

Abstrakt

Antibodies isolated from egg yolks of hens represent a useful tool for the prevention of bacterial, viral or parasitic diseases in both veterinary and human medicine. Other uses of these antibodies are in therapy, e.g. in the treatment of inflammatory bowel diseases and gastric ulcers or as antidotes against bacterial or snake toxins. When using them as a therapeutic and preventive preparation, it is necessary to design a suitable form for storage and subsequent application.

In the bachelor thesis, antibodies were prepared from egg yolks of immunized and control hens and three methods of their drying carried out by freeze drying, spray drying and free drying under laboratory conditions were compared.

Firstly, some physicochemical properties of the dried antibody samples from control hens were monitored, such as solubility and hygroscopicity. It was found that the dried antibodies were not hygroscopic and were relatively soluble, while the free-dried antibodies in fibre form were the slowest to dissolve. Comparison of the UV spectra of solutions prepared from dried antibodies showed that these preparations did not denature the antibodies, unlike the solution of antibodies heated at 80 °C for 2 minutes. Subsequently, the reactivity of the dried specific antibodies prepared against BSA was verified using the ELISA method. The results indicate that regardless of the drying method, antibody activity was preserved in all prepared samples. The gentlest drying method, besides lyophilization, is drying the antibodies at laboratory temperature.

Key words: ELISA, IgY drying, denaturation, chicken antibodies