

## **ENZYMATIC REDOX SYSTEM OF GLUTATHIONE IN INFLAMMATION OF VARIOUS LOCALIZATION**

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The glutathione system consists of reduced glutathione and specific enzymes which provide regeneration of reduced glutathione from its oxidized form. Glutathione peroxidase, glutathione reductase and glutathione transferase are the main ones.

As glutathione enzymatic redox system is an important component of antioxidant system in case of inflammation and ensures peroxides and hydroperoxides detoxication, inactivates free radicals, the aim of this study is to analyze the dynamics of the main glutathione redox system enzymes in the inflammatory process in different locations. As a result we established Regardless of the site of inflammation an imbalance occurs in glutathione system as a violation of the reduced and oxidized glutathione ratio associated with increased consumption of reduced glutathione during free radicals neutralization, which are formed due to the lipoperoxidation activation.

Noteworthy is that at the same time as reduced glutathione has antioxidant activity in serum, the oxidized glutathione prevalence indicates the depletion of antioxidant capacity of the body. Thus, the data shows a marked imbalance of reduced and oxidized glutathione and antioxidant capacity shortage of blood in rats with acute inflammation.

Regardless of the inflammatory process localization a significant decrease of all three enzymes which are involved in the regeneration of reduced and oxidized glutathione occurs. Reducing activity formed from 1.3 times to 2.8 times in such sequence: heart, eyes, joints and kidneys. This can be explained by different rates of blood velocity in organs and associated with this speed glutathione turnover in the body and different histohematogenous organs barriers permeability and blood rheology. Significant decrease of reduced glutathione in the blood serum of nonlinear albino rats (220.0 180.0 g.) with the inflammatory process in different locations connected with the lack of specific enzymes of glutathione system which ensure the reduction of oxidized glutathione and, consequently, supplement the pool of reduced glutathione.