’ s no enzyme in the human intestinal canal， which decompose chitin-chitosan due to its structure is similar to dietary fiber . And it has the same physiological functions as do dietary fibers. Moreover, the chitin-chitosan in the stomach or intestinal canal may chelate other mineral elements and fat-soluble vitamins to decrease the absorption of chitin-chitosan by human body and excrete it. Besides, more studies should be conducted to verify the proliferation of beneficial bacteria in the intestinal canal by chitosan, the influence of chitosan on mucous cells on intestine wall, the optimal amount of chitosan contained in diet (refer to the smallest side effect), the effect of the degree of deacetylation / or effect of molecular weight, and the action of chitosan on other organic molecules with positive/negative charge or polarity in the stomach and intestine, and to confirm the advantages and disadvantages of chitosan. The Cabinet Department of Health has been unwilling to certify and endorse chitin-chitosan as health food, which may be attributable to the fact that some possible negative effects of this substance are still unknown and should be clarified. Therefore, when the special efficacy and functions of chitin-chitosan are being emphasized, we should investigate, with objective thinking, into other possible characteristics of this substance. This study will, from the viewpoint of animal experimentations and cellular research, discuss the physiological impacts of chitin-chitosan and its application to dietary nutrition.

Keywords : chitosan ; chitin ; cholesterol ; health foods ; dietary fiber

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