



Tudor Cozma

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WORK EXPERIENCE

Universitatea de Medicină și Farmacie "Gr. T. Popa" Iași – Iasi, Romania

Student

[01/10/2018 – Current]

First author in the following ISI publications:

- Maranduca, M.A.; Tanase, D.M.; Cozma, C.T.; et al. The Impact of Angiotensin-Converting Enzyme-2/ Angiotensin 1-7 Axis in Establishing Severe COVID-19 Consequences. *Pharmaceutics* **2022**, *14*, 1906. doi: 10.3390/pharmaceutics14091906.
- Maranduca, M.A.; Cozma, C.T.; Clim, A.; et al. The Molecular Mechanisms Underlying the Systemic Effects Mediated by Parathormone in the Context of Chronic Kidney Disease. *Curr. Issues Mol. Biol.* **2024**, *46*, 3877-3905. doi: 10.3390/cimb46050241.
- Clim, A.; Maranduca, M.A.; Filip, N.; Tănase, D.M.; Floria, M.; Pinzariu, A.C.; Popa, I.P.; Nemteanu, R.; Cozma, T.C.; Faur, F.I.; et al. The Influence of Atorvastatin Treatment on Homocysteine Metabolism and Oxidative Stress in an Experimental Model of Diabetic Rats. *Life* **2024**, *14*, 1414. <https://doi.org/10.3390/life14111414>
- OXIDATIVE STRESS: MARKER OF ENDOTHELIAL DYSFUNCTION IN EXPERIMENTAL MODELS OF RATS WITH HYPERHOMOCYSTEINEMIA, ANDREEA CLIM 1#, MINELA AIDA MĂRĂNDUCĂ 1, 2 #, *, ALIN CONSTANTIN PINZARIU 1, CRISTIAN TUDOR COZMA 1, DRAGOMIR NICOLAE ȘERBAN 1, IONELA LĂCRĂMIOARA ȘERBAN 1
- Coauthor in one book chapter, Springerlink

Multiple participations as Active Participant under the international students' congress **Congressis**:

- **2018:** Oral presentation and abstract publishing of "*Ultrastructural Aspects of Mitochondria in Colorectal Cancer*", in The Medical-Surgical Journal, vol. 123, march 2019 - supervisors: professor doctor Elena-Carmen Cotrutz, assistant doctor Pavel Onofrei.
- **2022:** Oral presentation and abstract publishing of "*Spontaneous Perirenal Hemorrhage (Wunderlich syndrome) in a young patient, following hemodialysis*", in the congress abstract book, 2022 - supervisors: assistants doctor Razvan Bobeica and Alexandra Bandac.
- **2022:** Oral presentation and abstract publishing of "*Surgical treatment of complicated Pulmonary Arteriovenous Malformation*", in the congress abstract book, 2022 - supervisors: professor doctor Cristina Grigorescu, assistant doctor Silviu Slavnicu.

Participation under the international students` congress **Surgicon**, as **Active Participant** with an e-poster presentation, as well as **Project Coordinator** and **Trainer** in multiple specialized workshops held on-site.

2021: E-poster, "*VIDEO-ASSISTED THORACOSCOPIC SURGERY UNVEILS A BRANCHED RIGHT HORN THYMUS. CASE REPORT.*" Abstract published in congress abstract book, JAMSA.

Member in SSMI society, 2018-2019:

- **Active participant** in "Lumina spirituala si cunoastere rationala" - **2018**.
- **Guiding the new generation**, 2019-2020.

Member in SSCR society in **2018-2019** and **2021-2022**:

- Multiple participation as **Attendee** in the introductive courses (**Knots and Sutures** and **Basic Surgical Skills**).
- **Observer** in the introductive courses
- **Trainer** in the introductive courses
- **Head of Surgical Techniques Department - 2021-2022.**
- **Coordinating and assembling of video, audio and PowerPoint theoretical material for:**
 - March 2021 - Knots and Sutures.
 - October 2021 - Knots and Sutures.
 - March 2022 - First edition of Mini Knots and Sutures.

- March 2022 - Second edition of **Advanced Skills in Digestive Surgery**.
- April 2022 - Second edition of **Introduction to Laparoscopy**.
- April 2022 - First edition of **Basic Skills in Plastic and Reconstructive Surgery**.
- **Volunteer** in first edition of **Romanian International Surgery Summer Experience - 2021**.
- **Volunteer of the year, 2021-2022 in SSCR**.
- **Active participation** in "Urology Surgery Case Report Session" - **2022**

Colegiul Național "Emil Racoviță" – Iasi, Romania

College student

[14/09/2006 – 21/06/2018]

Notable academic performance in multiple subjects, most remarkable in chemistry.

- Participation at the county phase of most school subjects.
- National qualification in Math Olympiad (2011, 2013), Physics Olympiad (2013, 2014), Biology (2015), Chemistry (2013-2018), Junior Science (2013, 2014), Earth Science (2015).
- First phase of international phase selection process in Junior Science (2013, 2014), Earth Science (2015), Chemistry (2016-2018).
- Advancing to the international phase of the following competitions:
 - International Junior Science Olympiad, Argentina, 2014 - Silver medal.
 - International Earth Science Olympiad, Brazil, 2015 - Bronze medal.
 - European Union Science Olympiad, Estonia, 2016 - Silver medal in team A.
 - Tuymaada Olympiad 2016, Yakutsk - Silver medal.
 - Tuymaada Olympiad 2017, Yakutsk - Gold medal.
 - Mendeleev Olympiad, 2018, Belarus - Gold medal.
 - International Chemistry Olympiad, 2018, Praga and Bratislava - Silver medal.

University of Medicine and Pharmacy Iasi Gr. T. Popa – Iasi, Romania

PhD student

[30/09/2024 – Current]

Scientific research and elaboration of animal models of sarcopenia. High interest in preventive cardiology and the link with oxidative stress on a molecular level.

Semmelweis University Budapest – Budapest, Hungary

PhD student

[26/08/2024 – Current]

Learning how to read and elaborate the highest level of evidence research papers, meta-analysis. Accustomization to advanced statistical calculus and instruments.

University of Medicine and Pharmacy Iasi – Iasi, Romania

Teaching assistant in universities

[14/05/2025 – Current]

Teaching assistant at department of Physiology, part of Fundamental Sciences II. Responsible with keeping the lecture materials up to date from a research trends perspective.

EDUCATION AND TRAINING

Highschool graduate of "Emil Racoviță Iași"

Colegiul Național Emil Racoviță Iași [12/09/2010 – 21/06/2018]

Address: Aleea Nicolina 4, 700221 Iasi (Romania) | Website: <https://www.racovita.ro/>

LANGUAGE SKILLS

Mother tongue(s): Romanian

Other language(s):

English

LISTENING C1 READING C2 WRITING C1

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Microsoft Excel / Microsoft Word / Microsoft Powerpoint / Microsoft Office / Outlook / Google Docs / Google Drive / Social Media

DRIVING LICENCE

Driving Licence: B

HOBBIES AND INTERESTS

Coffee - the chemistry and physics behind a delicious beverage. Coffee, for most people, is just a routine. By employing various online resources and physical equipment at home, I believe that the secrets of preparing delicious filter coffee are an opportunity for gathering nice people around. But what is delicious coffee? Chemistry comes to show us that basically burning sugars and releasing volatile acids gives us the drinking pleasure we crave every day.

PUBLICATIONS

[2026]
[Impact of a Hypocaloric Diet on Prognostic Biomarkers of Endothelial Dysfunction: A Prospective Study](#) Backg round/Objectives: To assess the impact of weight loss on the atherogenic profile of patients with obesity, we proposed the Atherogenic Central Load Index (ACLI). The aim of the study was to validate ACLI as a novel lipid biomarker reflecting the balance between atherogenic and antiatherogenic lipoproteins, the overall atherogenic burden, and its association with inflammatory markers. Methods: A prospective study was conducted from January 2024 to July 2024. A total of 73 adults with overweight or obesity completed a six-month dietary-based weight loss intervention. A 15% caloric deficit target was set, excluding the potential influence of pharmacotherapy, and limiting physical activity to daily walking. Statistical analysis focused on anthropometric measures, lipid panel parameters and derived atherosclerosis indices. Results: The intervention returned a median weight loss of 11.8 (IQR: 8–19) kg. Before–after analysis showed a statistically significant improvement in anthropometric indices and most lipid profile components. To assess the effect of weight loss on the atherogenic profile of patients, we proposed an atherogenic load index (Atherogenic Central Load Index (ACLI)). ACLI decreased significantly following the hypocaloric diet and showed a significant correlation with the inflammatory markers hs-CRP and IL-6. ACLI showed a strong, inversely significant correlation ($p < 0.05$) with AIP, hs-CRP and IL-6, at the time of intervention initiation and after 6 months. The evaluation of the obtained AUC values allowed to clearly highlight the superior discrimination performance of ACLI regarding the inflammatory markers hs-CRP and IL-6 in patients with overweight and obesity involved in dietary interventions for weight loss. Conclusions. The proposed index (ACLI) showed strong and significant associations with key inflammatory markers, including hs-CRP and IL-6. Moreover, ACLI demonstrated superior discriminatory performance for elevated inflammatory status in overweight and individuals with obesity undergoing dietary weight-loss interventions, outperforming traditional atherogenic indices related to atherosclerosis progression (AIP, CRI–1, and CRI–2). These findings support the potential clinical utility of ACLI as an integrative marker of atherogenic burden and cardiometabolic risk.
Authors: Lazar, C.; Maranduca, M.A.; Cozma, C.T.; Clim, A.; Moscalu, M.; Serban, D.-N.; Serban, I.-L. | **Journal Name:** Journal of Clinical Medicine

Lazar, C.; Maranduca, M.A.; Cozma, C.T.; Clim, A.; Moscalu, M.; Serban, D.-N.; Serban, I.-L. Impact of a Hypocaloric Diet on Prognostic Biomarkers of Endothelial Dysfunction: A Prospective Study. *J. Clin. Med.* 2026, 15, 2321.

[2024]

The Molecular Mechanisms Underlying the Systemic Effects Mediated by Parathormone in the Context of Chronic Kidney Disease

Chronic kidney disease (CKD) stands as a prominent non-communicable ailment, significantly impacting life expectancy. Physiopathology stands mainly upon the triangle represented by parathormone–Vitamin D–Fibroblast Growth Factor-23. Parathormone (PTH), the key hormone in mineral homeostasis, is one of the less easily modifiable parameters in CKD; however, it stands as a significant marker for assessing the risk of complications. The updated “trade-off hypothesis” reveals that levels of PTH spike out of the normal range as early as stage G2 CKD, advancing it as a possible determinant of systemic damage. The present review aims to review the effects exhibited by PTH on several organs while linking the molecular mechanisms to the observed actions in the context of CKD. From a diagnostic perspective, PTH is the most reliable and accessible biochemical marker in CKD, but its trend bears a higher significance on a patient’s prognosis rather than the absolute value. Classically, PTH acts in a dichotomous manner on bone tissue, maintaining a balance between formation and resorption. Under the uremic conditions of advanced CKD, the altered intestinal microbiota majorly tips the balance towards bone lysis. Probiotic treatment has proven reliable in animal models, but in humans, data are limited. Regarding bone status, persistently high levels of PTH determine a reduction in mineral density and a concurrent increase in fracture risk. Pharmacological manipulation of serum PTH requires appropriate patient selection and monitoring since dangerously low levels of PTH may completely inhibit bone turnover. Moreover, the altered mineral balance extends to the cardiovascular system, promoting vascular calcifications. Lastly, the involvement of PTH in the Renin–Angiotensin–Aldosterone axis highlights the importance of opting for the appropriate pharmacological agent should hypertension develop. description...

Maranduca, M.A.; Cozma, C.T.; Clim, A.; et al. in *Curr. Issues Mol. Biol.* 2024, 46, 3877-3905.

[2022]

The Impact of Angiotensin-Converting Enzyme-2/Angiotensin 1-7 Axis in Establishing Severe COVID-19 Consequences

The COVID-19 pandemic has put a tremendous stress on the medical community over the last two years. Managing the infection proved a lot more difficult after several research communities started to recognize the long-term effects of this disease. The cellular receptor for the virus was identified as angiotensin-converting enzyme-2 (ACE2), a molecule responsible for a wide array of processes, broadly variable amongst different organs. Angiotensin (Ang) 1-7 is the product of Ang II, a decaying reaction catalysed by ACE2. The effects observed after altering the level of ACE2 are essentially related to the variation of Ang 1-7. The renin-angiotensin-aldosterone system (RAAS) is comprised of two main branches, with ACE2 representing a crucial component of the protective part of the complex. The ACE2/Ang (1-7) axis is well represented in the testis, heart, brain, kidney, and intestine. Infection with the novel SARS-CoV-2 virus determines downregulation of ACE2 and interrupts the equilibrium between ACE and ACE2 in these organs. In this review, we highlight the link between the local effects of RAAS and the consequences of COVID-19 infection as they arise from observational studies.e the description...

Maranduca, M.A.; Tanase, D.M.; Cozma, C.T.; et al. in *Pharmaceutics* 2022, 14, 1906.

[2025]

Atorvastatin Confers Renoprotection and Modulates Inflammation in Diabetic Rats on a High-Fat Diet

Objective: Uncovering the renoprotective and anti-inflammatory effects of atorvastatin treatment in diabetic-and-obese rats by employing traditional renal function indicators (urea and creatinine) and four prototypical cytokines (IL-1 β , IL-6, IL-17 α , TNF α). **Method:** Twenty-eight male Wistar rats, aged 6 months, 350–400 g, were randomized into four groups. The first group, G-I, the denominated control, were fed standard chow over the whole course of the experiments. The rodents in G-II were exposed to a High-Fat Diet. The last two groups were exposed to Streptozotocin peritoneal injection (35 mg/kg of body weight). A short biochemical assessment was performed before diabetes model induction to ensure appropriate glucose metabolism before experiments. Following model induction, only rodents in group G-IV were gradually introduced to the same High-Fat Diet as received by G-II. Model confirmation 10 days after injections marked the start of statin treatment in group G-IV, by daily gavage of atorvastatin 20 mg/kg of body weight/day for 21 days. At the end of the experiments, the biochemical profile of interest comprised typical renal retention byproducts (urea and creatinine) and the inflammatory profile described using plasma levels of TNF α , IL-17 α , IL-6, and IL-1 β . **Results:** Treatment with Atorvastatin was associated with a statistically significant improvement in renal function in G-IV compared to untreated diabetic rodents in G-III. Changes in inflammatory activity showed partial association with statin therapy, TNF α and IL-17 α mirroring the trend in urea and creatinine values. **Conclusions:** Our results indicate that atorvastatin treatment yields a myriad of pleiotropic activities, among which renal protection was clearly demonstrated in this model of diabetic-and-obese rodents. The statin impact on

inflammation regulation may not be as clear-cut, but the potential synergy of renal function preservation and partial tapering of inflammatory activity requires further research in severely metabolically challenged models.

Authors: Lazar, C.; Maranduca, M.A.; Cozma, C.T.; Clim, A.; Moscalu, M.; Serban, D.-N.; Serban, I.-L. | **Journal Name:** Life

Maranduca, M.A.; Clim, A.; Tanase, D.M.; Cozma, C.T.; Floria, M.; Clim, I.A.; Serban, D.N.; Serban, I.L. Atorvastatin Confers Renoprotection and Modulates Inflammation in Diabetic Rats on a High-Fat Diet. Life 2025, 15, 1184.