



**IMMUNOLOGY AT THE CONFLUENCE
OF MULTIDISCIPLINARY
APPROACHES
ABSTRACT BOOK**

**Institute for Biological Research "Siniša Stanković" National
Institute of Republic of Serbia
University of Belgrade**

Immunological Society of Serbia

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MULTIDISCIPLINARY APPROACHES**

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Sunday, December 8th Session: CELLS

Poster presentation

ARONIA BERRIES FRUIT WATER EXTRACT STIMULATES CELLS OF
THE IMMUNE SYSTEM *IN VITRO* AND *IN VIVO*

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Many plant extracts are well known for their anti-oxidant, anti-bacterial and anti-inflammatory activities including Aronia berry-derived juices and powders. In comparison to other black berries, Aronia berries have a greater content of phenolic constituents such as procyanidins, anthocyanins and phenolic acids with antioxidative and anti-inflammatory properties. However, the effects of aronia berries extract on the immune response parameters have been only sporadically assessed. When administered orally to healthy C57BL/6 mice (50 mg/kg body weight), aronia extract exerted immunomodulatory effects as evidenced by decreased proportion of F4/80⁺ macrophages, CD11c⁺ dendritic cells, CD4⁺ T helper cells, CD8⁺ T cytotoxic lymphocytes and CD4⁺CD25⁻ activated lymphocytes within the gut-associated lymphoid tissue. Surprisingly, oral consumption of chokeberry extract in doses of either 200 mg/kg bw or 50 mg/kg bw in mice with multiple low dose streptozotocin-induced type 1 diabetes resulted in the increase of blood glucose levels. Further, our study shows that this detrimental effect on type 1 diabetes pathogenesis may be a consequence of the pro-inflammatory nature of the extract. This is based on the evident stimulation of macrophages and dendritic cells by the extract through up-regulation of pro-inflammatory mediators such as nitric oxide, IL-12, IL-6 and TNF *in vitro*. Also, this extract augmented differentiation of IFN- γ -producing T helper 1 cells *in vitro*. Collectively, the obtained results imply that our particular aronia berries fruit extract displays pro-inflammatory characteristics and that care should be taken when these berries are to be included in the human diet.