Tolerance of grafts
A P Malyshkin
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Studies on computer simulation of the genome leads to understanding of not only the characteristics of body elements (structure, weight, color, etc.), but also all interactions between them are directly determined at the genomic level. Tolerance of self-antigens should also be directly determined by the genome, through genomic or "smart" recognition, rather than through negative selection against self-reactive lymphocytes. The concept of linked functions holds that the very presence of the genes of class I MHC self-antigens in the genome "automatically" precludes immune response to these antigens. Therefore, integration of certain class I MHC genes of the donor into the genome of the recipient’s hematopoietic stem cells in the course of preoperative treatment should result in tolerance of the donor’s MHC antigens. Conceivably, this approach to the formation of tolerance should also work for xenogenic grafts, which would considerably enhance the possibilities of tissue and organ transplantation. The technique for integrating foreign class I MHC genes into the genome of hematopoietic stem cells has not been developed thus far. Solution of the numerous problems involved requires experimental research.

Biography
Alexander P. Malyshkin, male, microbiologist, graduated from Orenburg State Medical Academy in 1979 and worked for this academy as a researcher. After defending his Candidate of Science (Med.) dissertation (PhD thesis), he headed the Division of Laboratory Diagnosis of Orenburg Regional Tuberculosis Dispensary for some time. Dr. Malyshkin’s field of research includes microbiology, immunology, and issues of infectious diseases and their prevention. He is the author of the active susceptibility hypothesis and a fundamentally new approach to the prevention of infectious diseases of plants, animals, and humans (including the HIV infection) based on it. The main recent work (now in press) is the chapter on the prevention of infectious diseases in the book Aquatic Plants and Plant Diseases (to be published by Nova Science). Dr. Malyshkin is exploring the possibility of collaboration in further developing and implementing his novel approach to disease prevention, which could be used, in particular, for breeding infection-resistant animal and plant varieties.

Does vitamin D modulate the effect of acute or chronic stress on helper T cell subsets in peripheral blood
Bilge Pehlivanoglu
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Stress is an inevitable fact of life and affects all body systems. Maladaptive stress response is involved in pathophysiology of various diseases in a wide range of severity. The common point of all stress induced diseases is the dys/malfunction of immune system. On the other hand acute or chronic exposure to stressor and individual differences varies the immune response where helper T (Th) lymphocytes have a central role. The balance between subtypes of Th cells (Th1, Th2, Th17) is the key for the survival and health of the organism. Vitamin D besides being an essential component of metabolism has critical modulatory role in immune response. Its deficiency is reported to increase the duration and severity of diseases, among which autoimmune conditions predominate. Our studies concerning the effect of acute and chronic stress pointed out the reversal effect of Vitamin D on stress induced changes in Th cells. Acute stress augmented Th1 response, in contrary chronic stress shifted the immune response to Th2 as presented by increased IFN-γ and IL-4 respectively. These changes in Th1/Th2 balance reversed back to control levels with Vit D application. Similar changes with vitamin D exposure were observed in the cytokine IL-17 indicating Th17 cell activity. These results support the role of vitamin D as an immunomodulatory agent especially in stress related conditions, a role that should further be studied.

Biography
Bilge Pehlivanoglu, MD, after graduating from Hacettepe University Faculty of Medicine received the degree of physiologist from same University Department of Physiology in 2000. She continued her studies mainly on stress and immune system in Hacettepe University. Since 2001, she has been a member of the faculty at Hacettepe University Faculty of Medicine. Her publications are primarily related to stressful conditions and modulation of various body functions. She is on the editorial board of various medical journals.