KOSMOS Vol. 66, 4, 665–675, 2017

PAWEŁ MAREK MAJEWSKI

Department of Animal Physiology, Faculty of Biology, University of Warsaw, Miecznikowa 1, 02-096 Warszawa, E-mail: pmajew@biol.uw.edu.pl

OSTEOIMMUNOLOGY – INTERACTIONS OF THE IMMUNE CELLS AND BONE TISSUE

Summary

Interactions between cells of the immune system and cells of bone tissue are reported for over 40 years. Despite the passage of time, relatively little about them is mentioned in Polish literature and the term osteoimmunology is practically not used. The purpose of this article is an attempt to outline shortly current knowledge in this field, with particular attention paid to regulation of bone tissue metabolism linked to the existence of the kidney-bone-gut axis.. Homeostasis of both the level of minerals in the blood plasma and the mineral density of the bone is maintained as a result of dynamic changes in the activity of osteoblasts, osteoklasts and osteocytes, being one of the final forms of maturing osteoblasts, actively regulating these processes. The balance between the activities of these cells is regulated by, inter alia, hormones and cytokines as well as direct contact with immune cells. These factors affect the level of mineral release and deposition by osteoclasts and osteoblasts, respectively.

Key words: bone metabolism, bone mineral density, osteoimmunology, PHEX, phosphatonins