



## Flower Pollen Extract and its Effect on Lipids

### Investigation on the Antioxidant Effect of Cernitin Pollen Extract

From the Institut of Pharmacology and Toxicology in Szezecein a report is informing of the antioxidant properties of Cernitin Pollen extract. The head of Clinical Pharmacology, professor Wojcicki, have studied rabbits and rats in this test. He divided the animals in 3 groups. One control group, one with a special high fat diet, and one with a combination of high fat diet and Cernitin pollen extract.

The study included an examination of lipid peroxidation in hyperlipidemic animals under the influence of pollenextracts. Malondialdehyde (MDA), a product of reduction during the oxidative process, was measured as an indicator of the degree of peroxidation. Also other parameters were measured as an indicator of the degree of peroxidation. Also other parameters was measured; cholesterol, triglycerides and lipoproteins.

The experiment was conducted over a period of 12 weeks for rabbits and 2 weeks for rats.

The study demonstrated the reduction of MDA concentrations under the influence of Cernitin pollen extracts, suggesting anti oxidant properties. Total cholesterol and triglyceride content was also decreased.

In the groups of animals receiving high fat diet, the level of cholesterol and MDA was heavily increased. In the blood plasma of rabbits MDA increased 372% and in rats cholesterol increased with 428% compared with the control group. When Cernitin extracts was added the level of MDA as well as cholesterol was significantly decreased. At the same time the alfa lipoprotein content was increased.

It has been demonstrated earlier that the Cernitin pollen extracts have a remarkable lipid lowering effect both in animals and humans. In

addition to this it was established that they have a beneficial effect against the development of atherosclerosis.

The anti-oxidant hypothesis stipulates that healthiness involves protection against the free radical injury to cells by peroxidation of lipids. This experiment shows that an increase in lipid peroxidation occurs in animals suffering from hyperlipidemia when compared with controls. The reduction of MDA concentrations under the influence of pollen extracts suggest that Cernitins are effective in reducing lipid peroxidation, i.e. that they protect the destruction of cells, caused by free radicals.

Furthermore the MDA concentration in plasma is probably relative to the MDA concentration in arterial walls, and lipid peroxidation plays a role in the production of atheromatous plaques and arterial tissue injuries. Although platelet aggregation and lipid peroxidation are not synonymous, still the events which leads to aggregation appear to be accompanied by the generation of free radicals and peroxidation of lipids.

In lipid peroxidation, this free radicals react with unsaturated fatty acid to produce endoperoxides, which are very active substances with macrophagic and cytotoxic properties. Peroxidation can occur as the result of inflammatory or degenerative processes. Atherosclerosis leads to wounds in the arterial walls, which is accompanied by inflammation.

The result of this study support those of ealier experiment to ascertain the significance of Cernitin pollen extracts on the treatment of lipid metabolism disturbances, and the clinical studies on the inhibition of platelet aggregation by Cernitins.

This study is related to the same Cernitin extracts which are the effective ingredient in Cernitromb capsules and Cervital tablets.