

Profile

Study of the proteome and peptidome of biofluids, cellular and tissue extracts for the identification and characterization of potential pathological and prognostic biomarkers through top-down and bottom-up proteomic approaches. Application of advanced mass spectrometry platforms such as HPLC-ESI-IT-MS and nano-RP-HPLC-High Resolution ESI-MS/MS.

Education

Date	Title	Institution
2023	PhD in Life, Environmental and Drug Sciences; biomedical curriculum (XXXV cycle); honors mention and title of Doctor Europaeus	University of Cagliari
2019	Single Course 24 CFU in anthropological-psycho-pedagogical disciplines and teaching methodologies and technologies	University of Cagliari
2018	Master's Degree in Cellular and Molecular Biology (LM-6); grade 110/110 with honors	University of Cagliari
2016	Degree in Biology (L-13); grade 110/110 with honors	University of Cagliari

Professional Experience**Research activities and scientific experiences**

2024-2025: Research fellowship at the Department of Surgical Sciences, University of Cagliari. Title: <i>"Exploitation of multiomic techniques to assess the risk of malignancy in patients with indeterminate thyroid nodules"</i> , Scientific Director Prof. Fabio Medas.
2023: Research scholarship at the Department of Medical Sciences and Public Health, University of Cagliari. Title: <i>"Proteomic study of saliva and plasma of subjects affected by MS with "high activity"</i> , Scientific Director Dr. Lorena Loreface.
2020-2023: Participant in the project <i>"Parkinson's disease: a multidisciplinary approach to identify new potential diagnostic biomarkers"</i> . Coordinator: Prof. Barbara Manconi, University of Cagliari
2021-2022: Erasmus + traineeship PLACEDOC (6 months) at the Mass Spectrometry Center, Department of Chemistry, University of Aveiro, Portugal.
2018: Erasmus + Traineeship (3 months) at the European Synchrotron Radiation Facility (ESRF), Department of Structural Biology, Grenoble, France.

Educational activity

Period	Institution	Position type	SSD
II Semester A.A. 2024-2025	Faculty of Biology and Pharmacy, University of Cagliari	Academic Tutor by contract for the teaching of Applied Biochemistry (MODULE) – integrated course in Biochemistry and Applied Biochemistry, master's degree course in Pharmaceutical Chemistry and Technology.	BIO-10

I Semester A.A. 2024-2025 2023-2024 2022-2023 2021-2022	Faculty of Biology and Pharmacy, University of Cagliari	Academic Tutor by contract for the teaching of Biochemistry and Fundamentals of Molecular Biology, degree course in Toxicological Sciences and Quality Control.	BIO-10
A.A. 2024-2025 2023-2024	Faculty of Medicine and Surgery, University of Cagliari	Contract lecturer of Propaedeutics to Biochemistry, degree course in Sport and Exercise Sciences.	BIO-10
II Semester A.A. 2023-2024 2022-2023 2021-2022	Faculty of Biology and Pharmacy, University of Cagliari	Academic Tutor by contract for the teaching of Applied Biochemistry (module), master's degree course in Cellular and Molecular Biology.	BIO-10
A.A. 2023-2024	Faculty of Medicine and Surgery, University of Cagliari	Contract lecturer of Biochemistry, degree course in Neurophysiopathology Techniques.	BIO-10
I Semester A.A. 2019-2020	Faculty of Biology and Pharmacy, University of Cagliari	Academic Tutor (free) for the teaching of Biochemistry and Applied Biochemistry, master's degree course in Pharmaceutical Chemistry and Technology.	BIO-10
II Semester A.A. 2018-2019	Faculty of Biology and Pharmacy, University of Cagliari	Academic Tutor by contract for the teaching of Plant Morphology and Physiology, degree course in Biology.	BIO-4
II Semester A.A. 2017-2018 2016-2017	Faculty of Biology and Pharmacy, University of Cagliari	Academic Tutor (free) for the teaching of Plant Morphology and Physiology, degree course in Biology.	BIO-4

Other professional activities

From 2019 founder, chairman of the board and legal representative of the innovative start-up Bacfarm srl, Junior Spin Off of the University of Cagliari.
SIB grant- 48 th Congress FEBS, 29 June-3 July 2024, Milan.
FEBS grant- IUBMB-FEBS-PABMB Congress 9-14/07/2022, Lisbon, Portugal.
Young Deserving Award - Travel Grant for participation in the School of Theory and Practice of Proteomics 18-21/02/2020, Italian Association of Proteomics (ItPA) at CEINGE Advanced Biotechnology, Naples.
Italian Association of Proteomic (ItPA) member
European Proteomics Association (EuPA) member
Società Italiana Biochimica e Biologia Molecolare (SIB) member

Publications

PhD Thesis

<i>Salivary Proteome Investigation for Autoimmune Liver Diseases Classification and Biomarker Discovery" (SSD-BIO 10).</i>
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Publications

Cabras, T., Manconi, B., Olianas, A., Sanna, M. T., Contini, C., Guadalupi, G. , Fiorita, A., Calò, L., Paludetti, G., Scarano, E., Tirone, C., Vento, G., Fattore, S., Menzella, N., De Tomaso, D., Iavarone, F., Messina, I., Desiderio, C., Rossetti, D. V., Frascini, M., Fanos, V., Galli, J., Faa, G., Castagnola, M. <i>The characterization of preterm newborn saliva by top-down proteomic as a stimulus for the study of human development. A review of the results obtained over the past 25 years.</i> Journal of Pediatric and Neonatal Individualized Medicine (JPNIM), 2025 (Feb 27), 14(1), e140108. DOI: https://doi.org/10.7363/140108 .
Contini, C., Manconi, B., Olianas, A., Guadalupi, G. , Schirru, A., Zorcolo, L., Castagnola, M., Messina, I., Faa, G., Diaz, G., Cabras, T. <i>Combined High-Throughput Proteomics and Random Forest Machine-Learning Approach Differentiates and Classifies Metabolic, Immune, Signaling and ECM Intra-Tumor Heterogeneity of Colorectal Cancer.</i> Cells, 2024 (Aug 6), 13(16), 1311. DOI: 10.3390/cells13161311.
Cocco, E., Farci, D., Guadalupi, G. , Manconi, B., Maxia, A., Piano, D. <i>The elongation factor 1-alpha as storage reserve and environmental sensor in Nicotiana tabacum L. seeds.</i> Plant science: an international journal of experimental plant biology, 2024 (Aug) 345, 112113. Epub 2024 May 8. DOI: 10.1016/j.plantsci.2024.112113.
Guadalupi, G. , Contini, C., Iavarone, F., Castagnola, M., Messina, I., Faa, G., Onali, S., Chessa, L., Vitorino, R., Amado, F., Diaz, G., Manconi, B., Cabras, T., Olianas, A. <i>Combined Salivary Proteome Profiling and Machine Learning Analysis Provides Insight into Molecular Signature for Autoimmune Liver Diseases Classification.</i> International journal of molecular sciences, 2023 (Jul 30), 24(15), 12207. DOI: 10.3390/ijms241512207.
Olianas, A.†, Guadalupi, G.† , Cabras, T., Contini, C., Serrao, S., Iavarone, F., Castagnola, M., Messina, I., Onali, S., Chessa, L., Diaz, G., Manconi, B. <i>Top-Down Proteomics Detection of Potential Salivary Biomarkers for Autoimmune Liver Diseases Classification.</i> International journal of molecular sciences, 2023 (Jan 4), 24(2), 959. DOI: 10.3390/ijms24020959. †co-first authors
Serrao, S., Contini, C., Guadalupi, G. , Olianas, A., Lai, G., Messina, I., Castagnola, M., Costanzo, G., Firinu, D., Del Giacco, S., Manconi, B., Cabras, T. <i>Salivary Cystatin D Interactome in Patients with Systemic Mastocytosis: An Exploratory Study.</i> International journal of molecular sciences, 2023 (Sep 27), 24(19), 14613. DOI: 10.3390/ijms241914613.
Contini, C., Serrao, S., Manconi, B., Olianas, A., Iavarone, F., Guadalupi, G. , Messina, I., Castagnola, M., Masullo, C., Bizzarro, A., Turck, C. W., Maccarrone, G., Cabras, T. <i>Characterization of Cystatin B Interactome in Saliva from Healthy Elderly and Alzheimer's Disease Patients.</i> Life (Basel), 2023 (Mar 10), 13(3), 748. DOI: 10.3390/life13030748.
Messina, I., Manconi, B., Cabras, T., Boroumand, M., Sanna, M. T., Iavarone, F., Olianas, A., Desiderio, C., Rossetti, D. V., Vincenzoni, F., Contini, C., Guadalupi, G. , Fiorita, A., Faa, G., Castagnola, M. <i>The Post-Translational Modifications of Human Salivary Peptides and Proteins Evidenced by Top-Down Platforms.</i> International journal of molecular sciences, 2023 (Aug 14), 24(16), 12776. DOI: 10.3390/ijms241612776.
Farci D., Guadalupi G. , Bierla K., Lobinski R., Piano D. <i>The role of iron and copper on the oligomerization dynamics of DR_2577, the main S-layer protein of Deinococcus radiodurans.</i> Frontiers in Microbiology, 2019 (Jun 28), 10 (JUN),1450. DOI: 10.3389/fmicb.2019.01450, EISSN: 1664-302X.
Piano D, Cocco E, Guadalupi G , Kalaji HM, Kirkpatrick J, Farci D. <i>Characterization under quasi-native conditions of the capsanthin/capsorubin synthase from Capsicum annuum L.</i> Plant Physiology and Biochemistry, 2019 (Sep 5), 143, 165-175. DOI: 10.1016/j.plaphy.2019.09.007.

Congress and conferences contributions

Speaker at the event "Multiple sclerosis and future perspectives Application of Omics Sciences", Cagliari, 31/05/2023 Scientific Director Lorena Lorefice, Eleonora Cocco, Multiple Sclerosis Center, University of Cagliari, ASL Cagliari.
<i>Extraction and purification of antimicrobial peptides and their adsorption on mesoporous silica nanoparticles.</i> G.M. Meloni, C. Carucci, C. Contini, G. Guadalupi , A. Olianas, A. Salis. Poster, National congress "Chimica sotto l'albero, innovation for a green, health and digital world" 2024 edition, 19-20/12/2024 Bari, Italy.
<i>From precision medicine to gender-based medicine: a proteomic analysis of whole saliva in male and female Multiple Sclerosis patients and healthy controls.</i> L. Lorefice, G. Guadalupi , G. Pisano, G. Fenu, C. Piras, J. Frau, C. Contini, G. Diaz, G. Coghe, B. Manconi, E. Cocco. 54° CONGRESSO SIN ROMA 2024, Rome, Abstracts of the 54th Annual Conference of the Italian Society of Neurology. Neurological Sciences 45 (Suppl 1), S386 (2024). DOI: https://doi.org/10.1007/s10072-024-07787-z .

<p><i>Machine learning for salivary proteome investigation and disease activity exploration in relapsing-remitting multiple sclerosis patients.</i> G. Guadalupi, A. Olianias, T. Cabras, C. Contini, M. Castagnola, I. Messina, L. Loreface, E. Cocco, G. Diaz, B. Manconi. Poster, FEBS OpenBio V. 14 Issue S2 Supplement June 2024, P-28-008. 48th FEBS Congress, mining biochemistry for human health and well-being, 29 June-3 July 2024, Milan, Italy.</p>
<p><i>Top-down proteomics of cerebrospinal fluid to investigate intact neuropeptides and proteins' post-translational modifications in the context of multiple sclerosis.</i> C. Contini, G. Lai, A. Schirru, G. Guadalupi, A. Olianias, B. Manconi, E. Cocco, L. Loreface, T. Cabras. Poster, FEBS OpenBio V. 14 Issue S2 Supplement June 2024, P-03-009. 48th FEBS Congress, mining biochemistry for human health and well-being, 29 Giugno-3 Luglio 2024, Milan, Italy.</p>
<p><i>Proteomic analysis of whole saliva in Multiple Sclerosis: relationships with disease activity in relapsing remitting forms.</i> Loreface L., Maccabeo A., Piras C., Guadalupi G., Frau J., Fenu G., Murgia F., Diaz G., Cocco E., Manconi B. 53° CONGRESSO SIN NAPOLI 2023, Naples, 21-24 October 23. Abstracts of the 53 Annual Conference of the Italian Society of Neurology. Neurological Sciences 44 (Suppl 2), S391–S392 (2023). DOI: https://doi.org/10.1007/s10072-023-07086-z.</p>
<p><i>Characterization of cystatin B interactome in human saliva of subjects affected by Alzheimer's disease.</i> Contini C., Serrao S., Manconi B., Olianias A., Guadalupi G., Iavarone F., Bizzarro A., Messina I., Castagnola M., Masullo C., Maccarrone G., Turck C., Cabras T. Oral presentation, FEBS OpenBio, 12 Supplement 1 July 2022, SH-T-06.2-3, p.31. "The Biochemistry Global Summit"-IUBMB-FEBS-PABMB Congress 9-14/07/2022, Lisbon, Portugal.</p>
<p><i>Bottom-up analysis of salivary proteome from Autoimmune Hepatitis and Primary Biliary Cholangitis patients.</i> G. Guadalupi, A. Olianias, S. Serrao, C. Contini, T. Cabras, F. Iavarone, M. Castagnola, I. Messina, S. Onali, R. Vitorino, L. Chessa, F. Amado, B. Manconi. Poster, FEBS OpenBio V. 12 Supplement 1 July 2022, P-06.2-005, p.322. "The Biochemistry Global Summit"-IUBMB-FEBS-PABMB Congress 9-14/07/2022, Lisbon, Portugal.</p>
<p><i>Bottom-up Proteomics Approach Revealed Significant Variations Of The Cystatin D Interactome In Saliva From Patients Affected By Different Forms Of Mastocytosis.</i> S. Serrao, C. Contini, G. Guadalupi, D. Firinu, A. Olianias, B. Manconi, M. Castagnola, I. Messina, R. Vitorino, S. Del Giacco, F. Amado, T. Cabras. Poster, FEBS OpenBio V. 12 Supplement 1 July 2022, P-06.2-003, p.321. "The Biochemistry Global Summit"-IUBMB-FEBS-PABMB Congress 9-14/07/2022, Lisbon, Portugal.</p>
<p><i>Autoimmune Hepatitis and Primary Biliary Cholangitis: bottom-up analysis of the acidic insoluble fraction of salivary proteome.</i> G. Guadalupi, A. Olianias, S. Serrao, C. Contini, T. Cabras, F. Iavarone, M. Castagnola, I. Messina, S. Onali, L. Chessa, B. Manconi, R. Vitorino, F. Amado. Poster, Proteo Vilamoura Abstract Book II.16. Proteo Vilamoura 2nd Joint Meeting of Spanish, French and Portuguese Proteomics Societies 11-13/05/2022, Vilamoura, Portugal.</p>
<p><i>Comparative salivary proteomics revealed marked changes among adult, elderly and Alzheimer individuals.</i> S. Serrao, C. Contini, G. Cabiddu, G. Guadalupi, A. Olianias, B. Manconi, F. Iavarone, C. Masullo, G. Diaz, M. Castagnola, I. Messina, T. Cabras. Poster, FEBS OpenBio V. 11 Supplement 1, July 2021, P-08.4-25. 45th FEBS Congress 3-8 July 2021, Ljubljana, Slovenia.</p>
<p><i>Altered Cystatins levels in the saliva of subjects affected by Autoimmune Hepatitis and Primary Biliary Cholangitis.</i> G. Guadalupi, A. Olianias, S. Serrao, C. Contini, T. Cabras, F. Iavarone, M. Boroumand, M. Castagnola, I. Messina, S. Onali, G. Diaz, L. Chessa, B. Manconi. Poster, ItPA YOUNG INVESTIGATORS' (VIRTUAL) DAY, 30 April 2021</p>
<p><i>Characterization of novel human Cystatin B salivary interactome in Alzheimer's Disease, Dementia with Lewy Bodies and healthy subjects.</i> Contini C., Serrao S., Manconi B., Olianias A., Guadalupi G., Defazio G., Fadda L., Masullo C., Iavarone F., Messina I., Castagnola M., Maccarrone G., Turck C., Cabras T. Oral presentation, ItPA YOUNG INVESTIGATORS' (VIRTUAL) DAY, 30 April 2021. (Awarded among the 10 best oral presentations)</p>