

**INFLUENCE OF THE *VITIS VINIFERA* POLYPHENOLIC CONCENTRATE
ON SOME BIOCHEMICAL INDICES OF GUINEA PIG BLOOD SERUM
UNDER EXPERIMENTAL PSORIASIS**

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Psoriasis – one of the most widespread chronic palindromic multifactorial skin diseases with genetic predisposition domination, which is characterized by hyperproliferation of epidermal cells, violation of keratinization as background to the inflammatory response in the dermis as well as lesion of nails, joints and hairy part of the head. In the papers of Zaitseva O.V. (2002, 2003) importance of lipid peroxidation (LP) and antioxidant system (AOS) status in psoriasis development pathogenesis were discussed, however a possible role of pro- and antioxidant status, which in turn is tightly bound with adaptive-compensatory mechanisms and neurohumoral system of control of metabolism including supramolecular structures of the genetic information transfer, is not properly investigated so far.

The aim of this work was to investigate an influence of the *Vitis vinifera* polyphenolic concentrate on LP and AOS status of Guinea pig blood serum under experimental psoriasis.

To fulfill such investigation we used an experimental model of focal hyperproliferation of epidermis (experimental psoriasis) by means of injection of material from sick people to experimental animals. The modeling was carried out by intraperitoneal administration of serum taken from sick people in the acute period. The serum was injected on daily basis in the dose of 0,3-0,4 ml/ 100g body weight. The intact group of animals got serum from healthy people (donors). After treatment of animals blood was collected, and some biochemical indices were detected in the group with pathology, in the group which was treated with the substance in question (9 mg polyphenols/ 100g b.w), in the group with the drug for comparison – cyclosporine (0,63 mg/ 100g b.w). Statistical processing of research data was made with the help of the Student (t) and Wilcoxon-Mann-Whitney (w) criteria.

On day 3 or 4 from the beginning of serum injection some diffuse erythematous rash was seen in animals. On day 5 or 6 the rash turned more local and legible. We also noted an infiltration, and in some inflammatory focuses – exfoliation. Rash appeared in 80% of animals approximately. A maximal development the process of experimental psoriasis reached on day 6 or 7 of experiment.

Results of LP status investigation witness that in animals of the control pathology group an intensity of biochemiluminescence and phosphorescence as well as content of metabolic products – diene conjugates and malonic dialdehyde – increased, but concentration of average mass molecules (AMM) decreased. Investigation of AOS in this group revealed an increased catalase activity, higher concentrations of haptoglobin and vitamin E, more sulfhydryl groups, but lower vitamin A content in comparison with the intact group of animals.

It is well known that AOS fulfils a control for LP products accumulation. Catalase and ceruloplasmin are enzymes of the antiperioxide defense and take part in the utilization of H₂O₂ by means of blocking of ROS action on free radical oxidation initiation stage. It's been ascertained that regardless of high catalase activity and increased ceruloplasmin level, a total antioxidant

blood plasma activity in the control pathology group stayed nearly the intact group level. One may assume that the antioxidant enzymes activation in animals with psoriasis is a molecular adaptation mechanism of urgent detoxication directed to neutralization of LP toxic products.

Administration of the *Vitis vinifera* polyphenolic concentrate to animals led to lowering of biochemiluminescence and phosphorescence intensity, reliable decrease in diene conjugate content 1,4 times, malonic dialdehyde – 1,8, and AMM concentration also. In the AOS we got a noticeable decline of catalase activity 1,5 times, haptoglobin concentration – 2,2 times in comparison with the control pathology group.

So, the data obtained maintain a high effectiveness of the *Vitis vinifera* polyphenolic concentrate using for psoriasis treatment due to stabilization of LP and AOS status.