



CONFERENCE  
**BOOK OF  
ABSTRACTS**

**RAD**  
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TWELFTH INTERNATIONAL CONFERENCE OF RADIATION,  
NATURAL SCIENCES, MEDICINE, ENGINEERING, TECHNOLOGY AND ECOLOGY  
JUNE 17-21, 2024 | HUNGUEST HOTEL SUN RESORT, HERCEG NOVI, MONTENEGRO

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## Effects of IGF-1 on the IGFB proteins level in the serum of obese male rats

Milan Obradović<sup>1</sup>, Sonja Zafirović<sup>1</sup>, Miloš Šunderić<sup>2</sup>, Nikola Gligorijević<sup>3</sup>,  
Katarina Banjac\*<sup>1</sup>, Olgica Nedić<sup>2</sup>, Esma Isenović<sup>1</sup>

<sup>1</sup> Department of Radiobiology and Molecular Genetics, VINČA Institute of Nuclear Sciences - National Institute of the Republic of Serbia, University of Belgrade, Mike Petrovica Alasa 12-14, Belgrade, Serbia

<sup>2</sup> Institute for the Application of Nuclear Energy, Department for Metabolism, University of Belgrade, Banatska 31b, Belgrade, Serbia

<sup>3</sup> Institute of Chemistry, Technology and Metallurgybolism, University of Belgrade, Njegoseva 12, Belgrade, Serbia

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Insulin-like growth factor binding (IGFB) proteins are a group of six highly conserved proteins that bind to insulin-like growth factors (IGFs) and transport them through the bloodstream to the target cells. The IGFB proteins play an important role in regulating IGF signaling pathways by lengthening their half-life. Obesity and associated disorders are linked to abnormal levels of IGFB proteins. Thus, this study aimed to evaluate how IGF-1 affects the levels of IGFB proteins in the serum of obese rats.

**Methods:** For 12 weeks, male Wistar rats were fed either a standard laboratory diet or a high fat (HF) diet (42% fat), and then half of the animals were given one dose of IGF-1 (50 g/kg.i.p.). The serum was collected after 24 hours of treatment. The levels of IGFB-1, IGFB-2, and IGFB-3 proteins in rat serum were determined using the western blot method.

**Results:** Obese rats had lower IGFB-1 ( $p < 0.05$ ) and IGFB-2 protein ( $p < 0.05$ ). IGF-1 increased the protein level of IGFB-1 ( $p < 0.001$ ) and slightly elevated the protein level of IGFB-2 ( $p = 0.06$ ) in obese rats. There were no significant changes in IGFB-3 protein levels in obese or obese rats treated with IGF-1.

**Conclusion:** The findings suggest that IGF-1 positively affects the levels of IGFB-1 and IGFB-2 proteins in the serum of obese rats.

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