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8<sup>th</sup> European Conference on

## Predictive, Preventive and Personalized Medicine & Molecular Diagnostics

August 20-21, 2018 | Rome, Italy

## Individual sensitivity to oxidative stress and regulation function of anti-stress genes by autologous proteins

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Individual sensitivity to oxidative stress is important biological marker for medical management optimization. Dose of antioxidant used in treatment should be in accordance with that sensitivity. We propose a hypothesis that functions of anti-stress genes consist in regulation of ROS level through production of heat shock proteins p70. In this work AS influence on ROS production in isolated from peripheral blood neutrophils of donors was studied. The neutrophils samples from 50 donors 20-95 years were used. In the study AS was heated at 100°C for 30 sec. or was irradiated by UV rays 200-280 nm, 8 W, 10 min. Neutrophils were exposed to heat shock at 42°C for 30 sec., 1 min. and 3 min. with following determination of chemiluminescence reaction induced by zymosan. It has been demonstrated that AS can increase or decrease ROS production by neutrophils depending on presence in the serum of proteins with structure changed by heating or UV treatment. It has been also shown that expression of heat shock protein p70 family in neutrophils and lymphocytes of peripheral blood obtained from old donors was reduced in comparison with level of this expression in group of young donors. Shortening of heat shock stress duration for neutrophils was effective for determination of individual sensitivity to oxidative stress. We suppose that action of environment factors on AS proteins can cause an adverse increase of oxidative stress level as result of functional activity reduction of anti-stress genes.

## Biography

V F Semenkov has completed his Doctorate in 1983 at Immunology Institute, Moscow, Russia. He is the Professor at Medical University named N I Pirogov Immunology Department, Moscow. He has published more than 170 papers in reputed journals and now is a member of Scientific Council on Pathophysiology at the Medical University named N I Pirogov.

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