CONFERENCE ABSTRACTS

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"Science and Progress"

DAAD

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Freie Universität Berlin

German-Russian Interdisciplinary Science Center

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Interaction between α-Aminoazoheterocycles and Palladium(II) Coordinated Isocyanides

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Metal complexes with aminocarbenes are widely employed in catalysis of various organic transformations as a powerful alternative to the commonly used phosphine complexes. Generation of aminocarbene complexes can be achieved via several distinct routes and the most promising approach involves metal-mediated addition of N-nucleophiles to metal-bound isocyanides. In our research group it was previously found that addition of palladium(II) isocyanides complexes to α-aminoazaheterocyles leads to aminocarbene complexes which themselves are nucleophiles and able to attack another isocyanide complex with the formation of binuclear complexes.

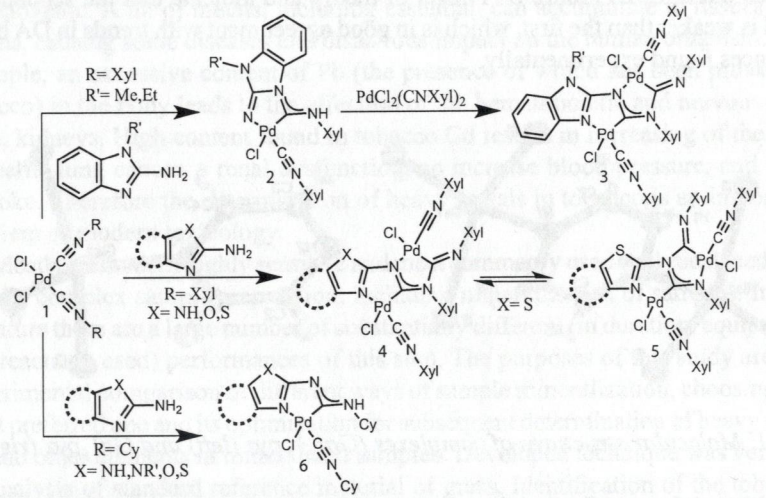

Fig. 1. Interaction between α-aminoazoles and Pd(II) isocyanide complexes.

In this research we have studied the relationship between the structure of carbene complex and nature of isocyanide ligand and α-aminoazaheterocyle.

Acknowledgements

Physicochemical studies were performed at Magnetic Resonance Research Center, Center for X-ray Diffraction Studies and Chemical Analysis and Materials Research Center of SPbU. The authors thank Russian Foundation for Basic Research (grant 14-03-31204 мол_а, 14-03-00297a) and SPbSU (grants 12.38.225.2014, 12.38.195.2014).

Adsorption of Bovine Serum Albumin onto Modified Polylactide Films

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The formation of macroporous 3D structures (named *scaffolds*) is based on biocompatible polymers and is intended to be used in autologous tissue regeneration which is a reasonably important part of modern biomedical materials research area [1]. Such scaffolds should contain special biofunctional motifs on their surface in order to promote cell adhesion and differentiation. In this study we propose the application of polymers with «molecular sites» – specific binding sites, formed via molecular imprinting (MI) strategy and capable for reversible binding of cell receptors as a tool for modification of polylactide based scaffolds [2]. The use of the macroporous cryogels as MI system has already shown exceptionally promising results [3].

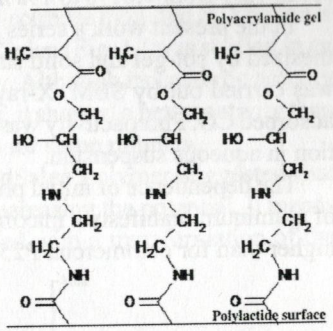

Fig. 1. Structure of modified PLA film.

Thus our aim was to form hydrogel layer on the surface of polylactide and imprint model protein into such layer. For that the films of polylactide (PLA) were made and modified by polyacrylamide gel (PAAg) (Fig. 1) with and without template - bovine serum albumin (BSA) molecule and then put in the BSA solutions for adsorption study. Films surfaces were analyzed by SEM method and contact angle measurements, adsorption and desorption processes were studied (Fig. 2). The experiments has shown that BSA tends to form multilayers on PLA surface which gradually saturates and gladly desorbs, unlike PAAg which never does any of those (BSA concentration 1 – 30 mmol/l) as it has lots of pores and they hold a sufficient amount of protein.

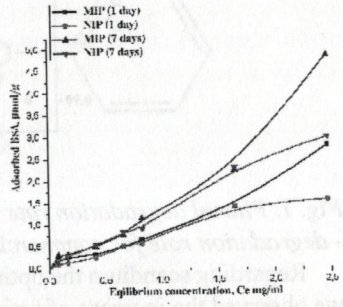

Fig.2. Adsorption isotherms.

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