

Dr. Ajith Vengellur

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RESEARCH INTERESTS

- Cell Signaling Pathways in Normal Physiology and Disease - Hypoxic Signaling
 - Mitochondrial Biology
 - Cancer Genetics
 - Development of Biomaterials for Medical Devices and Diagnostics
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PROFESSIONAL EXPERIENCE

Assistant Professor, (08/2015 - Present)
Cochin University of Science & Technology, Kochi, Kerala, India

Scientist, (01/2014 - 08/2015)
MIMS Research Foundation, Calicut, India

Private Technical Consultant, (04/2011 - 12/2013)
Palakkad, Kerala, India

Visiting Research Associate, (02/2008 - 12/2010)
Michigan State University, USA.

Graduate Assistant, (01/2001 - 02/2008)
Michigan State University, USA

EDUCATION

Specialized Certificate in ADMET Process, 2009
University of California San Diego Extension, San Diego, USA

Ph.D. (Genetics), 2007
Michigan State University, East Lansing, Michigan, USA
Areas of Focus: Molecular Biology, Genetics, Biochemistry, Genetic Engineering, Toxicology, Genomics and Proteomics

M.Sc. (Molecular Biology and Biotechnology), 2000
G.B. Pant University of Agriculture and Technology, Pantnagar, India

B.Sc. (Agriculture), 1997
Kerala Agricultural University, Vellanikkara, Kerala, India

TEACHING EXPERIENCE

Assistant Professor, Cochin University of Science & Technology

Molecular Genetics, Principles of Biotechnology, Plant Biotechnology, Industrial Biotechnology

Teaching Assistant, Michigan State University

Advanced Microbiology Laboratory (MMG408), Fall 2003, 60 Students

Fundamental Genetics (ZOL341), Michigan State University, Spring 2002, 40 Students

PUBLICATIONS

1. Hwang HJ, Lynn SG, Vengellur A, Saini Y, Grier EA, Ferguson-Miller SM, LaPres JJ. Hypoxia Inducible Factors Modulate Mitochondrial Oxygen Consumption and Transcriptional Regulation of Nuclear-Encoded Electron Transport Chain Genes. *Biochemistry*. 2015 Jun 23; 54(24):3739-48.
 2. Tappenden, D.M., Lynn, S.G., Crawford, R.B., Lee, K., Vengellur, A., Kaminski, N.E., Thomas, R.S., and LaPres, J.J., 2011. The aryl hydrocarbon receptor interacts with ATP5a1, a subunit of the ATP synthase complex, and modulates mitochondrial function. *Toxicol. Appl. Pharmacol.* 254(3): 299-310.
 3. Vengellur, A., Grier, E., and LaPres, J.J., 2011. The loss of HIF1a leads to increased susceptibility to cadmium chloride-induced toxicity in mouse embryonic fibroblasts. *J. Toxicol.* 2011; 2011:391074.
 4. Vengellur, A., Phillips, J.M., Hogenesch, J., and LaPres, J.J., 2005. Gene expression profiling of the hypoxia signaling in human hepatocellular carcinoma cells. *Physiol. Genomics.* 11; 22(3):308-18.
 5. Vengellur, A., and LaPres, J.J., 2004. The role of hypoxia inducible factor 1a in cobalt chloride induced cell death in mouse embryonic fibroblasts. *Toxicol. Sci.* 82, 638-46.
 6. Vengellur, A., Woods, B.G., Ryan, H.E., Johnson, R.S., and LaPres, J.J., 2003. Gene expression profiling of the hypoxia signaling pathway in hypoxia-inducible factor 1alpha null mouse embryonic fibroblasts. *Gene Expr.* 11(3-4):181-97.
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CONFERENCE ABSTRACTS

1. Vengellur, A., and LaPres, J.J. The protective role of HIF1a against cadmium chloride-induced toxicity in mouse embryonic fibroblasts. *Society of Toxicology Annual Meeting*, 2010.
2. Vengellur, A., Burgoon, L.D., Zacharewski, T.R., and LaPres, J.J. HIF1a null mouse embryonic fibroblast cells show increased susceptibility to cadmium-induced toxicity. *Society of Toxicology Annual Meeting*, 2006.
3. Vengellur, A., and LaPres, J.J. The role of hypoxia inducible factor 1a in cobalt chloride induced cell death in mouse embryonic fibroblasts. *Society of Toxicology Annual Meeting*, 2005.
4. Vengellur, A., Hogenesch, J., and LaPres, J.J. Gene expression profiling of the hypoxia signaling in human hepatocellular carcinoma cells. *Keystone Meeting on "Biology of Hypoxia: The Role of Oxygen Sensing in Development, Normal Function and Disease"*, 2004.
5. Vengellur, A., and LaPres, J.J. The hypoxia inducible factor 1a is critical to metal induced toxicity. *Society of Toxicology Annual Meeting*, 2002.

RESEARCH PROJECTS

1. UGC-Start-up Grant - Title: Investigating the Role of Hypoxia Inducible Factor alpha in Neuronal Homeostasis under Normoxia using Primary cortical Neuronal Culture - (PI) - **Rs. 10,00,000/- (2/2017-2/2019)**
2. Title: The role of gp130 - associated cytokines in the regulation of adult Neurogenesis
Funded by Kerala State Council for Science, Technology and Environment (KSCSTE) (Co-PI)
Rs. 25,30,000/- (2016 - 2019)
3. DBT- BIOCARE - Title: Development of Antibacterial Catheters for Preventing Nosocomial Infections from Therapeutically Modulated Natural Rubber Latex Formulation - (Co-PI) - **Rs. 47,77,545/- (2017-2020)**

COURSES FORMULATED

- BTG2107 - Principles of Biotechnology - Inter-departmental Elective course - 3 Credits
- BTG2212 - Applications of Biotechnology - Inter-departmental Elective course - 3 Credits
- BTG2311 - Cancer Biology - Elective - 3 credits

CONFERENCES/SEMINARS AS RESOURCE PERSON

- National Conference on Recent Advances in Biomedical Sciences and Biotechnology and Annual Meeting of Society for Biotechnologists, India 2015, held at Kochi on December 17-19, 2015
- Workshop on 'Nanotechnology Perspectives in Homeopathy-Characterization of Homeopathic Drugs' held at NIT Calicut on 10th March 2016.

POSITIONS HELD

- Convener, CUSAT-NUS Joint International Conference on Biotechnology and Neuroscience (to be held at CUSAT on December 19-21, 2016)
 - NAAC Convener for the Department of Biotechnology, CUSAT (2016)
 - Placement Officer for Department of Biotechnology, CUSAT (2016-18)
 - Joint Treasurer, Society for Biotechnologists (India) (2016-18)
 - Outside Subject Expert for the Institutional Biosafety Committee of MIMS Research Foundation, Calicut (2016-19)
 - Member, Life Sciences Task Force for graduate student recruitment to Biomedical Sciences, Michigan State University, (2005)
 - Member, Graduate Admissions Committee, Genetics Interdepartmental Program, Michigan State University, (2004)
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AWARDS AND HONORS

- Dissertation Completion Fellowship from the Graduate School at Michigan State University, 2006.
- Student travel award from the Society of Toxicology to present research at the Society of Toxicology Annual Meeting, 2005.
- Travel Grant from College of Natural Sciences to present research at the Keystone Meeting on “Hypoxia”, 2004.
- National University Teaching Eligibility Certificate (NET), Council of Scientific and Industrial Research (CSIR), India. 1999
- Junior Research Fellowship, Council of Scientific and Industrial Research (CSIR), India, 1999 (Declined).
- Merit scholarship from the Department of Biotechnology, Government of India during Master’s program, 1997 - 1999.

MEMBERSHIPS

- Society of Toxicology, (2002 - Present)
- Society for Biotechnologists (India), (2015 - Present)
- American Association for the Advancement of Science (AAAS), (2006-2010)
- Indian Society of Biological Chemists, (1997-1999)