

JOINT EVENT

31<sup>st</sup> Euro Global Summit and Expo on Vaccines & Vaccination

&amp;

4<sup>th</sup> World Congress and Exhibition on Antibiotics and Antibiotic Resistance

June 14-16, 2018 Barcelona, Spain

**Development of lateral flow assay for the detection of two antibiotics in human serum****Anna N Berlina, Bartosh A V, Zherdev A V and Dzantiev B B**

A N Bach Institute of Biochemistry-RAS, Russia

The antibiotics of beta-lactams and tetracyclines are widely applied for the treatment of infectious diseases of humans. Monitoring of antibiotic concentration as well as acute inflammation markers can be informative in the case of heavy bacterial infections. Often, these parameters are evidence of the correct distribution of antibiotics in the body and pharmacokinetics. Individual characteristics can change the parameter of distribution and influence on the results of treatment. Lateral flow tests are the most promising means for such monitoring due to the rapidity, ease of application and interpretation of the results. Under this work two test systems for both tetracycline and ampicillin detection in human serum were developed and analytical characteristics were compared. First was based on the direct antibody labelling with gold nanoparticles with average size of 28 nm. The second one differed by the application of native (unlabeled) antibody and conjugate of anti-species antibody with the same gold nanoparticles. As a result, indirect labelling of antibody provided shift in sensitivity to the low concentrations of determined antibiotics. For tetracycline, the working range of determined concentrations was 0.03-0.52 ng/mL compared to 0.15-1.43 ng/mL for direct labelling. For ampicillin these concentrations were 0.96-509.7 and 12.0-183.6 ng/mL, respectively. The time of analysis was 15 minutes.

**Biography**

Anna N Berlina has completed her PhD from A N Bach Institute of Biochemistry, Russian Academy of Sciences. Her interests include "Analytical chemistry, nanotechnology and alternative labelling in immunoassay".

berlina.anna@gmail.com