

2AD BR. 75

A SCIENTIFIC CONFERENCE  
WITH INTERNATIONAL PARTICIPATION

**„NUTRITION, TREATMENT AND  
CARDIOVASCULAR RISK MANAGEMENT“**

Organized by

SERBIAN ASSOCIATION FOR ARTERIOSCLEROSIS,  
THROMBOSIS AND VASCULAR BIOLOGY RESEARCH  
& THE SERBIAN PHYSIOLOGICAL SOCIETY

WITH 12 HOURS OF EUROPEAN EXTERNAL CME CREDITS (ECMEC) BY  
EUROPEAN ACCREDITATION COUNCIL FOR CONTINUING MEDICAL  
EDUCATION (EACCME)

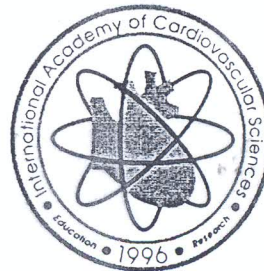
Under the auspices of

*Ministry of Sciences and Environmental Protection*

*Ministry of Health*

*Serbian Academy of Sciences and Arts - Branch in Novi Sad*

*International Academy of Cardiovascular Sciences (IACS)*



**ABSTRACT BOOK**

Novi Sad, May 24-27, 2007

## $\alpha_2$ -MACROGLOBULIN EXPRESSION DURING THE ACUTE-PHASE RESPONSE IN MALNOURISHED RATS

Uskoković A, Mihailović M, Dinić S, Grdović N, Vidaković M, Arambašić J, Bogojević D, Ivanović-Matić S, Martinović V, Petrović M, Poznanović G, Grigorov I

<sup>1</sup>*Institute for Biological Research, Department of Molecular Biology, Belgrade, Serbia*

n  
s  
l)  
n  
D  
i-  
l,  
2  
F  
v  
u  
F  
d  
e  
n  
r,  
s,  
c

During the acute-phase (AP) response, the synthesis rate and serum concentration of the AP protein  $\alpha_2$ -macroglobulin (MG) increases in the rat. MG gene transcription is mainly controlled by the inflammatory cytokine IL-6 and related *trans*-factors, the Signal Transducers and Activators of Transcription (STAT) and CCAAT/Enhancer Binding Protein (C/EBP). Nearly every aspect of the body's defense system is changed in malnutrition (MN). We examined whether MN affected rat MG synthesis and STAT3 and C/EBP $\beta$  expression. MN was induced in male Wistar rats by 50% food restriction during six weeks. The AP response was induced by turpentine oil injection (1  $\mu$ l/g body weight). Using "rocket" immunoelectrophoresis we observed that, compared to the well-nourished (WN) control, MN was associated with increased serum MG. The AP response promoted a further rise in serum MG. The STAT3 and C/EBP $\beta$  levels in the nuclear extract were examined by immunoblot analysis. In rats with MN, STAT3 was elevated and during the AP response, increased STAT3 levels were observed in both WN and MN rats. The C/EBP $\beta$  levels were similar in MN and WN rats however the AP response induced its significant increase in rats with MN. Obtained results suggested that malnutrition contribute to an increased MG expression by influencing IL-6 signal transduction pathway. Malnutrition-related increased of MG synthesis could be connected with positive regulatory role of STAT3, while the additional AP-related MG increased synthesis in malnourished rats require activity of C/EBP $\beta$ .