

Fucoidan is the nutraceutical for support of homeostasis of metabolic indicators and systems of their regulation

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Sustentation of homeostatic processes is the basic principle of vital activity of organism. Even small swings of concentration of some metabolites in the blood, especially glucose, lead to a violation of course of metabolic processes and pose a threat to vital activity of organism. Neuro-hormonal system, cytokine system and number of cell signaling systems participate in regulation of rate of metabolic processes. The influence of pharmaceutical preparations on these regulation systems can promote the development of serious complications, so there is an active search of natural food compounds with high bioactivity. The greatest interest in this situation is fucoidan, which is sulfated polysaccharide of brown seaweed. It is shown that it supports the work of the central nervous system by moderately reducing the death of cholinergic neurons and maintaining the level of dopamine, interferes with the development of hormonal imbalance, promotes a decrease in the level of inflammatory cytokines in the blood and maintenance of the concentration of pro-inflammatory, improves the functioning of the insulin cascade signaling systems at the mTOR kinase level by activating the translation process, leads to a decrease in free radicals (antioxidant) and the restoration of their level prooxidant, supports the homeostasis of the coagulation system due to anticoagulant and procoagulant properties. In this way, fucoidan should be attributed to nutraceuticals that promote health, improve quality and longevity of a person.

Biography

E K Mukhamejanov worked in the Institute of Physiology, responsible for the regulation of muscle contraction. In 1974-1991, he worked in the Institute of nutrition, responsible for the regulation of energy metabolism and metabolic diseases. He has developed metabolic model of balanced diet coupled with effects of toxic compounds, physical activity and dietary factors. He has developed specialized nutrition products for athletes and for the prevention and treatment of metabolic diseases. He is currently working in the Scientific Center of anti-infective disorders; develop approaches of reducing the negative impact of drugs.