

Balaji Srinivasan

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Current position

Postdoctoral researcher at the Max Planck Institute for Biology of Ageing, Cologne – Germany.

Professional experience

2017 – until now : Postdoctoral researcher, MPI for Biology of Ageing,
Cologne, Germany.
2016 – 2017 : Postdoctoral researcher, NNF Center for Protein Research
University of Copenhagen, Denmark.
2009 – 2015 : PhD student in Medical Sciences,
University of Groningen, The Netherlands.
2007 – 2009 : Top Masters in Medical and Pharmaceutical Drug Innovation – CUM LAUDE,
University of Groningen, The Netherlands.
2007 : Professional Diploma in Clinical Research (PDCR),
Catalyst Clinical Services, New Delhi, India.
2002 – 2006 : Bachelor of Pharmacy (B.Pharm),
Delhi Institute of Pharmaceutical Science & Research, India.

Core Technical Skills

- Proficient in biochemical techniques and evaluations, including SDS-PAGE gel electrophoresis and western blot analysis, immunoprecipitation, affinity probe based enrichment and ELISA.
- Proficient in molecular biology and cell biology techniques ranging from real-time PCR, cloning, DNA electrophoresis, primary/immortalized aseptic cell culture methods and CRISPR-Cas9 genome editing and cell line validation.
- Proficient in both quantitative and qualitative metabolite and small molecule analysis using Ultra/High Performance Liquid Chromatography coupled to UV-Visible/Fluorescence detection and Liquid Chromatography coupled to Mass Spectrometry instrument.
- Proficient in deep proteome and protein post-translational modification studies including label-free, SILAC, TMT sample preparations, instrument handling ranging from Q-Exactive Orbitrap and Q-TOF instruments, mass-spec data analysis, enrichment profiling, omics integration and R-based data processings and visualizations.
- Proficient in drug screening using biochemical and high-content image based analysis, using high-throughput microscopes ranging from Incucyte, Evos, ImageExpress MD and diverse plate readers.
- Proficient in conducting pharmacological evaluation of small molecules and drugs including target identification, toxicity testing and dosage profiling.
- Trained in the characterization, designing experimental strategies and evaluation of *in-vivo* model systems including mice, *D.melanogaster* and *C.elegans*.

Research Experience

Postdoctoral research (2017 – Until now): Deciphering the in-depth molecular mechanisms regulating the ageing processes with focus on protein quality control and integrated stress response. To identify novel longevity pathways and life-span extending drug molecules using high-throughput high-content screening pipeline combined with chemoproteomics and other biochemical assays.

Supervision: Director. Prof. Dr. Adam Antebi, MPI for Biology of Ageing, Cologne, Germany.

Postdoctoral research (2016 – 2017): Investigating the global acetylome and deep proteome profile under the control of CBP/p300 acetyltransferase.

Supervision: Prof. Dr. Chunaram Choudhary & Assoc. Prof. Dr. Brian Weinert, Department of Proteomics, NNF Center for Protein Research, University of Copenhagen, Denmark.

PhD project (2009 - 2015): 'Rerouting Coenzyme A Biosynthesis'.

To understand the role of Coenzyme A (CoA) and its biosynthesis pathway in cellular physiology and to identify possible alternative source. In-addition, I and other researchers in collaboration with Acies-Bio, developed novel potential therapeutic molecules for CoA related diseases and acquired several patents. Supervision: Prof. Dr. O.C.M. Sibon & Prof. Dr. D.J. Reijngoud, University of Groningen, The Netherlands.

Masters Research Projects:

- 2008 – 2009: Supervisor – Prof. Rainer Bischoff, Analytical Biochemistry department, University of Groningen, The Netherlands.
 1. 'Biomarker discovery in Multiple sclerosis using ChipLC-QTOF' (in collaboration with Solvay Pharmaceuticals)
 2. 'Establishing microdialysis technique in combination with ChipLC-QTOF for proteome profiling' (in collaboration with Brains On-Line, The Netherlands)
- 2007 – 2008: Supervisor – Prof. Dr. O.C.M. Sibon, Department of Cell Biology, University of Groningen, The Netherlands. 'Effect of pantothenate kinase depletion on Coenzyme A levels and protein acetylation - Research towards understanding Pantothenate Kinase Associated Neurodegeneration'.

Additional Courses and skills

- EMBL course: Exploratory Analysis of Biological Data: Data Carpentry (using R and Openrefine)
- MaxQuant summer school for proteome quantification and data analysis
- Bioinformatics course covering basic R-scripting, automated data analysis for omics and cytoscape
- EMBL course: Target engagement in biology and drug discovery
- Biovoxxel course: Editing, Processing and Analysis of Scientific Images
- EPFL course: Image processing and analysis for life scientists
- Certified to work with radio-isotope labelled probes (Radioisotope course level 5B)
- Good Research Practices: GCP/GLP
- Laboratory Animal Science Course (Dutch Article 9)
- Project management and presentation skills.

List of Publications

- Horn, M.[#], Denzel, S.I.[#], Srinivasan, B., et al. (2020). Hexosamine Pathway Activation improves Protein Homeostasis through the Integrated Stress Response. *iScience* 23, 100887.
- Weinert, B.T.*^{*}, Narita, T.*^{*}, Satpathy, S., Srinivasan, B., et al. (2018). Time-Resolved Analysis Reveals Rapid Dynamics and Broad Scope of the CBP/p300 Acetylome. *Cell* 174, 231-244 e212.
- Di Meo, I.*^{*}, Colombelli, C.*^{*}, Srinivasan, B.*^{*}, et al. (2017). Acetyl-4'-phosphopantetheine is stable in serum and prevents phenotypes induced by pantothenate kinase deficiency. *Sci Rep* 7, 11260.
- Srinivasan, B., et al. (2015). Extracellular 4'-phosphopantetheine is a source for intracellular coenzyme A synthesis. *Nat Chem Biol* 11, 784-792.
- Srinivasan, B., and Sibon, O.C. (2014). Coenzyme A, more than 'just' a metabolic cofactor. *Biochem Soc Trans* 42, 1075-1079.
- Lambrechts, R.A., Srinivasan, B., et al. (2014). Synthesis and characterization of 4-thiobutyl triphenylphosphonium-pantetheine, a pantetheine derivative. *American Chemical Science Journal* 4(5), 676-686.
- Siudeja, K., Srinivasan, B.*^{*}, et al. (2011). Impaired Coenzyme A metabolism affects histone and tubulin acetylation in Drosophila and human cell models of pantothenate kinase associated neurodegeneration. *EMBO Mol Med* 3, 755-766.
- Rana, A., Seinen, E., Siudeja, K., Muntendam, R., Srinivasan, B., et al. (2010). Pantethine rescues a Drosophila model for pantothenate kinase-associated neurodegeneration. *Proc Natl Acad Sci USA* 107, 6988-6993.

Membership in research societies

- Biochemical Society
- Human Proteome Organization (HUPO)

Patents

- Inventor of the patent 'Stable pantetheine derivatives for the treatment of diseases related to sequestration, toxicity or redistribution of coenzyme A'. (EP Appl. No. 15468006.0; 2015).
- Inventor of the patent 'Phosphopantetheine compounds alone or in combination with HMG-CoA reductase inhibitors for lowering serum cholesterol and serum triglycerides' (Appl. No. P-201400452; 2014).
- Inventors of the patent 'Stable pantetheine derivatives for the treatment of pantothenate kinase associated neurodegeneration (PKAN) and methods for the synthesis of such compounds' (EP Appl. No. 13191457.4; 2013).

Scholarships/Achievements

- Award: winner of Max Gruber prize 2014/2015 for the best peer reviewed publication in Biochemistry/Cell Biology at the University of Groningen (2017), The Netherlands.
- Oral presentation: selected for oral presentation in the 'Late-Breaking News' session at NA-NBIA symposium (2014), Stresa, Italy.
- Conference travel award: awarded travel grants from Max Gruber Foundation and TIRCON for attending NA-NBIA symposium (2014), Stresa, Italy.
- Conference travel award: awarded travel grant from NBIA alliance for attending NA-NBIA symposium (2010), Bethesda, USA.
- PhD scholarship: won PhD scholarship for designing innovative research proposal (covering salary and bench fee for PhD research work) from GUIDE, University of Groningen (2009), The Netherlands.
- PhD scholarship: received Jan Kornelis de Cock Stichting scholarship during PhD research work (2011), The Netherlands.
- Scholarship for Masters: awarded a full scholarship for two years TopMasters research studies at University of Groningen (2007), The Netherlands.

Symposium and Conferences

- Poster Presentation at BIOVARIA (2019), Munich, Germany.
- Poster Presentations at Max Planck Institute for Biology of Ageing internal symposium (2017-2019), Cologne, Germany.
- Flash talk and poster presentation at EMBO|EMBL Symposium: *Frontiers in Metabolism: From Molecular Physiology to Systems Medicine* (2014), Heidelberg, Germany.
- Poster Presentation at 'Coenzyme A and its Derivatives in Cellular Metabolism and Disease' (2014), London, UK.
- Poster Presentation at NA-NBIA 'Second International Symposium on Neuroacanthocytosis and Neurodegeneration with Brain Iron Accumulation' (2012), Ede, The Netherlands.
- Poster Presentation at NA-NBIA 'Brain, Blood and Iron: Joint International Symposium on Neuroacanthocytosis and Neurodegeneration with Brain Iron Accumulation' (2010), Bethesda, USA.

Personal details

- Date of birth: 8th May 1985
- Nationality/Sex: Indian/Male (Unmarried)
- Languages Known: English, Tamil, Hindi

References

Contact details of referees will be provided upon request.