

*Candidat**Conf. univ. dr. habil. Brîndușa Alina PETRE***Listă de lucrări științifice****I. Listă celor 10 lucrări științifice reprezentative**

1. Lupu, L. M. Gradinaru, M. Balan-Porcarasu, L. Darie-Ion, **B.-A. Petre**, V.-Robert Gradinaru, The hidden power of a novel collagen octapeptide: Unveiling its antioxidant and cofactors releasing capacity from polyurethane based systems, *Reactive and Functional Polymers*, 207, 2025, 106131, <https://doi.org/10.1016/j.reactfunctpolym.2024.106131>;
2. Darie-Ion L, **Petre BA***, An update on multiplexed mass spectrometry- based lysosomal storage disease diagnosis. *Mass Spectrometry Reviews*, (2023),1-15; <https://doi.org/10.1002/mas.21864>;
3. Iavorschi, M.; Lupăescu, A.-V.; Darie-Ion, L.; Indeykina, M.; Hitruc, G.E.; **Petre, B.A***. Cu and Zn Interactions with Peptides Revealed by High-Resolution Mass Spectrometry. *Pharmaceuticals*, (2022), 15, 1096.; <https://doi.org/10.3390/ph15091096>;
4. Maeser S, **Petre BA***, Ion L, Rawer S, Kohlschütter A, Santorelli FM, Simonati A, Schulz A, Przybylski M., Enzymatic diagnosis of neuronal lipofuscinoses in dried blood spots using substrates for concomitant tandem mass spectrometry and fluorimetry. *J Mass Spectrom.*, (2021), 29:e4675; <https://doi.org/10.1002/jms.4675>;
5. L. Darie-Ion, M. Jayathirtha, G. E. Hitruc, M.-M. Zaharia, R. V. Gradinaru, C. C. Darie, A. Pui and **B.A. Petre***, A Proteomic Approach to Identify Zein Proteins upon Eco-Friendly Ultrasound-Based Extraction, *Biomolecules*, (2021), 11, 1838. <https://doi.org/10.3390/biom11121838>;
6. N. N. Condurache, I. Aprodu, L. Grigore-Gurgu, **B. A. Petre**, E. Enachia, G. Râpeanua, G. E. Bahrma, N. Stănciuc, Fluorescence spectroscopy and molecular modeling of anthocyanins binding to bovine lactoferrin peptides, *Food Chemistry*, (2020), 318, 126508; <https://doi.org/10.1016/j.foodchem.2020.126508>;
7. P.A. Postu, L. Ion, G. Drochioiu, B.A. Petre#, and M. O. Glocker#, “Mass Spectrometric Characterization of the Zein Protein Composition in Maize Flour Extracts upon Protein Separation by SDS-PAGE and 2 D Gel Electrophoresis”, *Electrophoresis*, (2019), 40, 2747–2758; <https://doi.org/10.1002/elps.201900108>;
8. Petre* B.A., Ulrich M., Stumbaum M., Bernevic ., Moise A., Döring G., Przybylski M. When is Mass Spectrometry Combined with Affinity Approaches Essential? A Case Study of Tyrosine Nitration in Proteins, *J. Am. Soc. Mass Spectrom.*,(2012), 23(11): 1831-1840; <https://doi.org/10.1007/s13361-012-0461-4>

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9. Tu T., Drăgușanu M., **Petre B.A.**, Rempel D., Przybylski M., Gross M., “Protein-peptide affinity determination using an H/D exchange dilution strategy: Application to antigen-antibody interactions”, *J. Am. Soc. Mass Spectrom.*(2010), 21(10):1660-7; <https://doi.org/10.1016/j.jasms.2010.03.030>;
10. Ulrich*, M., **Petre A***, N. Youhnovski, D. Worlitzsch, M. Schirle, M. Schumm J. Lee, J. Checkel, M. Dinauer, P. Schmid, F. Ratjen, M. Przybylski, G. Döring (2008), Post-translational tyrosine nitration of eosinophil granule toxins mediated by eosinophil peroxidase, *J. Biol. Chem.* 283 (42): 28629-28640; <https://doi.org/10.1074/jbc.M801196200>;

II. Teza de Doctorat

Titlul tezei: *Analytical Development and Biochemical Application of Mass Spectrometry in Combination with Immunoaffinity Methods for Identification and Structural Characterisation of Protein Nitration*

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III. Capitole de carte în edituri internaționale

1. M. Jureschi, A. V. Lupaescu, L. Ion, **B. A. Petre***, and G. Drochioiu Stoichiometry of Heavy Metal Binding to Peptides Involved in Alzheimer’s Disease: Mass Spectrometric Evidence, *Advances in experimental medicine and biology– Springer*,(2019), 401-415; https://doi.org/10.1007/978-3-030-15950-4_23*
2. Ion, Laura, and **Brîndușa Alina Petre***, "Immuno-Affinity Mass Spectrometry: A Novel Approaches with Biomedical Relevance." *Advances in experimental medicine and biology– Springer*, (2019): 377-388. https://doi.org/10.1007/978-3-030-15950-4_21*
3. **Petre*, B.A.** Affinity – mass spectrometry approaches for elucidating structures and interactions of protein – ligand complexes in *Advances in experimental medicine and biology – Springer*, (2014), 806:129-151. https://doi.org/10.1007/978-3-319-06068-2_7*
4. **Petre B. A.**, Drăgușanu M., Przybylski M. (2008), Molecular recognition specificity of anti-3-nitrotyrosine antibodies revealed by affinity- mass spectrometry and immunoanalytical methods in: “*Applications of Mass Spectrometry in Life Sciences*”, Springer - ISBN 978-1-4020-8811-7, page 55-67. https://doi.org/10.1007/978-1-4020-8811-7_4

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5. Vrinceanu N, A.B. **Petre**, Mihaela C, Popovici E, Pui A, Coman D, et al. Zinc Oxide — Linen Fibrous Composites: Morphological, Structural, Chemical, Humidity Adsorptive and Thermal Barrier Attributes. Modern Surface Engineering Treatments. InTech; 2013. <https://doi.org/10.5772/55705>;

**capitole de carte indexate in WOS ca Article, Book Chapters, cu factor de impact*

IV. Lista de lucrări indexate ISI în ordinea cronologică

1. C. Frîncul, A. Ghinet, S. Shova, C.-I. Ciobanu, A. Sorin Nica, **B. A. Petre**, E. Bîcu, D. Belei, Regioselective C-alkylation in a series of functionalized 1,2,3-triazoles: An unexpected preference over O-alkylation. **Journal of Molecular Structure**, 2026, 1355, pp.144999, <https://doi.org/10.1016/j.molstruc.2025.144999>;
2. **Petre, B. A.*** 2026. “Proteomics of Nitrotyrosine: Integrating Mass Spectrometry and Immunodetection in Redox-Driven Pathology.” **Mass Spectrometry Reviews**: e70020. <https://doi.org/10.1002/mas.70020>;
3. Gradinaru, V.R.; Bercea, M.; Gradinaru, L.M.; Puiu, A.; Lupu, A.; **Petre, B.A.** Targeting Injectable Hydrogels: The Role of Diphenylalanine Peptide Derivative in the Gelation Dynamics of Pluronic® F127. **Polymers** 2025, 17, 930. <https://doi.org/10.3390/polym17070930>;
4. A. Lupu, L. M. Gradinaru, M. Balan-Porcarasu, L. Darie-Ion, **B.-A. Petre**, V.-Robert Gradinaru, The hidden power of a novel collagen octapeptide: Unveiling its antioxidant and cofactors releasing capacity from polyurethane based systems, **Reactive and Functional Polymers**, 207, 2025, 106131, <https://doi.org/10.1016/j.reactfunctpolym.2024.106131>;
5. Medjour, A., **Petre, B.A.***, Hammadi, M., Salhi, I., Dbara, M. and Hamidechi, M.A. (2024), Impact of breeding system transition on camel milk caseins. *Int J Dairy Technol*, 77: 813-826. <https://doi.org/10.1111/1471-0307.13075>;
6. L. Grigore-Gurgu, M. Cotârleț, M. Pihurov, B. Păcularu-Burada, A. M. Vasile, E. Enachi, C. L. Chițescu, **B.A. Petre**, L. Dumitrașcu, D. Borda, N. Stănciuc, G.-E. Bahrim, Lactiplantibacillus plantarum and Lactiplantibacillus paraplantarum postbiotics: Assessment of the biotic-derived metabolites with cytocompatibility and antitumoral potential, **Food Bioscience**, (2024), 59, 103863; <https://doi.org/10.1016/j.fbio.2024.103863>
7. Jitaru, S.-C.; Enache, A.-C.; Cojocaru, C.; Drochioiu, G.; **Petre, B.-A.**; Gradinaru, V.-R. Self-Assembly of a Novel Pentapeptide into Hydrogelated Dendritic Architecture: Synthesis, Properties, Molecular Docking and Prospective Applications. **Gels**, (2024), 10, 86; <https://doi.org/10.3390/gels10020086>
8. Jayathirtha, M.; Jayaweera, T.; Whitham, D.; Sullivan, I.; **Petre B.A.***; Darie, C.C.; Neagu, A.-N. Two-Dimensional-PAGE Coupled with nLC-MS/MS-Based Identification of Differentially Expressed

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 10. Jung, J. E., Cárdenas V., **Petre BA***, Epitope identification of a Lys63 linkage ubiquitin antibody by mass spectrometric epitope excision and extraction approaches. *European journal of mass spectrometry*, (2023), 29(5-6), 348358; <https://doi.org/10.1177/14690667231199012>;
 11. Darie-Ion L, **Petre BA***, An update on multiplexed mass spectrometry- based lysosomal storage disease diagnosis. *Mass Spectrometry Reviews*, (2023), 1-15; <https://doi.org/10.1002/mas.21864>;
 12. Glocker, MO; Lupu, LM; **Petre, BA**, „Michael Przybylski (1948-2023) Devoted Half a Century to Mass Spectrometry", *Journal of the American Society for Mass Spectrometry*, 2023, 34(9), 10.1021/jasms.3c00231. (IF-3.2 / Q1); - Perspective article; <https://doi.org/10.1021/jasms.3c00231>;
 13. S. C. Jitaru, A. Neamtu, G. Drochioiu, L. Darie-Ion, I. Stoica, **B.-A. Petre***, V.-R. Gradinaru, A diphenylalanine based pentapeptide with fibrillating self-assembling properties, *Pharmaceutics*, (2023), 15(2), 371; <https://doi.org/10.3390/pharmaceutics15020371>;
 14. Neagu, A.-N.; Jayathirtha, M.; Whitham, D.; Mutsengi, P.; Sullivan, I.; **Petre, B.A.**; Darie, C.C. Proteomics-Based Identification of Dysregulated Proteins in Breast Cancer. *Proteomes* 2022, 10, 35. <https://doi.org/10.3390/proteomes10040035>;
 15. Darie-Ion, L.; Whitham, D.; Jayathirtha, M.; Rai, Y.; Neagu, A.-N.; Darie, C.C.; **Petre, B.A.** Applications of MALDI-MS/MS-Based Proteomics in Biomedical Research, *Molecules*, (2022), 27, 6196; <https://doi.org/10.3390/molecules27196196>;
 16. Iavorschi, M.; Lupăescu, A.-V.; Darie-Ion, L.; Indeykina, M.; Hitruc, G.E.; **Petre, B.A***. Cu and Zn Interactions with Peptides Revealed by High-Resolution Mass Spectrometry. *Pharmaceutics*, (2022), 15, 1096; <https://doi.org/10.3390/ph15091096>;
 17. C. S. Mocanu, L. Darie-Ion, **B. A. Petre**, V. R. Gradinaru, G Drochioiu, A computational study of metal ions interaction with amyloid- β 1–42 peptide structure in hyperpyrexia: Implications for Alzheimer disease, *Journal of King Saud University – Science*, 34 (2022) 102184; <https://doi.org/10.1016/j.jksus.2022.102184>;

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18. A.-N. Neagu, M. Jayathirtha, E. Baxter, M. Donnelly, **B. A. Petre** and C. C. Darie, Applications of Tandem Mass Spectrometry (MS/MS) in Protein Analysis for Biomedical Research, *Molecules*, (2022), 27, 2411.; <https://doi.org/10.3390/molecules27082411>;
19. C. S. Mocanu, **B. A. Petre**, L. Darie Ion, G. Drochioiu, M. Niculaua, I. Stoica, M. Homocianu, L. E. Nita, and V. R. Gradinaru, Structural Characterization of a New Collagen Biomimetic Octapeptide with Nanoscale Self-assembly Potential: Experimental and Theoretical Approaches, *ChemPlusChem*, (2022) 87(2); <https://doi.org/10.1002/cplu.202100462>;
20. Darie-Ion, A. Neamtu, R. Iliescu, **B. A. Petre***, Immuno-Affinity Study of Oxidative Tyrosine Containing Peptides, 2022, *International Journal of Peptide Research and Therapeutics*, (2022), 28:41, <https://doi.org/10.1007/s10989-021-10329-2>;
21. Lupaescu, A.-V., Ion-Darie, L., Petre, B.-A., Ursachi, F., Oroian, M., Proteomic Analysis and Antioxidant Evaluation of Ultrasound-Assisted Pollen Extracts, *Acta Chemica Iasi*, (2022), 30(2), 138–150; <https://doi.org/10.47743/achi-2022-2-0007>;
22. L. Darie-Ion, M. Jayathirtha, G. E. Hitruc, M.-M. Zaharia, R. V. Gradinaru, C. C. Darie, A. Pui and **B.A. Petre***, *A Proteomic Approach to Identify Zein Proteins upon Eco-Friendly Ultrasound-Based Extraction*, *Biomolecules*, (2021), 11, 1838. <https://doi.org/10.3390/biom11121838>;
23. D.-A. Blaj, M. Balan-Porcarasu, **B. A. Petre**, V. Harabagiu, C. Peptu, MALDI mass spectrometry monitoring of cyclodextrin-oligolactide derivatives synthesis, *Polymer*, (2021), 233; <https://doi.org/10.1016/j.polymer.2021.124186>;
24. C. A. Okai, M. Wölter, M. Russ, C. Koy, **B.A. Petre**, W. Rath, U. Pecks, M. O. Glocker, Profiling of intact blood proteins by matrix-assisted laser desorption/ionization mass spectrometry without the need for freezing – Dried serum spots as future clinical tools for patient screening. *Rapid Commun Mass Spectrom.* (2021), 35(14); <https://doi.org/10.1002/rcm.9121>;
25. M. Jayathirtha, E. J. Dupree, Z. Manzoor, B. Larose, Z. Sechrist, A. Neagu, **B.-A. Petre**, C. C. Darie, Mass Spectrometric (MS) Analysis of Proteins and Peptide, *Current Protein & Peptide Science*, (2021), 22(2), 92-120; <https://doi.org/10.2174/1389203721666200726223336>;
26. Maeser S, **Petre BA***, Ion L, Rawer S, Kohlschütter A, Santorelli FM, Simonati A, Schulz A, Przybylski M., Enzymatic diagnosis of neuronal lipofuscinoses in dried blood spots using substrates for concomitant tandem mass spectrometry and fluorimetry. *J Mass Spectrom.*, (2021), 29:e4675; <https://doi.org/10.1002/jms.4675>;
27. Grigore-Gurgu L, Crăciunescu O, Aprodu I, Bolea CA, Iosăgeanu A, **Petre BA**, Bahrim GE, Oancea A, Stănciuc N. Tailoring the Health-Promoting Potential of Protein Hydrolysate Derived from Fish Wastes

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- and Flavonoids from Yellow Onion Skins: From Binding Mechanisms to Microencapsulated Functional Ingredients, *Biomolecules*, (2020), 7;10(10):1416; <https://doi.org/10.3390/biom10101416>;
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29. R. S. Boiangiu, M. Mihasan, L. D. Gorgan, B. A. Stache, **B. A. Petre**, L. Hritcu, Cotinine and 6-hydroxy-L-nicotine reverses memory deficits and reduces oxidative stress in A β 25-35-induced rat model of Alzheimer's disease, *Antioxidants (Basel)*, (2020), 9(8): 768; <https://doi.org/10.3390/antiox9080768>;
30. N. N. Condurache, I. Aprodu, L. Grigore-Gurgu, **B. A. Petre**, E. Enachia, G. Răpeanu, G. E. Bahrima, N. Stănciuc, Fluorescence spectroscopy and molecular modeling of anthocyanins binding to bovine lactoferrin peptides, *Food Chemistry*, (2020), 318, 126508; <https://doi.org/10.1016/j.foodchem.2020.126508>;
31. Habasescu, L., Jureschi, M., **Petre, B. A.**, Mihai, M., Gradinaru, RV., Murariu, M., Drochioiu, G., "Histidine-Lacked A beta(1-16) Peptides: pH-Dependent Conformational Changes in Metal Ion Binding". *Int. J. Peptide Research and Therapeutics*, (2020) 26(4), 2529; <https://doi.org/10.1007/s10989-020-10048-0>;
32. P.A. Postu, L. Ion, G. Drochioiu, **B.A. Petre[#]**, and M. O. Glocker[#], "Mass Spectrometric Characterization of the Zein Protein Composition in Maize Flour Extracts upon Protein Separation by SDS-PAGE and 2 D Gel Electrophoresis", *Electrophoresis*, (2019), 40, 2747–2758; <https://doi.org/10.1002/elps.201900108>;
33. A-V. Lupaescu, I. Humelnicu, **B. A. Petre**, C-I. Ciobanu and G. Drochioiu, "Direct evidence for binding of aluminum to NAP anti-amyloid peptide and its analogs", *Eur. J. Mass Spectrom.*, (2020), 26(2):106-116; <https://doi.org/10.1177/1469066719877714>;
34. Lupaescu, A. V., Ciobanu, C. I., Humelnicu, I., **Petre, B. A.***, Murariu, M., Drochioiu, G., Design and synthesis of new anti-amyloid NAP-based/like peptides. *Rev. Roum. Chim.*, (2019), 64(6), 535-546; <https://doi.org/10.33224/rch/2019.64.6.10>;
35. M. Jureschi, I. Humelnicu, **B.-A. Petre**, C.-I. Ciobanu, M. Murariu, G. Drochioiu, Solid Phase Synthesis of Four Analogs of Amyloid- β (9–16) Peptide: MS and FT-IR Characterization, *Revue Roumaine de Chimie*, (2019), 64(5), 433–443.; <https://doi.org/10.33224/rch.2019.64.5.07>;
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39. Murariu, M., Ion, L., Ciobanu, C.I., **Petre, B.A.** and Drochioiu, G., "MS, CD, and FT-IR characterization of five newly synthesized histidine-containing Ala- and Gly-based peptides", *Rev. Roum. Chim.*, (2017), 62(3), 277-289; <https://revroum.lew.ro/wp-content/uploads/2017/3/Art%2010.pdf>;
40. G. Drochioiu, C. I. Ciobanu, S. Bancila, L. Ion, **B. A. Petre**, C. Andries, R. V. Gradinaru, M. Murariu, "Ultrasound-based protein determination in maize seeds", *Ultrasonics Sonochem.* (2016), 29, 93-103; <https://doi.org/10.1016/j.ultsonch.2015.09.007>
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42. **Petre* B.A.**, Ulrich M., Stumbaum M., Bernevic ., Moise A., Döring G., Przybylski M. When is Mass Spectrometry Combined with Affinity Approaches Essential? A Case Study of Tyrosine Nitration in Proteins, *J. Am. Soc. Mass Spectrom.* (2012), 23(11): 1831-1840; <https://doi.org/10.1007/s13361-012-0461-4>
43. Dragusanu M., **Petre B.A.**, Przybylski M. Epitope motif of an anti-nitrotyrosine antibody specific for nitrotyrosine- modified peptides revealed by affinity-mass spectrometry, *J. Pept. Sci.* (2011), 17(3): 184-191; <https://doi.org/10.1002/psc.1298>
44. Vlad C., Lindner K., Karreman C., Schildknecht S., Leist M., Tomczyk N., Rontree J., Langridge J., Danzer K., Ciossek T., **Petre A.**, Gross M., Hengerer B., Przybylski M. "Autoproteolytic Fragments are Intermediates in the Oligomerization- Aggregation of Parkinson's Disease Protein Alpha-Synuclein as Revealed by Ion Mobility Mass Spectrometry", *ChemBioChem* (2011), 12(18): 2740-4; <https://doi.org/10.1002/cbic.201100569>;
45. Bernevic B., **Petre B.A.**, Galetskiy D., Werner C., Wicke M., Schellander K., Przybylski M., "Degradation and oxidation postmortem of myofibrillar proteins in porcine skeleton muscle revealed by high resolution mass spectrometric proteome analysis", *Int.J. Mass Spectrom.* (2011), 305 (2-3):217-227; <https://doi.org/10.1016/j.ijms.2010.11.010>;

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46. M. Drăgușan, **B.A Petre**, S. Slamnoiu, T. Tu, M. Gross, M. Przybylski “Online bioaffinity–electrospray mass spectrometry for structure identification and quantification of protein-ligand interactions”, *J. Am. Soc. Mass Spectrom.*(2010), 21(10): 1643-8; <https://doi.org/10.1016/j.jasms.2010.06.011>;
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49. Ulrich*, M., **Petre A***, N. Youhnovski, D. Worlitzsch, M. Schirle, M. Schumm J. Lee, J. Checkel, M. Dinauer, P. Schmid, F. Ratjen, M. Przybylski, G. Döring (2008), Post-translational tyrosine nitration of eosinophil granule toxins mediated by eosinophil peroxidase, *J. Biol. Chem.* 283 (42): 28629-28640; <https://doi.org/10.1074/jbc.M801196200>;
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V. Lucrări publicate în extenso în reviste indexate BDI, reviste de specialitate și volumele conferințelor

1. L. Ion, A.-V. Lupaescu, A. Neamtu, G. Drochioiu, **B.A. Petre***, Binding affinities studies of nitrated tyrosine containing peptides to an anti 3-nitro-tyrosine antibody, *Revista de Chimie.* (2020), 71(1): 259-265, <https://revistadechimie.ro/pdf/40%20ION%20L%20I%202020.pdf>;
2. Jureschi, M.; **Petre, B. A***; Ion, L.; Ciobanu, C. I.; Sandu, I.; Drochioiu, G., Synthesis of Different Analogs of A beta((9-16)) Peptide Mass spectrometric evidence for heavy metal binding, *Revista de Chimie*, (2019), 70:9, 3348-3353;

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