

INFLUENCE OF SELENIUM AND LEAD ON THE ACTIVITY OF δ -AMINOLEVULINIC ACID DEHYDRATASE *IN VITRO*

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Summary. The influence of selenide anions (Se^{2-}), lead cations (Pb^{2+}) and the ligand anions – acetate (CH_3COO^-) on the activity of enzyme δ -aminolevulinic acid dehydratase (δ -ALAD) *in vitro* was investigated. The analysis was performed in human and animal blood in several different ways: increasing the concentration of Se^{2-} additives on the base of background Pb^{2+} and added the fixed concentration of active Pb^{2+} additive, and increasing the concentration of Pb^{2+} , and in the absence or presence of fixed additive of the Se^{2-} ions. The obtained curves of the consecutive multi-dot dependences showed that the influence of Se^{2-} ions on the δ -ALAD activity in human and bovine blood is analogical. The protective influence of Se^{2-} ions in the presence of Pb^{2+} additives in human blood is lower than that only background Pb^{2+} concentrations. The diminutive concentrations of Se^{2-} ions slightly changed the δ -ALAD activity penetrating its maximum, while high concentrations inhibit the activity of enzyme. Therefore the diminutive Pb^{2+} concentrations steeply reduce the δ -ALAD activity penetrating its minimum, higher ones slightly change the enzyme activity penetrating the maximum, and high concentrations of lead ions inhibit the activity of enzyme. The inhibiting influence of Pb^{2+} ions on the blood δ -ALAD activity, have been assessed while evaluating the position of inhibition leap in the curve of the consecutive multi-dot dependences, in the presence of Se^{2-} ions is lower than that in case of the absence of Se^{2-} ions in blood. The estimated influence of acetate anions on the activity on δ -aminolevulinic acid dehydratase in dog's blood was moderate.

Keywords: lead, selenium, acetate, blood, δ -aminolevulinic acid dehydratase, activity.