

NADZIEJA DRELA

*Department of Immunology, Institute of Zoology, Faculty of Biology, University of Warsaw, Miecznikowa 1, 02-096 Warszawa,
E-mail: ndrela@biol.uw.edu.pl*

IMMUNE SYSTEM OF MAMMALS IN MAINTENANCE OF BODY INTEGRITY

Summary

An important function of the mammalian immune system is the defense against pathogens, which is based on the ability of innate and adaptive immune cells to undergo activation by binding antigens by cell receptors. However, the mammalian immune system is primarily exposed to self antigens, intestinal microbiota, food, or fetal antigens (in the case of females), and the antigens of pathogenic organisms constitute a minority in this group. Under normal physiological conditions, the immune response is triggered by pathogen antigens, while other “harmless” antigens (self, microbiota, fetus) induce tolerance. This work describes the most important mechanisms that prevent the immune response to self antigens and protect against autoimmune diseases. Basic mechanisms of fetal protection against the attack of the mother’s immune system are presented. The role of intestinal microbiota interactions with immune cells in the gastrointestinal mucosa is characterized, which results in tolerance to microbiota and food antigens while maintaining the ability to defend against pathogenic microorganisms. Some positive effects of the autoreactivity of lymphocytes on organ development and homeostasis maintenance are emphasized.

Key words: gut-associated lymphoid tissue, immune system in pregnancy, maternal and fetal immune system in senescence, protective autoimmunity, tolerance of T and B cells