Curriculum Vitae - Pietro Luigi Mauri

MS in Food Science and Technologies (University of Milan) – July, 1985
1985 – 1988 Fellowship at University of Milan
1989 – 2001 Researcher at Institute of Advanced Technologies ITBA-CNR
1997-1998 Master on Management of Technology- University of Milan
2001 - 2010 Senior Researcher at Institute for Biomedical Technologies (ITB-CNR)
2010- Present Director of Research at ITB-CNR.

Appointments

From 1995 - Group leader of the Analytic Biochemistry Division at ITB-CNR
From 1999 – Group leader of the Proteomic Division at ITB-CNR
From 2004 – PI of Proteomic and Metabolomic Lab at ITB-CNR
From 2005 – Coordinator of three research units situated at three different CNR Institutes that, together, form the "Proteomics and Metabolomics" group of the Molecular Design Department.
From 1997 to 2001: taken part in the Working Group on HbA1c Standardization – Network Reference Laboratories, as an expert in LC-ESI/MS.
From 2004 to 2010: Member of the Board of Councilors of the International Society for Neutron Capture Therapy (ISNCT)", an antitumoral therapy characterized by multidisciplinary research activities (Physics, Chemistry, Biochemistry, Radiology, Medicine, Biology).
Principal Investigator in an Italy-Israel (I. Wiezmann) project on cancer. - 2006-2009
Scientific coordinator of a number of projects involving proteomic investigations using MudPIT approach.
From 2010- to present: Subject Area -Proteomics- Editor of "The International Journal of Biological Markers"
From 2010 to present Chief of Clinical Proteomics Laboratory at Institute of Technologies for Biomedicine (ITB-CNR).
From 2010- to present: Subject Area -Proteomics- Editor of "The International Journal of Biological Markers"
From 2019 Editorial Board Member of Proteomes
From 2011 to 2015 Coordinator of "omics platform project, P06" at Department of Molecular Design (CNR)
From 2012 to present Chief of Proteomics and Metabolomics Laboratory
From 2019 to present Associated Researcher at "Scuola Studi Superiori Sant'Anna" in Pisa
Abilitation ad Full Professore 05/E1 (Biomemistry & Clinical Biochemistry) and 05/F1 (Applied Biology).
From 2020 leading Italian Proteomics Community in ELIXIR Infrastructure and PI of Proteomics activities for Elixir NextGenIT PNRR infrastructure project
Since 2022 Co-founder of ProteomiX, a discussion group on Proteomics, 21 meetings were organized.
Co-founder of Prometeo (https://dsb.cnr.it/Home), a CNR Proteomics Network, involving 7 CNR laboratories distributed throughout the Italian regions.
Member of ITB-CNR Internal Advisory Board (Consiglio di Istituto)
From 2021 Reviewer of industrial projects in the context of grants "FONDO PER LA CRESCITA SOSTENIBILE" by MISE.

Dr. Mauri has a notable experience in the development and application of several technologies (HPLC, capillary electrophoresis, mass spectrometry) for the identification and quantification of several biomolecules in complex matrices. He has been involved in the study of the bioavailabily of several drugs in humans and animals.

He has set-up a proteomics laboratory based on gel- and label-free approaches, including computational tools proteomics-based, for characterizing biomarkers and related pathways, useful to make diagnosis and predict the effect of therapy (Responder vs Non Responders). In particular, he is among the first Italian researchers to use the MudPIT proteomics methodology (2DC-MS/MS) and a parallel computing system for proteomics. This system allows for the proteomic profiling of biological samples, without limitations, according to to protein molecular weight, pI or hydrophobicity and guarantees high productivity. In addition, home-made softwares were developed for proteomics analysis, (Methods Enzymol. 2008; J Clin Bioinforma. 2013).
This label- and gel-free methodology was applied to develop a clinical proteomics approach to investigate a wide range of diseases and samples (mainly human), such as secreted proteins from tumor (FASEB 2005), paraffined biopsies (Imm. Lett. 2014) and immune system cells (JEM 2011; Immunity, 2016; Cell Metabolism 2021). Furthermore, direct analysis of biological samples (JMS 2007; Nat Comm, 2014; Blood 2012), enzymatic complexes (Biochimie 2006), development of novel methodological approaches for structural and enzymayic mechanism studying switch-redox proteins (JBC 2005 and 2006, JMB 2006), and structural and functional characterization of proteins (Biol. Chem. 2004; FEBS 2006) have been performed.
Of note, his proteomic approach allowed him to obtain important results, such as the central regulator role of titin for the lymphocyte trafficking (Toffali et al., Cell Report, 2023), the protective effect of caloric restriction on infections (Palma et al., Cell Metabolism, 2021), the discovery that human catecholaminergic substantia nigra and locus coeruleus neurons express MHC-I, and that this molecule is inducible in human stem cell-derived dopamine (DA) neurons (Cebrian et al., Nat Comm. 2014) and yje UV-C-related disruption of disulphide bonds occurs within the S2 domain rather than the RBD, possibly impairing the protein's dynamic, which in turn, may affect the virus ability to enter host cells (Strizzi et al., Pharmacol Res. 2023).
In addition, he introduced the application of Systems Biology and QGIS for proteomics data and developed a number of computational tools, scuh as MapRoma platform, based on DAve and DCI algorithms, and Proteme Recovery Index.
The developed proteomic approaches allowed him the integration of **Translational Research**, focused on discovery of biomarkers useful for diagnosis, phenotyping and therapy monitoring, and **Fundamental Research,** involving the Elucidation of molecular mechanisms (endotypes) related to diseases and its therapies. Altogether this is making Personalized/Precision Medicine feasible.
He coordinates a clinical proteomics group including 6 researchers, 2 technicians, 5 post-docs and 2 students; he collaborates with a number of hospitals (e.i. Besta, Istituto Tumori, Humanitas, et al.) and pharmaceutical companies (e.i. Novartis, Rotthapharm Biotech, Astra-Zeneca, et al.) as proteomic PI on clinical trials, such as recent two trials on Boron Neutron Capture Therapy, leaded by Japanese National Cancer Center – Tokyo and University of Nagasaki. he was thesis supervisor for more than 50 students (including graduate, master and PhD students) and 30 research fellow; he coordinated a lot of scientific projects concerning natural bioactive compounds and clinical proteomics.
He is co-author of more than 200 scientific manuscripts and 11 Chapters in Books, he has participated in numerous international congresses, including as invited speaker, and university seminars.

https://scholar.google.it/citations?user=vyt0uMUAAAAJ&hl=it&oi=ao
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List of publications by Pier Luigi Mauri – 2020-2024

1. Riccio AM, Mauri P, De Ferrari L, Rossi R, Di Silvestre D, Bartezaghi M, Saccheri F, Canonica GW; PROXIMA sub-study centers. Plasma Galectin-3 and urine proteomics predict FEV1 improvement in omalizumab-treated patients with severe allergic asthma: Results from the PROXIMA sub-study. World Allergy Organ J. 2020 Jan 24;13(1):100095. doi: 10.1016/j.waojou.2019.100095. eCollection 2020 Jan. PMID: 32015785.
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3. Milano G, Biemmi V, Lazzarini E, Balbi C, Ciullo A, Bolis S, Ameri P, Di Silvestre D, Mauri P, Barile L, Vassalli G. Intravenous administration of cardiac progenitor cell-derived exosomes protects against doxorubicin/trastuzumab-induced cardiac toxicity. Cardiovasc Res. 2020 Feb 1;116(2):383-392. doi: 10.1093/cvr/cvz108. PMID: 31098627
4. Azzalin A, Brambilla F, Arbustini E, Basello K, Speciani A, Mauri P, Bezzi P, Magrassi L. A New Pathway Promotes Adaptation of Human Glioblastoma Cells to Glucose Starvation.Cells. 2020 May 18;9(5):E1249. doi: 10.3390/cells9051249. PMID: 32443613
5. Andrea Farini, Chiara Villa, Dario Di Silvestre, Pamela Bella, Luana Tripodi, Rossana Rossi, Clementina Sitzia, Stefano Gatti, Pierluigi Mauri and Yvan Torrente1*TX3 Predicts Myocardial Damage and Fibrosis in Duchenne Muscular Dystrophy Front. Physiol., 19 May 2020 | https://doi.org/10.3389/fphys.2020.00403
6. Motta S, Vecchietti D, Martorana AM, Brunetti P, Bertoni G, Polissi A, Mauri P, Di Silvestre D. The Landscape of Pseudomonas aeruginosa Membrane-Associated Proteins. Cells. 2020 Nov 5;9(11):2421. doi: 10.3390/cells9112421. PMID: 33167383.
7. Vacchi E, Burrello J, Di Silvestre D, Burrello A, Bolis S, Mauri P, Vassalli G, Cereda CW, Farina C, Barile L, Kaelin-Lang A, Melli G. Immune profiling of plasma-derived extracellular vesicles identifies Parkinson disease.Neurol Neuroimmunol Neuroinflamm. 2020 Aug 12;7(6):e866. doi: 10.1212/NXI.0000000000000866. Print 2020 Nov. PMID: 32817412
8. De Palma A, Fanelli G, Cretella E, De Luca V, Palladino RA, Panzeri V, Roffia V, Saliola M, Mauri P*, Filetici P. Gcn5p and Ubp8p Affect Protein Ubiquitylation and Cell Proliferation by Altering the Fermentative/Respiratory Flux Balance in Saccharomyces cerevisiae. mBio. 2020 Aug 11;11(4):e01504-20. doi: 10.1128/mBio.01504-20. PMID: 32788380.
9. Bari E, Di Silvestre D, Mastracci L, Grillo F, Grisoli P, Marrubini G, Nardini M, Mastrogiacomo M, Sorlini M, Rossi R, Torre ML, Mauri P, Sesana G, Perteghella S. GMP-compliant sponge-like dressing containing MSC lyo-secretome: Proteomic network of healing in a murine wound model.Eur J Pharm Biopharm. 2020

Oct;155:37-48. doi: 10.1016/j.ejpb.2020.08.003. Epub 2020 Aug 9. PMID: 32784044.

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