Santosh **Bhosale**

Postdoctoral Researcher

University of Southern Denmark, Odense, Denmark

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I do mass spectrometry based proteomics research, including discovery and validation of protein biomarkers in clinical samples. Collaborations with clinicians, mass spectrometry experts and bioinformaticians.

Research Proficiency

Wet lab

Cell culture work, animal handling and clinical samples, Cell & tissue sample lysis, SDS-PAGE electrophoresis (1D, 2D) and western blotting

Proteomics

Trypsin digestion, immunodepletion of serum &/or plasma samples, label free quantification, isobaric labeling, off-line high pH fractionation, PTMs enrichment and immunoprecipitation experiments

Mass spectrometry

Operation and troubleshooting of a range of instruments LTQ Orbitrap Velos Pro, Q Exactive series, Orbitrap Exploris 480 Mass Spectrometer, TSQ Vantage (all from Thermo Scientific), timsTOF Pro (BRUKER), MALDI-TOF-MS (Applied Biosystem), SYNAPT HDMS (Waters), API QSTAR Pulsar (AB SCIEX)

Mass spectrometry informatics tools

Xcalibur, Proteome Discoverer (Thermo Scientific), Bruker timsControl and Compass HyStar 5.1, MaxQuant and Perseus, Progenesis, Skyline, InfernoRDN, FragPipe and Spectronaut (Biognosys), DIA-NN

Chromatography instrumentation

Easy nLC series (Thermo Scientific)

Language and softwares

R, Python (Basics), Machine learning (Basics), Jupyter enviornment, Cytoscape and Ingenuity Pathway Analysis

Employment

Postdoctoral Researcher

Odense - Denmark

Protein Research Group, Department of Biochemistry and Molecular Biology, University of Southern Denmark — *January 2020 –> Present*

- Development of a post-translational modification (Cysteine, N-linked glycosylated and phospho modified) specific biomarkers discovery platform
- Analysis of PTMomics data to identify candidate plasma biomarkers to stratify ovarian cancer patients

Postdoctoral Researcher

Turku - Finland

University of Turku - Turku Bioscience — *November 2018 –> December 2019*

- Analyzed temporal serum proteomes of celiac disease (CD) developing children
- Conducted the interactomics measurements and data analysis for serveral trasnscription factors of T cells

Project Assistant

Pune - India

National Chemical Laboratory — *November 2009 –> December 2011*

- Proteomics laboratory work including protein extraction, digestion and cleanup, SDS-PAGE, MS analysis of glycated proteins, oligonulceotides and small molecules

Lecturer

Pune - India

JSPMs JSCOPR affiliated to University of Pune — *July 2008 –> November 2009*

- Taught theory and practicals for pharmaceutical biochemistry and pharmaceutical analysis to the bachelor of pharmacy students
- Supervised undergraduate pharmacy students
- Graded course assignments and examinations

Education

PhD — *Turku - Finland*

University of Turku (Turku Bioscience) — *2012 –> 2018*

- Developed quantitative proteomics methodology for the analysis of human serum samples, including immunoaffinity depletion, protein digestion, isobaric labelling, label free quantification, offline-SCX fractionation, LC-MS/MS and data analysis
- Developed targeted SRM-LC-MS methods to monitor multiple protein targets
- Cellular proteomic analyses of Th17 and iTreg cells from mouse and human
- Teaching experience in proteomics data analysis (presented at a national meeting, 2017)

Master of Pharmacy (Pharmaceutical Chemistry) — *Jodhpur - India*

Rajasthan University of Health Sciences (Lachoo Memorial College of Science & Technology) — *2005 –> 2008*

Bachelor of Pharmacy — *Shirur - Pune*

University of Pune (Sitabai Thite College of Pharmacy) — *2001 –> 2005*

Awards

Doctoral dissertation award — *Turku - Finland*

Awarded with EUR 5000 from Orion Pharma — *2018*

Doctoral dissertation award — *Turku - Finland*

Awarded with EUR 5000 from The Maud Kuistila Memorial Foundation — *2018*

Travel grant — *Turku - Finland*

Awarded with EUR 500 to attend computational proteomics course at ETH Zurich from Turku centre for system biology — *2015*

Research grant — *Turku - Finland*

Awarded with EUR 3500 from Hospital District of Southwest Finland & Turku City — *2014*

Dr. Ashok B. Vaidya prize — *Mumbai - India*

Secured first position in an oral session (6 minute competition) organized by South Asian Chapter of American College of Clinical Pharmacology — *2009*

Publications

HDL proteome remodeling associates with COVID-19 severity — *J Clin Lipidol*

Souza Junior DR, Silva ARM, Rosa-Fernandes L, Reis LR, Alexandria G, Bhosale SD, Ghilardi FR, Dalçóquio TF, Bertolin AJ, Nicolau JC, Marinho CRF, Wrenger C, Larsen MR, Siciliano RF, Di Mascio P, Palmisano G, Ronsein GE — *2021*

Interactome Networks of FOSL1 and FOSL2 in Human Th17 Cells — *ACS Omega*

Shetty A, Bhosale SD, Tripathi SK, Buchacher T, Biradar R, Rasool O, Moulder R, Galande S, Lahesmaa R — *2021*

CIP2A Constrains Th17 Differentiation by Modulating STAT3 Signaling — *iScience*

Khan MM, Ullah U, Khan MH, Kong L, Moulder R, Välikangas T, Bhosale SD, Komsi E, Rasool O, Chen Z, Elo LL, Westermarck J, Lahesmaa R — *2020*

Protein interactome of the Cancerous Inhibitor of protein phosphatase 2A (CIP2A) in Th17 cells — *Current Research in Immunology*

Khan MM, Välikangas T, Khan MH, Moulder R, Ullah U, Bhosale SD, Komsi E, Butt U, Qiao X, Westermarck J, Elo LL & Lahesmaa R — *2020*

Quantitative Proteomics Reveals the Dynamic Protein Landscape during Initiation of Human Th17 Cell Polarization — *iScience*

Tripathi SK, Välikangas T, Shetty A, Khan MM, Moulder R, Bhosale SD, Komsi E, Salo V, De Albuquerque RS, Rasool O, Galande S, Elo LL, Lahesmaa R — *2019*

Serum Proteomic Profiling to Identify Biomarkers of Premature Carotid Atherosclerosis — *Sci Rep*

Bhosale SD, Moulder R, Venäläinen MS, Koskinen JS, Pitkänen N, Juonala M, Kähönen M, Lehtimäki T, Viikari J, Elo LL, Goodlett DR, Lahesmaa R, Raitakari OT — *2018*

Quantitative proteomic characterization and comparison of T helper 17 and induced regulatory T cells — *PLos Biol*

Mohammad I, Nousiainen K, Bhosale SD, Starskaia I, Moulder R, Rokka A, Cheng F, Mohanasundaram P, Eriksson JE, Goodlett DR, Lähdesmäki H, Chen Z — *2018*

Analysis of the plasma proteome using iTRAQ and TMT-based Isobaric labeling — *Mass Spectrom Rev*

Moulder R, Bhosale SD, Goodlett DR, Lahesmaa R — *2018*

Mass Spectrometry-Based Serum Proteomics for Biomarker Discovery and Validation — *Methods Mol Biol*

Bhosale SD, Moulder R, Kouvonen P, Lahesmaa R, Goodlett DR — *2017*

The progress and potential of proteomic biomarkers for type 1 diabetes in children — *Expert Rev Proteomics*

Moulder R, Bhosale SD, Lahesmaa R, Goodlett DR — *2017*

Serum proteomes distinguish children developing type 1 diabetes in a cohort with HLA-conferred susceptibility — *Diabetes*

Moulder R, Bhosale SD, Erkkilä T, Laajala E, Salmi J, Nguyen EV, Kallionpää H, Mykkänen J, Vähä-Mäkilä M, Hyöty H, Veijola R, Ilonen J, Simell T, Toppari J, Knip M, Goodlett DR, Lähdesmäki H, Simell O, Lahesmaa R — *2015*

Proteome wide reduction in AGE modification in streptozotocin induced diabetic mice by hydralazine mediated transglycation — *Sci Rep*

Kesavan SK, Bhat S, Golegaonkar SB, Jagadeeshaprasad MG, Deshmukh AB, Patil HS, Bhosale SD, Shaikh ML, Thulasiram HV, Boppana R, Kulkarni MJ — *2013*

Zoom-ln A targeted database search for identification of glycation modifications analyzed by untargeted tandem mass spectrometry — *Eur J Mass Spectrom (Chichester)*

Bhonsle HS, Korwar AM, Kesavan SK, Bhosale SD, Bansode SB, Kulkarni MJ — *2012*

Comparative and chemical proteomic approaches reveal gatifloxacin deregulates enzymes involved in glucose metabolism — *J Toxicol Sci*

Suresh KK, Bhosale SD, Thulasiram HV, Kulkarni MJ — *2011*

Patent Applications

Means and methods for determining risk of type-1 diabetes by serum protein biomarkers — *Europe & USA*

Moulder R, Bhosale SD, Goodlett D, Lähdesmäki H, Simell S, Lahesmaa R

References

Riitta Lahesmaa, M.D., Ph. D. — *rilahes@utu.fi*

Academy Professor, Turku Bioscience, P.O. Box 123 Biocity, FIN-20520, Turku, Finland

Robert Moulder, Ph.D. — *robmou@utu.fi*

Senior Scientist, Turku Bioscience, P.O. Box 123 Biocity, FIN-20520, Turku, Finland

David R. Goodlett, Ph.D. — *goodlett@uvic.ca*

Professor of Biochemistry & Microbiology and Director Genome BC Proteome Centre at University of Victoria, Victoria, British Columbia, Canada

Martin R. Larsen, Ph.D. — *mrl@bmb.sdu.dk*

Professor, Department of Biochemistry and Molecular Biology, Campusvej 55, Odense M 5230, Denmark

Mahesh J. Kulkarni, Ph.D. — *mj.kulkarni@ncl.res.in*

Principal Scientist, Biochemical Sciences Division, CSIR-National Chemical Laboratory, Pune, India