# The Croatian Academy of Sciences and Arts (HAZU) Award for Medical Sciences 2025.

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The Croatian Academy of Sciences and Arts (HAZU) Awards represent one of the most prestigious recognitions for scientific and artistic achievement in the Republic of Croatia. For the field of Medical Sciences, the 2025 HAZU Award was presented to Assistant Professor Nikola Štoković, MD, PhD, from the University of Zagreb School of Medicine, for his scientific body of work entitled "Preclinical Research and Development of the Osteogrow-C Drug". This recognition highlights his substantial contribution to regenerative medicine and translational skeletal biology. Assistant Professor Štoković's research is primarily focused on bone morphogenetic proteins and their application in bone regeneration, tissue engineering, and orthopedic translational medicine. Over the course of his scientific career, he has received multiple international awards and distinctions for his work in regenerative medicine and bone biology, establishing himself as one of the leading young researchers in this field in Croatia.



*Figure 1. Award ceremony honoring Assist. Prof. Štoković, pictured with academicians Slobodan Vukičević, Davor Miličić, Marko Pećina, and Natalia Ivanjko, PhD, during the official reception following the award presentation.*

In 2025, Dr. Štoković was elected to the European Calcified Tissue Society (ECTS) Academy, reflecting the growing international recognition of his scientific achievements. He has also participated in and contributed to several major research initiatives, including projects conducted within the Centre of Excellence for Reproductive and Regenerative Medicine, as well as the European Union Horizon 2020. project OSTEOproSPINE. These projects have focused on innovative strategies for bone regeneration and the clinical translation of biologically active therapies intended for orthopedic and reconstructive applications.

A major focus of Dr. Štoković's work has been the development of Osteogrow-C, an investigational regenerative medicine product based on recombinant human bone morphogenetic protein 6 (rhBMP6) combined with calcium phosphate synthetic ceramics. Within the preclinical development process, Dr. Štoković played a key scientific role in designing and conducting extensive experimental studies aimed at optimizing the formulation and evaluating its biological performance. His research included rodent ectopic bone formation assays, which enabled evaluation of osteoinductive potential and formulation stability under controlled experimental conditions.

Following successful preliminary studies, the research was translated into clinically relevant large-animal models, including rabbit and sheep posterolateral spinal fusion models, as well as rabbit ulnar segmental defect models. These translational investigations demonstrated the ability of Osteogrow-C to promote bone regeneration and successful spinal fusion, providing important evidence supporting its therapeutic potential. The studies also contributed significantly to understanding the mechanisms underlying ectopic osteogenesis induced by bone morphogenetic proteins and ceramic biomaterials.

The completion of these preclinical studies represented an essential step toward future clinical application of Osteogrow-C. Through systematic optimization of formulation parameters, biological evaluation, and translational validation, Dr. Štoković's work helped define the optimal therapeutic composition for further clinical investigation. Beyond its direct translational significance, the research substantially contributed to broader scientific knowledge in skeletal biology, biomaterials research, and regenerative medicine. Over the last five years, these investigations resulted in eleven scientific publications in the field, reflecting both the scientific quality and international relevance of the work.

The recognition awarded by the Croatian Academy of Sciences and Arts, therefore, not only acknowledges an important scientific accomplishment in regenerative medicine but also emphasizes the broader significance of translational biomedical research in Croatia. By supporting innovative therapeutic approaches and interdisciplinary collaboration between medicine, biology, biomaterials science, and engineering, the work of Assistant Professor Nikola Štoković contributes to the advancement of modern regenerative therapies with potential clinical benefit for patients suffering from complex bone defects and degenerative skeletal conditions.