Abstrakt

Nowadays exist a lot of methods for setting the glutathione in biological materials. The aim of this work was to develope the right method and optimal conditions for the separation and identification of reduced and oxidized glutathione in red blood cells by capillary electrophoresis. Our biggest effort was to find and eliminate long pre-analytic procedures mentioned in most of the published articles and to find the optimal and fast method for setting forms of glutathione.

We optimized conditions which influence the analyze GSH and GSSG for examle: pH and concentration of borate buffer, internal diameter and length of fused-silica capillary, voltage, wavelength, aplying sample under preasure (time dosetion), temperature and frequency. Optimalization has been tryed in two different systems of capillary electrophoresis with the plan to find the most suitable electroforeogram for setting the glutathion in hemolyzate of red blood cells.

The best resolution we obtained from using 300 mmol/l borat buffer in pH 7,8. For the separation we used fused-silica capillary in 47 cm lenght and diameter 75 μm. The measurement was passing with voltage 25 kV, current 30 μA, temperature 25^{o}C and the wavelenght 200nm on capillary electrophoresis from company Prince Technologies.

We validated the method after installation of conditions and we used this method for setting the GSH and GSSG in red blood cells. Because of it´s good and rapid analytical preparation this method could be used for red blood cell glutathione measurement in healthy and ill patients.