

REGULATION OF THE IMMUNE RESPONSE IN CHICKEN BY SPECIFIC ANTIBODIES

Almantas Šiaurys, Juozas Pieškus, Irena Jonauskienė

Summary. Antibodies produced from mother organism via egg during incubation and circulating in chicken organism, not only participate in the protective immune reactions of the organism, but play an important immunoregulatory role, too. The mechanisms of the process, however, have not been fully elucidated yet. The aim of our study is to detect in model system, how specific antibodies, their Fab (fragment antigen binding) fragments and antibody-antigen complexes influence chicken immune response, directed against sheep erythrocytes. Antibodies and antibody-antigen complexes, belonging to chicken immunoglobulin Y (mammal IgG analog) class, have been detected to suppress the immune response; nonimmune IgY and immune IgY Fab fragments, however, have no significant effect on changes in antibody titre, immunoglobulin concentration and antibody producing cell number during the immune response. These experimental data demonstrate that it is only native IgY class antibody molecules that suppress the immune response in chicken organism, while in immunoregulatory processes important proves to be not only antigen-specific immunoglobulin molecule Fab area, but also molecule Fc (fragment crystalline) region responsible for effector functions.

Keywords: immunoregulation, antibodies, antigens, chicken, immunoglobulins, lymphocytes, sheep erythrocytes.