

5th World Congress on **Biotechnology**

June 25-27, 2014 Valencia Conference Centre, Valencia, Spain

Determination of arginine and its metabolites for clinical research and practice

Aufartova J^{1,2}, Piskackova H¹, KujovskaKrcmova L^{1,2}, Solichova D², Sobotka L² and Solich P¹ Charles

¹University, Czech Republic

²University Hospital, Czech Republic

Each phase of wound healing is characterized by certain events that required specific components. If wound healing process is affected negatively, it can result in chronic wounds. Despite the development of chronic wounds is multifactorial, the nutritional factors have an essential role in their development. L-arginine is synthesized in the early phase of wound mending by inflammatory cells and its levels become critically low after trauma. Arginine is metabolized into citrulline. The conversion could be directly through the reaction by nitric oxide synthases or indirectly via alteration catalyzed by arginase in ornithine, which is then converted in citrulline. In this study, 40 minutes ultrafiltration using Microcon Centrifugal Filters (Merck Millipore) and Centrifuge MiniSpinEppendorf was used for the sample preparation of wound exudates for determination of arginine, citrulline and ornithine. As a derivatization reagent was used a mixture of 3-mercaptopropionic acid with ortho-phthalaldehyd in borate buffer. Also various internal standards (parabens, D-norvaline, tocopherol acetate) were tested. A simple liquid chromatography method coupled with fluorescence detection for the determination of arginine and its metabolites in human liquids was developed. The newly developed method will be used for determination of real samples and could help to improve treatment of patients, who would benefit from special attention.

Biography

Aufartová J has completed PhD at Faculty of Pharmacy, Charles University in Prague. During study, she extended her experience to abroad at University of Coimbra (5 months), University of Las Palmas de Gran Canaria (over 2 years) and at Institute of Environmental, Brunel University (3 months) focused on environmental analysis of pharmaceuticals, such fluoroquinolones and estrogens in wastewater. She was visiting postdoctoral fellow at University of Tasmania, School of Chemistry (2 months). Currently, she is postdoc at Faculty of Pharmacy, Charles University in Prague. She is author/co-author of 6 papers in reputable analytical journals and 1 book chapter in scientific book.

aufartova@gmail.com