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Crystallization of calcium phosphates from prototypes of biological fluids on bone samples

© **Ekaterina A. Malovskaya**,[1+] **Olga A. Golovanova**,[1]*
Tatiana V. Panova,[2] **Svetlana A. Gerk**,[1] and **Vasily A. Osintsev**[2]
[1] *Department of Inorganic Chemistry. F.M. Dostoevsky Omsk State University.*
Mira Pr., 55a. Omsk, 644077. Omsk Region. Russia. Phone: +7 (3812) 64-27-00. E-mail: katovi@mail.ru
[2] *Department of Applied and Medical Physics. F.M. Dostoevsky Omsk State University.*
Mira Pr., 55a. Omsk, 644077. Omsk Region. Russia. Phone: +7 (3812) 64-27-00.
E-mail: golovanoa2000@mail.ru

*Supervising author; [+]Corresponding author

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Abstract

With the increasing number of bone diseases, greater attention is paid to the creation of bio-composite materials. There are large perspectives of experimental and clinical application for synthetic materials based on calcium phosphates, possessing high biocompatibility with respect to the human bone tissue and the ability to perform, by virtue of its inertia, the matrix function along which the neo-formation of bone structures take place. An important direction is the study of the crystallization process of the prototypes of biological fluids. In the work, the composition of bone tissue is determined: a primary crystalline phase is poorly crystallized carbonate-containing hydroxyapatite. It is shown that the crystallization of calcium phosphate on bone samples from the prototypes of bioliquids is possible, wherein carbonate-hydroxyapatite is produced in the interstitial fluid, and in synovial – octacalcium phosphate and hydroxyapatite.