

Curriculum Vitae- Nikos K. Karamanos

Professor of Biochemistry and Organic Biochemical Analysis, University of Patras, Greece

SHORT PRESENTATION / PROFILE

Nikos K. Karamanos is a Professor of Biochemistry in the Department of Chemistry, University of Patras. He is deputy and academic editor, member of the editorial boards/advisory editorial board of several international peer-reviewed journals and member of the board of the Hellenic Society of Biochemistry and Molecular Biology (HSBMB), coordinator of the Hellenic Matrix Biology Section of HSBMB, board member of the Int. Society of Matrix Biology (ISMB) and an expert in FP7 "Health". He is the chairman of the FEBS Advanced Lecture Courses in "Matrix Pathobiology, Signaling and Molecular Targets" (2007-2022) and "Extracellular Matrix: Cell Regulation, Epigenetics and Modeling" (2018). Prof. Karamanos is the series editor of the Book series: *Biology of Extracellular Matrix*, Springer-Nature and editor of the International book edition: *Extracellular Matrix: Pathobiology & Signaling*, Walter De Gruyter, Berlin/Boston (2012). He is guest editor/coordinator in 17 Special/Thematic issues and co-author of >300 original research and review publications in peer-review international journals (Scopus database). His work was cited more than 15,000 times and his h-index is 62 (Scholar Google).

RESEARCH INTERESTS

Prof. Karamanos has extensive experience in the fields of Biochemistry, Biochemical Analysis & Matrix Pathobiology. His interests involve matrix pathobiology, cell signaling, molecular targeting, pre-clinical evaluation of drugs at cell level and cytotoxicity. More focus is given to proteoglycans, glycosaminoglycans, metalloproteinases and epigenetic regulation, in tissue organization, development and progression of various disorders, such as cancer. The signal transduction pathways (receptors and intracellular mediators) as well as the effects of growth factors and cytokines as regulatory mechanisms in matrix macromolecular expression are also studied.

DETAILED DATA

Education, degrees & scientific carrier

- 1984 & 1988: Diploma (Chemistry, grade A) and PhD (Biochemistry, grade A), Dept. of Chemistry, University of Patras
- 1988-1990: Researcher and Post-doc Research Fellow (annual periods, total 3-years) at Karolinska Institute, Department of Medicine, Stockholm, Sweden
- 1990-2002: Lecturer (1990), Assistant Professor (1993), Associate Professor (1999), Department of Chemistry, University of Patras
- 2003-present: Professor of Biochemistry & Org. Biochem. Analysis, University of Patras
- 2004-present: Member of the administrative board of the Hellenic Society of Biochemistry & Molecular Biology (HSBMB) as President (2006-2007, 2018-2019), General Secretary (2004-2005 & 2011), Vice-President (2008-2011 & 2014-2019)
- 2003-present: Coordinator of the Hellenic Matrix Biology section of HSBMB (former Hellenic Research Club for Connective Tissue and Matrix Biology) and contact person in the European Matrix Biology Europe (former Federation of European Connective Tissue Societies-FECTS)
- 2007-2009: European Union Expert, FP7, theme "Health"
- 2010-present: Collaborative Faculty Member of the Institute ICE-HT (FORTH), Patras, Greece
- 2007-2011: Head of the Department of Chemistry, University of Patras
- 2011: European Registered Toxicologist (ERT)
- 2012-2020: Member of the Quality Assurance Unit of the University of Patras (MODIP) and since 2014 president of the Unit
- 2014-2020: Vice-Rector of Academic & International Affairs
- 2016-2019: FEBS education ambassador in molecular life sciences
- 2019-2020: Council member (elected) of the Int Society of Matrix Biology (ISMB)
- 2021-present: Vice-president of ISMB

Editorial Scientific Boards/Reviewer & Awards

Member of the editorial boards of several peer-reviewed journals, among them: Matrix Biology (Deputy editor), FEBS Journal (Academic Editor/editorial & advisory board member), Matrix Biology Plus (Deputy editor)

PLoS ONE (academic editor), The Journal of Biological Chemistry (2009-2014), Current Medicinal Chemistry, Biomedical Chromatography, Current Pharmaceutical Analysis, Current Chemical Biology, Chromatographia (2004-2009), Data Sets in Biology, Science Open and several other scientific journals. Participation in the editorial boards and action as reviewer in peer-reviewed scientific journals (*ca* 40) in the areas of Biochemistry, Biochemical & Pharmaceutical Analysis, Cell Biology, Molecular Biology, Anticancer Agents, Oncology, Cancer, Matrix Biology, Cell signaling, Targeted Molecular Therapeutic Approaches, Extracellular Matrix, Drug Pharmacological Evaluation and Cancer.

Several awards have been conferred by various Scientific Societies, among them the Hellenic Society of Biochemical & Molecular Biology Society, Society for Microbiology and Biopathology, Pediatrics, Society for Anticancer Research, European associated Societies Comet and Leonardo da Vinci, Neurological Society, Federation of European Connective Tissue Societies, etc. Several publications on pharmacological targeting of metalloproteinases and proteoglycans were among the top most-cited publications in several journals and five articles are included in the highly cited ones in the Web of Science database. According to Scholar website (link is given below) Prof. Karamanos is among the top authors and most cited in the areas: Matrix Biology, Glycosaminoglycans, Proteoglycans, Cancer Cell Biology and Metalloproteinases.

Guest Editor/Editor

1. International Book Series: [Biology of Extracellular Matrix, Springer-Nature](#) [Series Editor since 2018]
2. International Book Edition: [Extracellular Matrix: Pathobiology and Signaling](#), ISBN 978-3-11-025876-9 (2012), Walter DeGruyter, Berlin/Boston, p1-890 [Editor]
3. Special Issue: [Matrix Effectors and Cancer](#), *Cancers* (2021) [Guest Editor with Dr. Z. Piperigkou]
4. Special issue: [Translating Extracellular Matrix: from Cancer Progression to Therapeutics](#), *Seminars in Cancer Biology* (2020) 62; iii-v [Guest Editor]
5. Special issue: [Complexity of Matrix Phenotypes](#), *Matrix Biol Plus* (2020) In press [Guest Editor with R.V. Iozzo]
6. Special issue: [Matrix Modeling and Remodeling: Proteoglycans remodeling in cancer: Underlying molecular mechanisms](#), *Matrix Biology* (2019), 75-76;1-330 [Guest Editor]
7. Special issue: [Extracellular Matrix in Health and Disease](#), *FEBS J* (2019), 286;2823-3075 [Guest Editor]
8. MiniReview Series: [Matrix pathobiology-central roles for proteoglycans and heparanase in health and disease](#), *FEBS J* (2017) 284;7-9 [Coordinator]
9. Special Issue: [Matrix-mediated cell behavior and properties](#), *Biochimica et Biophysica Acta* (2014) 1840;2385 [Guest Editor]
10. MiniReview Series: [Novel insights into matrix pathobiology regulatory mechanisms in health and disease](#), *FEBS J* (2014) 281;4978-4979 [Coordinator with A. Passi]
11. Special Issue: [Proteoglycans signaling, targeting and therapeutics](#), *FEBS J* (2013) 280;2119-2534 [Guest Editor with R. Linhardt]
12. MiniReview Series: [Regulatory roles of hyaluronan in health and disease](#), *FEBS J* (2011) 278;1411 [Coordinator with V. Hascall]
13. MiniReview Series: [Metalloproteinases in Health and Disease: challenges and the future prospects](#), *FEBS J* (2011) 278;1 [Coordinators with H. Nagase]
14. MiniReview Series: [Proteoglycans in Health and Disease: emerging concepts and future directions](#), *FEBS J* (2010) 277;3863 [Coordinator with R.V. Iozzo]
15. Special issue: [Matrix Pathobiology, Signaling and Molecular Targets](#), *Conn. Tissue Res.* (2008) 49 (3&4) [Guest Editor]
16. Special issue: [Solid phase assays for molecules with biopharmaceutical importance](#), *J Pharm Biomed Anal*, Elsevier (2004) 34 [Guest Editor]
17. Special issue: [Analysis of carbohydrate macromolecules by capillary electrophoresis: glycoproteins, proteoglycans/glycosaminoglycans and glycolipids](#), *Biomed Chromat*, Wiley InterScience (2002) 16 [Guest Editor]

Organization of Conferences, Workshops, Meetings/Symposia

Chairman of the FEBS Advanced Lecture Courses (since 2007 and every two years) in the thematic area: Matrix Pathobiology, Signaling and Molecular Targets (www.chemistry.upatras.gr/febs-mpst2007, www.febs-mpst2009.upatras.gr, www.febs-mpst2011.upatras.gr, www.febs-mpst2013.upatras.gr, www.febs-mpst2015.upatras.gr, www.febs-mpst2017.upatras.gr, <https://mpst2019.febsevents.org>, <https://mpst2022.febsevents.org>). Chairman of the 2018

FEBS Advanced Lecture Course on Extracellular Matrix: Cell Regulation, Epigenetics and Modeling (www.extracellularmatrix.febsevents.org). Chairman of the 2nd Matrix Biology Europe (MBE) Conference (being the XXVth FECTS Meeting) (<http://www.mbe2016.upatras.gr>); Co-chair of the International Conference on Proteoglycans, Seven Lakes-Italy, 2017; Chairman of the 60th and 71st Hellenic Conference of the Hellenic Society of Biochemistry & Molecular Biology (Athens, 2009 and Patras 2020, respectively); Scientific Secretary and International Contact person of the 33rd FEBS Congress-11th IUBMB Conference (2008); Secretary of the 17th FECTS International Conference (2000); Chairman of the Comet EU Training Course on Advanced analytical techniques (1992) and Leonardo da Vinci EU meeting on Microseparation techniques (1998); Member of the organizing committee of a series of scientific meetings of the Hellenic Connective tissue and Extracellular Matrix section and of the 1st and 2nd Conference of Biosciences of the University of Patras as well as in a series of international conferences.

Publications/Books/Lectures

- >320 publications (Scopus database) in international peer review journals
- 1 International book with 54 chapters and 7 thematic sections (890 Pages), Published by De Gruyter, 2012, Berlin/Boston
- 40 Publications as chapters in book series and full proceeding
- 3 books on biomolecules structure-function and enzyme immunoassays
- More than 400 abstracts in proceedings of International and National scientific conferences
- More than 100 invited, confirmed and plenary lectures in International meetings/conferences (including FECTS-2004 Italy, FEBS-2010 Sweden, Gordon Research Conference on Proteoglycans-2012, 2014, 2016, 2020 USA, International Proteoglycans' conference, 2013 & 2015 Germany and Seoul, Matrix Biology Europe 2020 (opening invited lecture), Hellenic scientific conferences and International Research Institutes and Universities (including University of Reims and Paris-France, Munster- and Leipzig-Germany, Varese-Italy, Uppsala-Sweden)

Recent Representative Publications

- Karamanos NK, Piperigkou Z, Passi A, Götte M, Rousselle P, Vlodavsky I (2021) Extracellular Matrix-Based Cancer Targeting *Trends Mol Med. S1471-4914(21)00190-8* (Impact factor, IF: 11.95)
- Karamanos NK, Theocharis AD, Piperigkou Z, Manou D, Passi A, Skandalis SS, Vynios DH, Orian-Rousseau V, Ricard-Blum S, Schmelzer CEH, Duca L, Durbeek M, Afratis NA, Troeberg L, Franchi M, Masola V, Onisto M (2021) A guide to the composition and functions of the extracellular matrix, *FEBS J*, In Press, doi: 10.1111/febs.15776. IF: 5.54
- Piperigkou Z, Franchi M, Riethmüller Ch, Götte M, Karamanos NK (2020) miR-200b restrains EMT and aggressiveness and regulates matrix composition depending on ER status and signaling in mammary cancer, *Matrix Biol Plus*, 6-7:100024
- Piperigkou Z, Karamanos NK (2020) Estrogen receptor-mediated targeting of the extracellular matrix network in cancer. *Semin Cancer Biol.* 62: 116-124. Impact factor IF: 9.66
- Theocharis AD, Manou D, Karamanos NK (2019) The extracellular matrix as a multitasking player in disease, *FEBS J.* 286(15):2830-2869. IF: 5.54
- Piperigkou Z, Karamanos NK (2019) Dynamic Interplay between miRNAs and the Extracellular Matrix Influences the Tumor Microenvironment. *Trends Biochem Sci.* 44(12):1076-1088. IF: 15.68
- Karamanos NK, Theocharis AD, Neill T, Iozzo RV (2019) Matrix modeling and remodeling: A biological interplay regulating tissue homeostasis and diseases. *Matrix Biol.* 75-76:1-11. IF: 11.58
- Theocharis AD, Karamanos NK (2019) Proteoglycans remodeling in cancer: Underlying molecular mechanisms. *Matrix Biol.* 75-76:220-25. IF:11.58
- Karamanos NK, Piperigkou Z, Theocharis AD, Watanabe H, Franchi M, Baud S, Brézillon S, Götte M, Passi A, Vigetti D, Ricard-Blum S, Sanderson RD, Neill T, Iozzo RV (2018) Proteoglycan Chemical Diversity Drives Multifunctional Cell Regulation and Therapeutics. *Chemical Reviews* 118(18):9152-9232. IF: 60.62
- Piperigkou Z, Götte M, Theocharis AD, Karamanos NK (2017) Insights into the key roles of epigenetics in matrix macromolecules-associated wound healing. *Adv Drug Deliv Res.* 129:16-36. IF: 15.47
- Piperigkou Z, Franchi M, Götte M, Karamanos NK (2017) Estrogen receptor beta as epigenetic mediator of miR-10b and miR-145 in mammary cancer. *Matrix Biol.* 64, 94-111. IF: 11.58

- Afratis N, Bouris P, Skandalis SS, Multhaupt HA, Couchman JR, Theocharis AD, Karamanos NK (2017) IGF-IR cooperates with ER α to inhibit breast cancer cell aggressiveness by regulating the expression and localization of ECM molecules. *Sci Rep.* 12 (7), 40138. IF: 4.26
- Piperigkou Z, Bouris P, Franchi M, Kletsas D, Theocharis AD, Karamanos NK (2016) Estrogen receptor beta as a key player in mediation of functional properties of aggressive breast cancer cells. *Matrix Biol.* 56, 4-23. IF: 7.40. *Featured in Faculty 1000 (F1000Prime)*- <https://f1000.com/prime/726362790>
- Theocharis AD, Skandalis SS, Gialeli C, Karamanos NK (2016) Extracellular Matrix Structure. *Adv Drug Deliv Rev.* 1 (97), 4-27. IF: 15.04
- Theocharis AD, Skandalis SS, Neill T, Multhaupt HAB, Hubo M, Frey H, Gopal S, Gomes A, Afratis N, Lim HC, Couchman JR, Filmus J, Sanderson RD, Schaefer L, Iozzo RV, Karamanos NK (2015) Insights into the key roles of proteoglycans in breast cancer biology and translational medicine. *Biochim Biophys Acta Rev in Cancer.* 1855 (2), 276-300. IF: 7.85
- Gialeli C, Theocharis AD, Karamanos NK (2011). Roles of matrix metalloproteinases in cancer progression and their pharmacological targeting. *FEBS J.* 278, 16–27. IF: 4.74 *Notable paper published in European Journal of Biochemistry/The FEBS Journal the last 50 years [The FEBS Journal 284 (2017) 4162–4171]*
- Kousidou O, Berdiaki A, Kletsas D, Zafiropoulos A, Theocharis AD, Tzanakakis GN, Karamanos NK (2008). Estradiol-estrogen receptor: a key interplay of the expression of syndecan-2 and metalloproteinase-9 in breast cancer cells. *Mol Oncol.* 2 (3), 223-232. IF:5.33

Trainees

- Supervisor of 10 Postdoctoral fellows
- Supervisor of 18 PhD and 35 MSc awarded studies
- Supervision of 1 Postdoctoral fellow, 3 PhD and 3 MSc graduate students

Collaborations and Research Networks

Collaboration at International level with Karolinska Institute, School of Medicine, Sweden, the University of Insubria, School of Medicine, Varese-Italy, University of Reims France, School of Medicine and University of Muenster, School of Medicine, Germany. Several other collaborations in Europe, USA, Japan and Brazil have been established; Coordinator of the Research Network: Biotargeting - Biomedical and Biotechnological Applications Research Network (www.biotargeting.upatras.gr), University of Patras.

Research Projects

Coordination of a number of National (15) and International (5) research projects.

Major recent research grants:

- Nanobiotechnological Injectable Extracellular Matrix (ECM) for cartilage regeneration, personalized therapy and identification of "individual" microbe metabolites involved in joint degeneration – ArthroMicroPerMed, NSRF 2014-2020 [2018-present]
- Matrix glycans as multifunctional pathogenesis factors and therapeutic targets in cancer – GLYCANC, Horizon 2020, Marie Skłodowska-Curie Research and Innovation Staff Exchange (RISE). Collaborators: Westfaelische Wilhelms University of Muenster, University of Reims Champagne-Ardenne, University of Insubria, University of Uppsala, National Center for Scientific Research “Demokritos”, Serend-IP GmbH, Fidia Farmaceutici SPA, Semmelweis Egyetem, Cairo University [2015-2019]
- Intracellular crosstalk between ER α / β , EGF and IGF receptors in development and progression of breast cancer – BioCancerTalk, Thales. Investing in knowledge society through the European Social Fund Union, European Social Fund (ESF) & NSRF 2007-2013 [2013-2016]
- Extended self-life biopolymers for sustainable and multifunctional food packaging solutions – NanoBarrier, FP7- NMP-2011-LARGE-5 [2012-2016]

Professional Experience

- Teaching in undergraduate and postgraduate courses (MSc & PhD); Courses: Biochemistry I & Biochemistry II, Clinical Chemistry, Advanced Biochemistry I and II, Molecular Biology & Molecular Biotechnology, Clinical Biochemistry, Analytical Biochemistry, Applications of Biochemistry and Biotechnology (laboratory practice)
- 1990-2002: Lecturer (1990), Assistant Professor (1993), Associate Professor (1999), Department of Chemistry, University of Patras; 2003-present: Professor of Biochemistry & Organic Biochemical Analysis, University of Patras
- 2004-present: Member of the administrative board of the Hellenic Society of Biochemistry & Molecular Biology (HSBMB) as President (2006-2007), General Secretary (2004-2005 & 2011), Vice-President (2008-2011 & 2014-present); 2010-present: Collaborative Faculty Member of the Institute ICE-HT (FORTH), Patras, Greece; 2007-2011: Head of the Department of Chemistry, University of Patras; 2011: European Registered Toxicologist (ERT); 2012-present: Member of the Quality Assurance Unit of the University of Patras (MODIP) and 2014-present president of MODIP; 2014-present: Vice-Rector of Academic & International Affairs
- Coordinator of National and International research grants: Horizon 2020 Marie Skłodowska-Curie Research and Innovation Staff Exchange (RISE) research grants; Research programs co-financed by the European "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF): NSRF 2014-2020 and NSRF2007-2013; K. Karatheodori programs, University of Patras 1998, 2001, 2003, 2004, 2005, 2009, 2011; Heraclitus program 2002, 2011; The Pierre Fabre Fund programs from Pierre Fabre Laboratories 2005-2007, 2007-2008; Research program Biosynexus Inc., Rockville, MD, USA 2002; Research grants PENED 1990, 1991, 1993, 1994, 2001, 2003 from General Secretariat for Research & Technology; Research grant from Research commission, Switzerland 2002
- Repeated funding from FEBS for the organization of competitive international conferences: Advanced Lecture Courses on Matrix Pathobiology, Signaling and Molecular Targets, 2007-present

Useful Links

Departmental & Personal website: www.chem.upatras.gr/faculty/karamanos

List of publications / citations:

[Scholar Google](#) | [ResearchGate](#) | [PubMed](#) | [Publicationslist](#) | [Loop frontiers](#)

[ORCID](#) | [Scopus](#) | [Publons \(researcher ID/Clarivate\)](#) Research Network: www.biotargeting.upatras.gr

Scientific Societies/Board member: www.eebmb.gr, <https://ismb.org> Editorial Board Member and Advisory Editorial

Board Member/Journal sites: <https://www.journals.elsevier.com/matrix-biology-plus/editorial-board>

<https://www.journals.elsevier.com/matrix-biology/editorial-board> www.febsjournal.org

www.plosone.org/static/edboard.action