Zoi Piperigkou
Assistant Professor of Biochemistry and Extracellular Matrix
Department of Chemistry
University of Patras, Greece

CURICULUM VITAE

PERSONAL INFORMATION

Name	Zoi
Surname	Piperigkou
Nationality	Greek
Date of Birth	16-07-1989
Place of birth	Chios, Greece
e-mail	zoipip@upatras.gr
Telephone	+30 2610 997 161 (*office*); +30 6981277945 (*mobile*)

SHORT PRESENTATION/PROFILE

Dr. Zoi Piperigkou is an Assistant Professor of Biochemistry and Extracellular Matrix in Department of Chemistry of the University of Patras. She obtained her Diploma in Chemistry in 2011, her MSc in Applied Biochemistry in 2013 and her PhD in Cellular and Molecular Biology in 2018 from the Department of Chemistry University of Patras. She is Member of the Editorial Boards of 3 international peer-reviewed scientific journals, Guest Editor of 3 Special Issues in with high impact factor and she severs as an Invited Reviewer in more than 10 scientific journals. She has participated in 9 funded European and National research projects. She was Member of the Organizing Committees of 11 National and International scientific conferences and she was the Chairwoman of two international scientific meetings. She has co-authored 60 publications in peer-reviewed international journals and 6 book chapters. Her work has been cited more than 4,000/3,000 times and her h-index is 28 (Google Scholar/Scopus, Sept. 2025). Her research interests are focused on the functional role of extracellular matrix macromolecules in the behavior and progression of solid tumors. Research is focused on the development of advanced 3D *in vitro* cancer cell-derived models mimicking the tumor microenvironment and architecture, mechanisms of cellular signaling and biosynthesis of macromolecules, cytotoxicity studies and the pre-clinical evaluation of potential therapeutic agents and drugs.

CURRENT POSITION

2023-present: **Assistant Professor** of Biochemistry and Extracellular Matrix, Department of Chemistry, University of Patras, Greece

ACADEMIC POSITIONS/MOBILITY

2024-present: **European Registered Toxicologist** (ERT), Federation of European Toxicologists & European Societies of Toxicology
2024-present: **Certified Trainer**, Lifelong Learning Center (K.D.V.M.), Hellenic Open University
2023-present: **Collaborating Faculty Member** with the Institute of Chemical Engineering Sciences of the Foundation for Research and Technology-Hellas (FORTH/ICE-HT)
2021-2023: **Adjunct Lecturer**, Scientific field of Biochemistry, Department of Chemistry, University of Patras
2020-2023: **Postdoctoral researcher** at the FORTH/ICE-HT, Greece

2020: **Adjunct Lecturer** (P.D. 407/1980), Laboratory of Biochemistry, Department of Chemistry, University of Patras
2019-2020: **Postdoctoral researcher**, Department of Chemistry, University of Patras
2019: **Postdoctoral researcher** (FEBS fellow), Laboratory of Biochemistry, Department of Medicine and Surgery, School of Medicine, University of Insubria, Italy
2016-2017: **Visiting researcher** (Marie Skłodowska-Curie Research and Innovation Staff Exchange) in spin-off Serend-IP GmbH, Nanotechnology Center, University of Münster, Germany
2016: **Visiting researcher** (DAAD fellow) in the Department of Medicine, University of Münster and in the University Medical Center, Münster, Germany

EDUCATION

2014-2018: **PhD** Thesis "Evaluation of the regulatory mechanisms governing biomolecules expression, functional properties and morphological characteristics of breast cancer cells", Department of Chemistry, University of Patras, Greece, Grade A
2011-2013: **Master of Science** in Applied Biochemistry: Clinical chemistry, Biotechnology and Evaluation of Pharmaceutical Products, Thesis "The role of heparin and nano-heparin derivatives in functional properties and proteasome activity in breast cancer cells", Department of Chemistry, University of Patras, Greece, Grade A, 9.72/10
2007-2011: **Diploma** in Chemistry, Thesis "Evaluation of EGFR- and IGFR- dependent migration of ERα(+) and ERβ(+) breast cancer cells", University of Patras, Greece, Second highest-ranked among those graduated (top 5%), Grade B, 8.14/10

PUBLICATIONS/METRICS/RECOGNITION

- 60 publications in international peer-reviewed journals
- 6 publications as chapters in book series
- >80 abstracts in proceedings of International and National scientific conferences
- h-index: 28/27 (Google Scholar/Scopus, Sept. 2025); i-index: 41
- Citations >3,980/3,060 (Google Scholar/Scopus, Sept.2025)
- Total Impact Factor (IF) of published papers: 360.29; Average IF per publication: 7.67 (Sept.2025)

LIST OF PUBLICATIONS IN PEER-REVIEWED INTERNATIONAL JOURNALS

1. **Piperigkou Z**, Mangani S, Koletsis NE, Kremmydas S, Karamanos NK. A guide to types, structures and functions of matrix metalloproteinases. *FEBS J*, 2025, In Press
2. **Piperigkou Z***, Mangani S, Koletsis NE, Koutsakis C, Mastronikolis NS, Karamanos NK. Principal mechanisms of extracellular matrix-mediated cell-cell communication in physiological and tumor microenvironments. *FEBS J*, 2025, In Press. doi: 10.1111/febs.70207
3. Kremmydas S, Gourdoupi C, **Piperigkou Z***, Karamanos NK. Targeting EGFR/IGF-IR functional crosstalk in 2D and 3D triple-negative breast cancer models to evaluate tumor progression. *Int J Mol Sci*, 26(17), 8665. doi: 10.3390/ijms26178665. IF: 4.9
4. Koletsis NE, Mangani S, Franchi M, **Piperigkou Z**, Karamanos NK. Development, Functional Characterization, and Matrix Effectors Dynamics in 3D Spheroids of Triple-Negative Breast Cancer Cells. *Cells*, 2025, 14(17): 1351. doi: 10.3390/cells14171351. IF: 5.2
5. Gourdoupi C, Kremmydas S, Mangani S, Ioannou P, Afratis NA, **Piperigkou Z***, Karamanos NK. From structure to function: The impact of EGFR and IGF-IR in 3D breast cancer spheroids. *Cancers*, 2025, 17(16):2606. doi: 10.3390/cancers17162606. IF: 4.4

6. Mangani S, Vetoulas M, Mineschou K, Spanopoulos K, Vivanco MdM, **Piperigkou Z***, Karamanos NK. Design and Applications of Extracellular Matrix Scaffolds in Tissue Engineering and Regeneration. *Cells*, 2025, 14(14): 1076. doi: 10.3390/cells14141076. IF: 5.2
7. Mangani S, Koletsis NE, Koutsakis C, **Piperigkou Z**, Franchi M, Götte M, Karamanos NK. Spheroids as a 3D tumor model to evaluate cell functional properties and key matrix effectors implicated in breast cancer progression. *FEBS J*, 2025, *Under revisions*
8. Franchi M, Masola V, Onisto M, Franchi L, Mangani S, Zolota V, **Piperigkou Z**, Karamanos NK. Ultrastructural changes of the peri-tumoral collagen fibers and fibrils array in different stages of mammary cancer progression. *Cells,* 2025, 14(13): 1037. doi: 10.3390/cells14131037
9. Karamanos NK, **Piperigkou Z**, Gourdoupi C, Mangani S, Vivanco MD. Extracellular matrix matters: matrix-based bioscaffolds in advancing translational cancer research and targeted therapy. *Am J Physiol Cell Physiol,* 2025, 328(6): C1957-C1963. doi: 10.1152/ajpcell.00050.2025.
10. Mangani S[#], **Piperigkou Z**[#], Koletsis NE[#], Ioannou P, Karamanos NK. Estrogen receptors and extracellular matrix: the critical interplay in cancer development and progression. *FEBS J,* 2025, 292(7): 1558-1572. #Equal contribution. doi: 10.1111/febs.17270. IF: 5.62 | **Editor's choice for issue cover illustration**
11. Ioannou P, Tzaferi K, Koutsakis C, **Piperigkou Z***, Karamanos NK. Targeting glypicans through EGFR and JAK/STAT signaling axes drives breast cancer progression. *Proteoglycan Res*, 2024, 2(1): e18. doi: 10.1002/pgr2.18.
12. Stamou C, Gourdoupi C, Dechambenoit P, Papaioannou D, **Piperigkou Z***, Lada Z. Antiproliferative Activity of an Organometallic Sn(IV) Coordination Compound Based on 1-Methylbenzotriazole against Human Cancer Cell Lines. *Chemistry*, 2024, 6(5): 1189-1200. doi: 10.3390/chemistry6050068. IF: 2.4
13. Mastronikolis NS, Delides A, Kyrodimos E, **Piperigkou Z**, Spyropoulou D, Giotakis E, Tsiambas E, Karamanos NK. Insights into metastatic roadmap of head and neck cancer squamous cell carcinoma based on clinical, histopathological and molecular profiles. *Mol Biol Rep,* 2024, 51(1):597. doi: 10.1007/s11033-024-09476-8. IF: 2.32
14. Mastronikolis NS, Kyrodimos E, **Piperigkou Z***, Spyropoulou D, Delides A, Giotakis E, Alexopoulou M, Bakalis NA, Karamanos NK. Matrix-based molecular mechanisms, targeting and diagnostics in oral squamous cell carcinoma. *IUBMB Life*, 2024, 76(7):368-382. doi: 10.1002/iub.2803. IF: 4.71
15. Franchi M, **Piperigkou Z**, Mastronikolis NS, Karamanos NK. Extracellular matrix biomechanical roles and adaptation in health and disease. *FEBS J*, 2024, 291(3):430-440. doi: 10.1111/febs.16938. IF: 5.62
16. Visvini GA, Mathioudakis GN, Soto Beobide A, **Piperigkou Z**, Giannakas AE, Messaritakis S, Sotiriou G, Voyiatzis GA. Improvement of Water Vapor Permeability in Polypropylene Composite Films by the Synergy of Carbon Nanotubes and β-Nucleating Agents. *Polymers*, 2023, 15(22):4432. doi: 10.3390/polym15224432. IF: 5.0
17. Mastronikolis NS, Spyropoulou D, Kyrodimos E, **Piperigkou Z**, Giotakis E, Delides A, Karamanos NK. The interplay between tumor and nodal microenvironments for the formation of nodal premetastatic niche in head and neck cancer. *Am J Physiol Cell Physiol*, 2023, 325(6):C1516-C1531. doi: 10.1152/ajpcell.00337.2023. IF: 5.28
18. **Piperigkou Z**, Bainantzou D, Makri N, Papachristou E, Mantsou A, Papi R, Choli-Papadopoulou T, Theocharis AD, Karamanos NK. Enhancement of mesenchymal stem cells' chondrogenic potential by type II collagen-based bioscaffolds, *Mol Biol Rep*, 2023, 50(6):5125-5135. doi: 10.1007/s11033-023-08461-x. IF: 2.32
19. Mastronikolis NS, Kyrodimos E, Spyropoulou D, Delides A, Giotakis E, **Piperigkou Z**, Karamanos NK. The Role of Exosomes in Epithelial-to-Mesenchymal Transition and Cell Functional Properties in Head and Neck Cancer. *Cancers,* 2023, 5;15(7):2156. doi: 10.3390/cancers15072156. IF: 6.64

20. Kyriakopoulou K[#], Koutsakis C[#], **Piperigkou Z***[#], Karamanos NK. Recreating the extracellular matrix: novel 3D cell culture platforms in cancer research, *FEBS J*, 2023, 290(22):5238-5247, doi: 10.1111/febs.16778. IF: 5.62 #Equal contribution
21. Kokoretsis D, Maniaki EK, Kyriakopoulou K, Koutsakis C, **Piperigkou Z**, Karamanos NK. Hyaluronan as "Agent Smith" in cancer extracellular matrix pathobiology: Regulatory roles in immune response, cancer progression and targeting. *IUBMB Life*, 2022, 74(10):943-954. doi: 10.1002/iub.2608. IF: 4.71
22. Kyriakopoulou K, **Piperigkou Z**, Tzaferi K, Karamanos NK. Trends in extracellular matrix biology, *Mol Biol Rep*, 2023, 50(1), 853-863, doi: 10.1007/s11033-022-07931-y. IF: 2.32
23. Druvari D, Tzoumani I, **Piperigkou Z**, Tzaferi K, Tselentis D, Vlamis-Gradikas A, Karamanos NK, Kallitsis IK. Development of environmentally friendly polymeric coatings based on water-soluble quaternary ammonium biocidal copolymers for application on air-cleaning filters. *ACS Omega,* 2022, doi: 10.1021/acsomega.2c04427. IF: 4.13
24. Papakonstantinou E, **Piperigkou Z**, Karamanos NK, Zolota V. Altered adipokine expression in tumor microenvironment promotes development of triple negative breast cancer. *Cancers*, 2022, 14 (17), 4139. doi: 10.3390/cancers14174139. IF: 6.64
25. **Piperigkou Z**, Koutsandreas A, Franchi M, Zolota V, Kletsas D, Passi AG, Karamanos NK. ESR2: a critical factor of mesenchymal-to-epithelial transition, matrix expression and triple-negative breast cancer tumorigenesis in vivo. *Front Oncol*, 2022, 12, 917633. doi: 10.3389/fonc.2022.917633. IF: 6.24
26. **Piperigkou Z**, Tzaferi K, Makrokanis G, Cheli K, Karamanos NK. The microRNA-cell surface proteoglycan axis in cancer progression. *Am J Physiol Cell Physiol*, 2022, 322(5), C825-C832. doi: 10.1152/ajpcell.00041.2022. IF: 5.28
27. Kyriakopoulou K, Kefali E, **Piperigkou Z**, Riethmüller C, Greve B, Franchi M, Götte M, Karamanos NK. EGFR is a pivotal player of the E2/ERβ-mediated functional properties, aggressiveness, and stemness in triple-negative breast cancer cells. *FEBS J*, 2022, 289(6), 1552-1574. doi: 10.1111/febs.16240. IF: 5.62
28. Lada ZG, Andrikopoulos KS, Mathioudakis GN, **Piperigkou Z**, Karamanos NK, Perlepes SP, Voyiatzis GA. Tuning the Spin-Crossover Behaviour in Fe(II) Polymeric Composites for Food Packaging Applications. *Magnetochemistry*, 2022, 8(2), 16. doi: 10.3390/magnetochemistry8020016. IF: 3.34 | **Feature paper**
29. Vassileiou C, Kalantzi S, Vachlioti E, Athanassopoulos CM, Koutsakis C, **Piperigkou Z**, Karamanos N, Stivarou T, Lymberi P, Avgoustakis K, Papaioannou D. New Analogs of Polyamine Toxins from Spiders and Wasps: Liquid Phase Fragment Synthesis and Evaluation of Antiproliferative Activity. *Molecules*, 2022, 27(2), 447. doi: 10.3390/molecules27020447. IF: 4.93
30. **Piperigkou Z***, Karamanos NK (2021) Matrix Effectors and Cancer. *Cancers*, 2021, 14(1), 200. doi: 10.3390/cancers14010200. IF: 6.64
31. Karamanos NK, Theocharis AD, **Piperigkou Z**, Manou D, Passi A, Skandalis SS, Vynios DH, Orian-Rousseau V, Ricard-Blum S, Schmelzer CEH, Duca L, Durbeej M, Afratis NA, Troeberg L, Franchi M, Masola V, Onisto M. A guide to the composition and functions of the extracellular matrix. *FEBS J*, 2021, 288(24), 6850-6912. doi: 10.1111/febs.15776. IF: 5.62 | **Top 1% of the academic field of Biology & Biochemistry, Web of Science, Top Cited Article by WILEY**
32. Karamanos NK, **Piperigkou Z**, Passi A, Götte M, Rousselle P, Vlodavsky I. Extracellular matrix-based cancer targeting. *Trends Mol Med*, 2021, 27(10), 1000-1013. doi: 10.1016/j.molmed.2021.07.009. IF: 11.95
33. Tavianatou AG, **Piperigkou Z**, Koutsakis C, Barbera C, Beninatto R, Franchi M, Karamanos NK (2021) The action of hyaluronan in functional properties, morphology and expression of matrix effectors in mammary cancer cells depends on its molecular size. *FEBS J*, 2021, 288(14), 4291-4310. doi: 10.1111/febs.15734. IF: 5.62

34. Lepedda AJ, Nieddu G, **Piperigkou Z**, Kyriakopoulou K, Karamanos N, Formato M. Circulating Heparan Sulfate Proteoglycans as Biomarkers in Health and Disease. *Semin Thromb Hemost*, 2021, 47(3), 295-307. doi: 10.1055/s-0041-1725063. IF: 6.40
35. **Piperigkou Z***, Kyriakopoulou K, Koutsakis C, Mastronikolis S, Karamanos NK. Key Matrix Remodeling Enzymes: Functions and Targeting in Cancer. *Cancers*, 2021, 13(6), 1441. doi: 10.3390/cancers13061441. IF: 6.64 | **Editor's choice**
36. Zolota V, Tzelepi V, **Piperigkou Z**, Kourea H, Papakonstantinou E, Argentou MI, Karamanos NK. Epigenetic Alterations in Triple-Negative Breast Cancer-The Critical Role of Extracellular Matrix. *Cancers*, 2021, 13(4):713. doi: 10.3390/cancers13040713. IF: 6.64
37. Rassias G, Leonardi S, Rigopoulou D, Vachlioti E, Afratis K, **Piperigkou Z**, Koutsakis C, Karamanos NK, Gavras H, Papaioannou D. Potent antiproliferative activity of bradykinin B2 receptor selective agonist FR-190997 and analogue structures thereof: A paradox resolved? *Eur J Med Chem*, 2021, 210, 112948. doi: 10.1016/j.ejmech.2020.112948. IF: 7.09
38. Kyriakopoulou K, Riti E, **Piperigkou Z**, Koutroumanou Sarri K, Bassiony H, Franchi M, Karamanos NK. EGFR/ERβ-Mediated Cell Morphology and Invasion Capacity Are Associated with Matrix Culture Substrates in Breast Cancer. *Cells*, 2020, 9(10), 2256. doi: 10.3390/cells9102256. IF: 7.67
39. Franchi M, **Piperigkou Z**, Karamanos KA, Franchi L, Masola V. Extracellular Matrix-Mediated Breast Cancer Cells Morphological Alterations, Invasiveness, and Microvesicles/Exosomes Release. *Cells*, 2020, 9(9), 2031. doi: 10.3390/cells9092031. IF: 7.67
40. **Piperigkou Z***, Karamanos NK. Estrogen receptor-mediated targeting of the extracellular matrix network in cancer. *Semin Cancer Biol*, 2020. 62, 116-124. doi: 10.1016/j.semcancer.2019.07.006. IF: 15.7
41. Franchi M, **Piperigkou Z**, Riti E, Masola V, Onisto M, Karamanos NK. Long filopodia and tunneling nanotubes define new phenotypes of breast cancer cells in 3D cultures. *Matrix Biol Plus*. 6-7, 2020, 100026. doi: 10.1016/j.mbplus.2020.100026. IF: 4.93
42. **Piperigkou Z**, Franchi M, Riethmüller C, Götte M, Karamanos NK. miR-200b restrains EMT and aggressiveness and regulates matrix composition depending on ER status and signaling in mammary cancer. *Matrix Biol Plus*, 2020, 6-7, 100024. doi: 10.1016/j.mbplus.2020.100024. IF 4.93
43. **Piperigkou Z***, Karamanos NK. Dynamic Interplay between miRNAs and the Extracellular Matrix Influences the Tumor Microenvironment. *Trends Biochem Sci*, 2019, 44(12), 1076-1088. doi: 10.1016/j.tibs.2019.06.007. IF: 14.26
44. Tavianatou AG, Caon I, Franchi M, **Piperigkou Z**, Galesso D, Karamanos NK. Hyaluronan: molecular size-dependent signaling and biological functions in inflammation and cancer. *FEBS J*, 2019, 286(15), 2883-2908. doi: 10.1111/febs.14777. IF: 5.62
45. Tavianatou AG, **Piperigkou Z**, Barbera C, Beninatto R, Masola V, Caon I, Onisto M, Franchi M, Galesso D, Karamanos NK. Molecular size-dependent specificity of hyaluronan on functional properties, morphology and matrix composition of mammary cancer cells. *Matrix Biol Plus*, 2019, 3, 100008. doi: 10.1016/j.mbplus.2019.100008. IF: 4.93
46. Franchi M, Masola V, Bellin G, Onisto M, Karamanos KA, **Piperigkou Z**. Collagen Fiber Array of Peritumoral Stroma Influences Epithelial-to-Mesenchymal Transition and Invasive Potential of Mammary Cancer Cells. *J Clin Med*, 2019, 8(2), 213. doi: 10.3390/jcm8020213. IF: 4.96
47. Kyriakopoulou K, Kefali E, **Piperigkou Z**, Bassiony H, Karamanos NK. Advances in targeting epidermal growth factor receptor signaling pathway in mammary cancer. *Cell Signal*, 2018, 51, 99-109. doi: 10.1016/j.cellsig.2018.07.010. IF: 5.71
48. 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. Proteoglycan Chemical Diversity Drives Multifunctional Cell Regulation and Therapeutics. *Chem Rev*, 2018, 118(18), 9152-9232. doi: 10.1021/acs.chemrev.8b00354. IF: 60.62

49. **Piperigkou Z**, Götte M, Theocharis AD, Karamanos NK. Insights into the key roles of epigenetics in matrix macromolecules-associated wound healing. *Adv Drug Deliv Rev*, 2018, 129:16-36. doi: 10.1016/j.addr.2017.10.008. IF: 15.47
50. Afratis NA, Karamanou K, **Piperigkou Z**, Vynios DH, Theocharis AD. The role of heparins and nano-heparins as therapeutic tool in breast cancer. *Glycoconj J*, 2017, 34(3):299-307. doi: 10.1007/s10719-016-9742-7. IF: 3.0
51. **Piperigkou Z**, Franchi M, Götte M, Karamanos NK. Estrogen receptor beta as epigenetic mediator of miR-10b and miR-145 in mammary cancer. *Matrix Biol*, 2017, 64, 94-111. doi: 10.1016/j.matbio.2017.08.002. IF: 11.58 | **Top 2% articles in Developmental Biology, H1 Connect**
52. Karamanou K, Franchi M, **Piperigkou Z**, Perreau C, Maquart FX, Vynios DH, Brézillon S. Lumican effectively regulates the estrogen receptors-associated functional properties of breast cancer cells, expression of matrix effectors and epithelial-to-mesenchymal transition. *Nat Sci Rep*, 2017, 7, 45138. doi: 10.1038/srep45138. IF: 5.0
53. Neagu M, **Piperigkou Z**, Karamanou K, Engin AB, Docea AO, Constantin C, Negrei C, Nikitovic D, Tsatsakis A. Protein bio-corona: critical issue in immune nanotoxicology. *Arch Toxicol*, 2017, 91(3), 1031-1048. doi: 10.1007/s00204-016-1797-5. IF: 5.15
54. **Piperigkou Z**, Bouris P, Onisto M, Franchi M, Kletsas D, Theocharis AD, Karamanos NK. Estrogen receptor beta modulates breast cancer cells functional properties, signaling and expression of matrix molecules. *Matrix Biol*, 2016, 56, 4-23. doi: 10.1016/j.matbio.2016.05.003. IF: 11.58 | **Top 2% articles in Cell Biology, H1 Connect**
55. **Piperigkou Z**, Mohr B, Karamanos N, Götte M. Shed proteoglycans in tumor stroma. *Cell Tissue Res*, 2016, 365(3), 643-55. doi: 10.1007/s00441-016-2452-4. IF: 4.06
56. Magoulas GE, Rigopoulos A, **Piperigkou Z**, Gialeli C, Karamanos NK, Takis PG, Troganis AN, Chrissanthopoulos A, Maroulis G, Papaioannou D. Synthesis and antiproliferative activity of two diastereomeric lignan amides serving as dimeric caffeic acid-l-DOPA hybrids. *Bioorg Chem*, 2016, 66, 132-44. doi: 10.1016/j.bioorg.2016.04.003. IF: 5.31
57. **Piperigkou Z**, Karamanou K, Engin AB, Gialeli C, Docea AO, Vynios DH, Pavão MS, Golokhvast KS, Shtilman MI, Argiris A, Shishatskaya E, Tsatsakis AM. Emerging aspects of nanotoxicology in health and disease: From agriculture and food sector to cancer therapeutics. *Food Chem Toxicol*, 2016, 91:42-57. doi: 10.1016/j.fct.2016.03.003. IF: 5.57
58. **Piperigkou Z**, Karamanou K, Afratis NA, Bouris P, Gialeli C, Belmiro CL, Pavão MS, Vynios DH, Tsatsakis AM. Biochemical and toxicological evaluation of nano-heparins in cell functional properties, proteasome activation and expression of key matrix molecules.*Toxicol Lett*, 2016, 240(1):32-42. doi: 10.1016/j.toxlet.2015.10.005. IF: 4.37
59. Bouris P, Skandalis SS, **Piperigkou Z**, Afratis N, Karamanou K, Aletras AJ, Moustakas A, Theocharis AD, Karamanos NK. Estrogen receptor alpha mediates epithelial to mesenchymal transition, expression of specific matrix effectors and functional properties of breast cancer cells. *Matrix Biol*, 2015, 43, 42-60. doi: 10.1016/j.matbio.2015.02.008. IF: 11.58
60. Tsonis AI, Afratis N, Gialeli C, Ellina MI, **Piperigkou Z**, Skandalis SS, Theocharis AD, Tzanakakis GN, Karamanos NK. Evaluation of the coordinated actions of estrogen receptors with epidermal growth factor receptor and insulin-like growth factor receptor in the expression of cell surface heparan sulfate proteoglycans and cell motility in breast cancer cells. *FEBS J*, 2013, 280(10), 2248-59. doi: 10.1111/febs.12162. IF: 5.62

(*) co-correspondence

BOOK CHAPTERS IN BOOK SERIES

1. **Piperigkou Z** (2025) 3D cell culture systems and different types of matrix bioscaffolds - safety and toxicological issues. In: 3D Cell Culture Systems in Toxicology: Bridging the Gap Between In Vitro and In Vivo. Book Series: The Biology of Extracellular Matrix. Springer Nature.
2. Mangani S, Spanopoulos K, Vetoulas M, Mineschou K, **Piperigkou Z**, Karamanos NK (2025) Biomaterial Platforms for Tissue Engineering: Emphasis on Extracellular Matrix-Based and Mimetic Scaffolds. Book Series: The Biology of Extracellular Matrix Book Series. Springer Nature. In Press
3. **Piperigkou Z**, Theocharis AD, Karamanos NK (2025) A Protocol for Engineering Collagen Type II Bioscaffolds to Support Stem Cell Chondrogenesis. Springer Nature. In Press
4. **Piperigkou Z***, Karamanos NK (2023) Evaluating the effects of microRNAs on proteoglycans and matrix constituents' expression and functional properties. In: Karamanos NK (ed) Methods in Molecular Biology, Proteoglycans: Methods and Protocols. Chapter 19. Springer Nature. doi: 10.1007/978-1-0716-2946-8_19.
5. **Piperigkou Z*,** Manou D, Bainantzou D, Zolota V, Papakonstantinou E, Theocharis AD, Karamanos NK (2022). The microRNA-extracellular matrix interplay in breast cancer. In: Kovalszky I, Franchi M, Alaniz L (eds) The Extracellular Matrix and The Tumor Microenvironment. Springer Nature. doi: 10.1007/978-3-030-99708-3_16
6. **Piperigkou Z**, Manou D, Karamanou K, Theocharis AD (2018) Strategies to Target Matrix Metalloproteinases as Therapeutic Approach in Cancer. In: Cal S, Obaya A (eds) Proteases and Cancer. Methods in Molecular Biology, vol 1731. Humana Press, New York, NY. doi: 10.1007/978-1-4939-7595-2_27
   (*) co-correspondence

EDITORIAL ACTIVITY

2025: **Volume Editor** of the Book "Matrix degrading enzymes" to be published in Springer book series "Biology of Extracellular Matrix".
2025: **Guest Editor** for Nature Scientific Reports in the Collection Cell adhesion
2024: **Associate Editor** for Frontiers in Oncology – Cancer Molecular Targets and Therapeutics
2023: **Editorial Board Member** of BMC Cancer
2023: **Editorial Board Member** of Nature Scientific Reports
2023 : **Guest Editor** in Special Issue: Desiphering the Network of Cell Receptors and Matrix in Health and Disease 2023, Biomolecules, https://www.mdpi.com/si/153670
2022 – present: **Editorial Board Member** of American Journal of Physiology-Cell Physiology
2022 – present: **Review Editor** for Cancer Molecular Targets and Therapeutics of Frontiers in Oncology
2020 – 2021: **Guest Editor** in Topical Collection: Matrix Effectors and Cancer, Cancers
2020: **Guest Editor** in Special Issue Desiphering the Network of Cell Receptors and Matrix in Health and Disease, Biomolecules
2016 – present: **Associate Academic Member** in H1 Connect
2016 – present: **Invited Reviewer** in several international scientific journals, among others: The FEBS Journal, Scientific Reports, AJP Cell, Molecular Biology Reports, Proteoglycan Research, PLOS ONE, Bioengineering, FEBS Open Bio, Food and Chemical Toxicology, International Journal of Biological Sciences

CONFERENCES/COURSES/FORUMS

More than 80 abstracts in proceedings of International and National scientific conferences; 2 invited lectures and 14 selected talks in national and international scientific conferences/forums/meetings.
Most recent Invited Lectures and Selected Talks are presented:

- 74th Annual Conference of the Hellenic Society of Biochemistry and Molecular Biology (HSBMB), Title: The intercellular network of innovative 3D in vitro mimetic models of primary breast cancer tumors, 2024, Thessaloniki, Greece – **Selected Talk**
- 73rd Annual Conference of the HSBMB, Title: The expanding boundaries of ECM remodeling in cancer, 2023, Athens, Greece – **Invited Lecture**
- FEBS Advanced Course (ALC) "Crosstalk between the ECM and Proteases from destruction to regeneration", Title: ECM remodeling in cancer: old and new bioactive players, 2023, Weizmann Institute of Science, Rehovot, Israel – **Invited Lecture**
- 72nd Annual Conference of HSBMB, Title: ERβ guides triple-negative breast cancer cell behavior and tumor growth in vivo, 2022, Patras, Greece – **Selected Talk**
- Matrix Biology Europe 2024, Title: Sulfated hyaluronan's anticancer effect on breast cancer: insights from 3D culture models and in vivo studies, 2024, Lyon, France
- 40 Congresso della Società Italiana per lo Studio del Connettivo (SISC 2024), Title: Peri-tumoral array of collagen fibers and fibrils confine and drive breast cancer cell invasion during tumor development, 2024, Padova, Italy
- 8th FEBS ALC in Matrix Pathobiology, Signaling and Molecular Targets (8th FEBS-MPST), Title: Epigenetics in matrix-related cancer research, 2022, Crete, Greece – **Selected Talk**
- 8th FEBS-MPST, Title: ESR2 drives epithelial-to-mesenchymal transition and tumorigenesis through epigenetic signatures in aggressive breast cancer, 2022, Crete, Greece – Selected Talk (awarded as best oral presentation)
- 70th Annual Conference of the HSBMB, Title: Estrogen receptors inversely regulate miR-200b to stimulate epithelial-to-mesenchymal transition and matrix expression in mammary cancer, 2019, Athens, Greece – **Selected Talk**
- 7th FEBS-MPST, Title: Estrogen receptor beta as epigenetic mediator of miR-10b, miR-200b and miR-145 in mammary cancer, 2019, Porto Heli, Greece – **Selected Talk** (awarded as best oral presentation)
- FEBS 2018 Advanced Course "Extracellular Matrix: Cell Regulation, Epigenetics and Modeling". Title: Estrogen receptors as epigenetic mediators of miR-10b and miR-200b in mammary cancer, 2018, Patras, Greece – **Selected Talk** (awarded as best oral presentation)
- 2nd Matrix Biology Europe, Tile: MicroRNA targeting as a regulatory mechanism of breast cancer cells with different estrogen receptor status, 2016, Athens, Greece – **Selected Talk**

PARTICIPATION IN SCIENTIFIC CONFERENCES/MEETINGS/FORUMS

- 13rd Regional Growth Conference, 12-14 May 2025, University of Patras
- Strategies for Implementing and Optimizing Informatics and AI for Drug Discovery, Genetic Engineering & Biotechnology News, June 2025
- Navigating the AI Revolution: Preparing Researchers for the Future of AI, Clarivate, May 2025
- Development and characterization of beneficial properties of an innovative organic Greek mountain tea beverage through new scientific and technological applications, 30 April 2025, Patras
- 4th Hellenic Biocluster Forum "Emerging Trends in Life Science Innovation, 6-7 March 2025, Megaron, Athens
- 63rd-74th Annual Conference of the HSBMB, 2012-2024
- FEBS Advanced Course "Crosstalk between the ECM and Proteases from destruction to regeneration", 2023
- 3rd, 5th, 7th Young Scientists Forum of the HSBMB, 2013-2022
- 3rd-8th FEBS Advanced Lecture Course on Matrix Pathobiology, Signaling & Molecular Targets, 2011-2022
- Polymer Connect, Polymer Science and Composite Materials Conference, 2021

- FEBS Education Workshop on Molecular Life Sciences, 2018
- FEBS Advanced Lecture Course on Extracellular Matrix: Cell Regulation, Epigenetics & Modeling, 2018
- 1st, 2nd FORTH/ICE-HT Workshop of Graduates and Post-Docs in Chemical Engineering Sciences, 2015, 2016
- 2nd Matrix Biology Europe Conference, 2016
- Internal retreat of the Stem Cell Network, Herne, Germany, 2016
- 1st International Congress of Controlled Release Society, 2015
- Synthetic & Medicinal Chemistry Symposium, Pharmacy Department, University of Patras, 2014
- 1st Scientific Meeting of the Research Network "Osteonet": Osteoarthritis - Challenges and Modern Approaches, 2012
- 2nd Scientific Conference of the Research Network of Biomedical and Biotechnological Applications: Interaction of Cells with Extracellular Network and Biomaterials - Applications in Regenerative Medicine and Tissue Technology, 2010
- 1st Scientific Conference of the Research Network of Biomedical and Biotechnological Applications: Biomedical and Biotechnological Applications with Emphasis on Drug Targeting of Diseases and Applications of Biocompatible Materials in Medicine, 2010

ORGANIZATION OF SCIENTIFIC CONFERENCES/MEETINGS/FORUMS

- 6th, 7th, 8th FEBS Advanced Lecture Course on Matrix Pathobiology, Signaling & Molecular Targets (FEBS-MPST), 2017, 2019, 2022, ***Member*** *of the Organizing Committee*
- 9th Young Scientists Forum of the Hellenic Society of Biochemistry and Molecular Biology (HSBMB), 2022, ***Chairwoman***
- Young Scientists Committees in 6th & 8th FEBS-MPST, 2017 & 2022, ***Member*** *of the Organizing Committee*
- FEBS Education Workshop on Molecular Life Sciences, 2018, ***Chairwoman***
- FEBS Advanced Lecture Course on Extracellular Matrix: Cell Regulation, Epigenetics & Modeling, 2018, ***Member*** *of the Organizing Committee*
- 3rd, 5th, 7th Young Scientists Forum of the HSBMB, 2015, 2017, 2019, ***Member*** *of the Organizing Committee*

MEMBERSHIPS

2025 – present: **Member**, Hellenic Society for the Study of Extracellular Vesicles (HelSEV)
2016 – present: **Council and Executive Committee Member** as elected Early-Career Researcher, International Society for Matrix Biology
2016 – present: **Regular Member**, International Society for Matrix Biology
2016 – present: **Member**, German Society for Matrix Biology
2011 – present: **Regular Member**, Hellenic Society of Biochemistry and Molecular Biology
2011 – present: **Member**, Association of Greek Chemists

TEACHING EXPERIENCE

2023 – present: **Undergraduate courses**: Experimental Biochemistry (lectures and practicals); Enzymology; Food Biochemistry; Biotechnology (lectures and practicals), Department of Chemistry, University of Patras
2023 – present: **Postgraduate courses**: Advanced Biochemistry; Molecular & Cellular Biology – Molecular Biotechnology, Joint MSc Programme: Applied Biochemistry Clinical Chemistry, Biotechnology, Evaluation of Pharmaceutical Products, Department of Chemistry @ UPatras, NCSR Demokritos
2022 – 2023: **Adjunct Lecturer** of the undergraduate courses Enzymology and Biotechnology (lectures and practicals), Department of Chemistry, University of Patras
2021 – 2022: **Adjunct Lecturer** of the undergraduate courses Enzymology and Biotechnology (lectures and practicals), Department of Chemistry, University of Patras

2020: **Adjunct Lecturer** (P.D. 407/1980) of Biochemistry II (lectures and practicals), Department of Chemistry, University of Patras
2012 – 2017: **Tutorials and laboratory assistance** on the undergraduate courses: Biochemistry II; Clinical Chemistry; Biotechnology; Microbiology; Biology; Department of Chemistry, University of Patras

ADMINISTRATIVE EXPERIENCE

2025: **Member** of the Digital Presence and Communication Committee, Department of Chemistry, University of Patras
2025: **Member** of the Implementation & Evaluation Committee for the Open Electronic Procurement Procedure for the "Supply of Laboratory Reagents and Solvents" (No. Dis. 4/25), University of Patras
2024: **Member** of the Evaluation Committee for Postgraduate Student Candidates of Interdepartmental Master Program "Medical Chemistry and Chemical Biology" for the academic year 2024-2025 (69459/27-09-2024), Departments of Chemistry and Medicine, University of Patras
2024: **Member** of Receiving Committee for the financial year 2024 of the Department of Chemistry, University of Patras

SUPERVISION OF PhD, POSTGRADUATE AND UNDERGRADUATE THESES

2025: **Supervisor** of PhD Thesis, Title: Intercellular signaling and epigenetic mechanisms in two-dimensional and three-dimensional cancer cell models, Department of Chemistry, Biochemistry, Biochemical Analysis and Matrix Pathobiology Res. Group, Laboratory of Biochemistry, University of Patras
2025: **Member** of the seven-membered examination committee of 2 awarded PhD Theses, Department of Chemistry, University of Patras
2024-present: **Member** of the three-membered examination committee of 2 PhD Theses, Department of Chemistry & Department of Medicine, University of Patras
2024-2025: **Supervisor** of 1 MSc & 5 BSc Theses, Department of Chemistry, Biochemistry, Biochemical Analysis and Matrix Pathobiology Res. Group, Laboratory of Biochemistry, University of Patras
2024-2025: **Supervisor** of 1 BSc Thesis, Department of Biological Applications & Technology, University of Ioannina, Greece
2023-2024: **Co-supervisor** of 4 MSc and 6 BSc Theses, Department of Chemistry, Biochemistry, Biochemical Analysis and Matrix Pathobiology Res. Group, Laboratory of Biochemistry, University of Patras
2023: **Member** of the seven-membered examination committee of 1 awarded PhD Thesis, Department of Chemistry, University of Patras
2019-2023: **Co-supervisor** of 2 PhD, 6 MSc and 10 BSc Theses as a Post-doctoral researcher under the group's PI, Prof. Nikos Karamanos, Department of Chemistry, Biochemistry, Biochemical Analysis and Matrix Pathobiology Res. Group, Laboratory of Biochemistry, University of Patras
2016-2017: **Co-supervisor** of 2 MSc Theses during secondment period in the Department of Gynaecology and Obstetrics, University of Münster, Germany, PI: Prof. Martin Götte

PRINCIPAL INVESTIGATOR

2024-2025: **Principal Investigator** of the project EXACT - Targeting triple-negative breast cancer by assessing exosome dynamics, funded under the action FEBS Booster Fund 2024 by the Federation of European Biochemical Societies (FEBS)
2023-2025: **Principal Investigator** of the project "MEDICUS" of the University of Patras
2024-2025: **Principal Investigator** of the "Patras Medicine" research team of the University of Patras (Project: Morthe) in the Synthetic Biology competition, iGEM Competition and Grand Jamboree 2024, Paris Convention Centre, organized by the International Genetically Engineered Machine Foundation (iGEM Foundation)

2023-2024: **Principal Investigator** of the "Patras Medicine" research team of the University of Patras (Project: Lethe) in the Synthetic Biology competition, iGEM Competition and Grand Jamboree 2024, Paris Convention Centre, organized by the International Genetically Engineered Machine Foundation (iGEM Foundation) **| Gold medal, Inclusivity award, Top 10 Undergrad, Nominated for Best Therapeutic Project and Best Presentation**

RESEARCH GRANTS

- EXACT – **FEBS Booster Fund 2024** by the Federation of European Biochemical Societies, @Department of Chemistry, University of Patras, *Principal Investigator* (2024-2025)
- MEDICUS – **University of Patras**, *Principal Investigator* (2023-2025)
- CARES – Human ECM-based platform for anti-cancer drug testing, **Marie Skłodowska-Curie Actions** (MSCA), *Partner* (2023-present)
- DIAGONAL – Development and scaled implementation of safe by design tools and guidelines for multicomponent and harn nanomaterials, **Horizon 2020**, @FORTH/ICE-HT, *Researcher* (2021-2023)
- ROOF-BREATH – Development of nano carbon embedded breathable polyolefin films for industrial/construction roofing membranes, **NSRF 2014-2020**, @FORTH/ICE-HT, *Researcher* (2020-2021)
- ArthroMicroPerMed – Nanobiotechnological Injectible Extracellular Matrix (ECM) for cartilage regeneration, personalized therapy and identification of "individual" microbe metabolites involved in joint regeneration, **NSRF 2014-2020**, @Department of Chemistry, University of Patras, *Researcher* (2019-2020)
- VITAD – Advanced Research Activities in Biomedical Technology & Agri-Food, @FORTH/ICE-HT, *Researcher* (2018)
- GLYCANC – Matrix glycans as multifunctional pathogenesis factors and therapeutic targets in cancer, Marie Skłodowska-Curie Research and Innovation Staff Exchange (RISE), **Horizon 2020**, @Serend-IP GmbH and University of Münster, Germany, *Researcher* (2016-2017)
- NanoBarrier – Extended shelf-life biopolymers for sustainable and multifunctional food packaging solutions, **FP7-NMP**, @FORTH/ICE-HT, *Researcher* (2012-2013, 2014-2015)
- BioCancerTalk – Intracellular crosstalk between ERα/β, EGF and IGF receptors in development and progression of breast cancer, **NSRF 2007-2013**, @Department of Chemistry, University of Patras, *Researcher* (2014-2016)
- BioNexGen – Developing the Next Generation of Biocatalysts for Industrial Chemical Synthesis, **FP7-KBBE**, @FORTH/ICE-HT, *Researcher* (2012)

HONORS AND AWARDS

2023: **Professorship** award by the Organizing Committee (Prof. I. Sagi) of the FEBS Advanced Course "Crosstalk between the ECM and Proteases from destruction to regeneration", The Weizmann Institute of Science, Israel

2022: **Young Investigator** award by the International Society for Matrix Biology, 8th FEBS-MPST, for the best oral presentation, Title: ESR2 drives epithelial-to-mesenchymal transition and tumorigenesis through epigenetic signatures in aggressive breast cancer

2022: **FEBS Journal top-cited Paper** award, Title: A guide to the composition and functions of the extracellular matrix

2021**: Editor's choice** article in Cancers, Title: Key matrix remodeling enzymes: functions and targeting in cancer, Piperigkou Z et al. doi: 10.3390/cancers13061441

2021: **Early Career Researcher** award in Chemistry by Greek Chemists Association, 1st International Forum Women+

2020: **Recommended article** in H1 Connect, Top 2% articles in Developmental Biology, Title: Estrogen receptor beta as epigenetic mediator of miR-10b and miR-145 in mammary cancer
2019: **Best oral presentation** award by The FEBS Journal, 7th FEBS-MPST, Title: Estrogen receptor beta as epigenetic mediator of miR-10b, miR-200b and miR-145 in mammary cancer
2018: **Best oral presentation** award by FEBS Letters, FEBS-ECM 2018, Title: Estrogen receptors as epigenetic mediators of miR-10b and miR-200b in mammary cancer
2017: **Best oral presentation** award by Matrix Biology Ireland, 6th FEBS-MPST, Title: MicroRNA targeting as a regulatory mechanism of breast cancer cells with different estrogen receptor status
2017: **Recommended article** in H1 Connect, Top 2% articles in Cellular Biology, Title: Estrogen receptor beta modulates breast cancer cells functional properties, signaling and expression of matrix molecules
2017: **Travel grant** from HSBMB for the 6th FEBS-MPST
2016: **Travel grant** from German Society for Matrix Biology for the 2nd Matrix Biology Europe
2011-2018: **Travel grants** from HSBMB for participating the annual HSBMB conferences
2009: **Excellence** award by the Greek State Scholarships Foundation (IKY)

FELLOWSHIPS

2019: FEBS (Federation of European Biochemical Societies) **short-term post-doctoral** fellowship
2018: FORTH-ICE/HT **postgraduate** fellowship
2017-2018: Greek State Scholarships Foundation **PhD** fellowship
2016: **Short-term Research** Grant by German Academic Exchange Service (DAAD)
2016: **Erasmus+** Exchange Studies internship
2012-2017: **Postgraduate** fellowship for teaching and laboratory assistance by the Department of Chemistry, University of Patras
2012-2013 & 2014-2015: FORTH-ICE/HT **postgraduate** fellowships

COLLABORATION NETWORKS

International Collaborators: University of Bologna, Italy (Prof. M. Franchi); University of Insubria, Italy (Prof. A. Passi, Prof. E. Karousou); University of Padova, Italy (Prof. M. Onisto); University of Münster, Germany (Prof. M. Götte, Prof. B. Greve); CIC bioGUNE, Basque Research and Technology Alliance (BRTA), Spain (Prof. M. Vivanco); The Weizmann Institute of Science, Israel (Prof. I. Sagi); University of Gdansk, Poland (Prof. S. Samsonov); University of Lyon, France (Prof. S. Ricard-Blum, Prof. P. Rouselle); University of Reims, France (Prof. S. Brezillon); University of Oulu, Finland (Prof. V. Izzi);
National Collaborators: National Center of Scientific Research "Demokritos" (Dr. D. Kletsas, Dr. H. Pratsinis, Dr. E. Mavrogonatou); National and Kapodistrian University of Athens (Prof. N. Afratis); University of Patras (Prof. V. Zolota); University of Crete (Prof. G. Tzanakakis, Prof. D. Nikitovic)

USEFUL LINKS

Personal page	www.chem.upatras.gr/piperigkou-zoi
Google Scholar	https://scholar.google.gr/citations?user=11hs3-0AAAAJ&hl=en
Scopus	https://www.scopus.com/authid/detail.uri?authorId=55605590600
PublicationsList	http://publicationslist.org/php/publist.php?u=zoi.piperigkou
ORCID	https://orcid.org/my-orcid?orcid=0000-0002-0472-5389
PubMed	https://www.ncbi.nlm.nih.gov/pubmed/?term=piperigkou
Linkedin	https://www.linkedin.com/in/zoi-piperigkou-30210254/
ResearchGate	https://www.researchgate.net/profile/Zoi_Piperigkou