

## ELECTROPHORETIC ANALYSIS OF SERUM PROTEINS IN STRENUOUSLY TRAINED HORSES REVACCINATED AGAINST EQUINE HERPES VIRUS 4/1 AND EQUINE INFLUENZA VIRUS

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**Abstract.** The objective of the current paper was to study the impact of physical exercise on electrophoretic migrational profile of serum protein fractions in horses revaccinated against equine herpes virus 4/1 (EHV 4/1) and equine influenza virus (EIV).

Total protein concentration in serum was determined by the biuretic reaction using a commercial kit. Determination of protein fractions was performed through microelectrophoresis of the serum on a buffered agarose gel with pH 8.6.

Fifteen healthy Hanoverian stallions were used and separated into three groups – group A (3 non-vaccinated horses), group B (6 revaccinated horses) and group C (6 revaccinated and submitted to physical exercise horses). Group C horses performed barrier jumping for 4 consecutive days, beginning from day 14 following revaccination.

In horses of Group A there were no statistically significant changes in the studied serum protein fractions. In Group B, the concentration of total globulins and  $\gamma$ -globulins was above the reference range on day 1 (corresponding to day 18 after revaccination), resulting in the stimulation of the immune response.

Compared to horses from Group B, the combined effect of the revaccination and the physical exercise in Group C led to statistically significantly higher concentrations of  $\beta_1$ - globulins on hour 2 and day 4, and increased albumin and total protein on hour 0 as well and to lower  $\beta_2$ - globulins 2 hours after physical exercise, but all parameters were within reference intervals. Total globulin concentrations throughout the study period (except on day 4) and of  $\gamma$ -globulins on day 1 after physical exercise rose above the reference intervals.

The results obtained from this research show that the physical exercise of horses revaccinated against EHV 4/1 and EIV has a modifying effect on serum proteins, without suppressing the protective function of  $\gamma$ -globulins. This is important when assessing the health condition of revaccinated horses during training and parcourt competitions.

**Keywords:** electrophoresis, horses, physical exercise, revaccination