Thematic Section: Pharmacological Research. **Full Paper**
Subsection: Analytical Chemistry. *Registration Code of Publication:* 14-37-3-105
Publication is available for discussion in the framework of the on-line Internet conference "*Butlerov readings*".
http://butlerov.com/readings/
Contributed: May 2, 2014.

Determination of drugs of strict account by amperometric monoamine oxidase biosensors

© **Elvina P. Medyantseva**,[1]*+ **Daniil V. Brusnitcyn**,[1] **Regina M. Varlamova**,[1] **Marina A. Beshevets**,[1] **Herman C. Budnikov**,[1] **Alfiya N. Fattahova**,[2] and **Sofya S. Babkina**[3]
[1] *Department of Analytical Chemistry. A.M. Butlerov Institute of Chemistry. Kazan Federal University. Kremlevskaya St., 18. Kazan, 420008. The Tatarstan Republic. Russia. Phone: +7 (843) 233-77-93. E-mail: Elvina.Medyantseva@kpfu.ru*
[2] *Department of Biochemistry. Institute of Fundamental Medicine and Biology. Kazan Federal University. Kremlevskaya St., 18. Kazan, 420008. The Tatarstan Republic. Russia. Phone: +7 (843) 231-42-30. E-mail: afattakh@rambler.ru*
[3] *Moscow State University of Mechanical Engineering. B. Semyonovskaya St., 38. Moscow, 107023. Russia. Phone: +7 (495) 223-05-23. E-mail: sofya.babkina@gmail.com*

*Supervising author; +Corresponding author

Keywords*:* biosensor, monoamine oxidase, carbon nanotubes, golden nanoparticles, drugs compounds.

Abstract

Amperometric monoamine oxidase biosensors on the basis of printed graphite electrodes, which are modified by multiwall carbon nanotubes and golden nanoparticles, were developed for the determination of tianeptine and naltrexone. The drugs compounds are related to the strict account medications. An opportunity of using biosensors for controlling residual quantity of drug compounds in biological fluids (urine) while drug monitoring and controlling the basal drug substance in dosage form was presented. The lower limit of detectability while using adrenaline as a substrate is 4.5×10^{-10} M for coaxil and 3.7×10^{-10} M for naltrexone.