

Faculty Details

Name: Dr. Arunasree MK

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Contact:

Area Of Research:Epigenetics

Faculty Details

Our lab focuses on basic as well as translational research.

Our lab is mainly interested in the biology of epigenetic gene regulation brought about by two major mechanisms - DNA methylation and histone acetylation. Histone acetylation is a reversible process and is regulated by two families of proteins namely histone acetyltransferases (HATs) and Histone deacetylases (HDACs). In humans, 18 HDACs have been identified. Although the HDACs are grouped into 4 classes based on their homology to yeast proteins. HDACs overexpression has been linked to the development and progression of several diseases including cancer, neurodegeneration, infection, etc. and are validated as good drug targets. However, due to their overlapping functions in cell physiology, result in severe toxicity. The long-term goal of our research is thus focused on the identification of posttranslational modifications and protein interactome of HDACs in specific cell type and in a specific physiological condition so as to better understand their mechanism of action.

We also are interested in translational research where we mainly focus on identifying solutions to combat multidrug resistance in cancer and infectious diseases, which is a major concern globally. The current treatment strategies are not effective and cause an economic burden on the patient. The development of newer drugs is both money and time-consuming. Therefore, the identification of alternate use of already existing drugs (drug repurposing) is a quicker and better strategy. The current research focus of the lab is to study the efficacy and underlying molecular mechanism of action of anti-inflammatory drugs in combination with anticancer drugs and antibiotics to overcome MDR in cancer and infectious diseases respectively.

Notice Board

No Records Available

Students And Project Trainees

Students/Projects Trainees

Name	Joined As	Mail	Contact
Arpita Sagar	PhD	---	---
P Mabu Subahan	PhD	---	---
Debasmita Naik	PhD	---	---

Former Students/Projects Trainees

Name	Joined As	Working
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Dr Shanmukha Kumar D PhD Department of Molecular Cardiology and Epigenetics, German Centre of Cardiovascular Research (DZHK), UniversitätsKlinikum, Im Neuenheimer Feld 669, Heidelberg, 69120, Germany.

Dr. Madhavi Annamanedi PhD DBT-RA, NIAB, Hyderabad

Dr. Vanaja G PhD Excelra Knowledge Solutions, Hyderabad

Dr. Githavani K PhD

Mr. Gajapati Varma PhD Food Corporation of India

Publications

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Patents

Patent No/Application No	Patent Title	Authors	Applied Year	Granting Year
4879/CHE/2015	Histone deacetylase inhibitory activity of oxadiazole linked with glycine/alanine for Cancer Prevention and Therapy	Pidugu Vijaya Rao, Nagendra Sastry Yarla, Srinivasa Rao Pedada, Kalle M Arunasree	2015	IN-PROCESS

Projects

Title	Year	Duration	Amount(In Lakhs)	PI/I
Role of Histone deacetylases (HDACs) in Maintenance of Inactive X chromosome (Xi)	2016	3	544000000000	PI
celecoxib in combination with antibiotics on clinically isolated bacterial strains and in Mouse model of Sepsis	2012	3	610000000000	PI
Study of regulation of ABC transporters by cyclooxygenase-2 (COX-2) and use of COX-2 inhibitors in reversal of drug resistance by ABC transporters	2012	3	230000000000	PI
Exploration of antibacterial, immunomodulatory and anti-inflammatory activity of certain polyphenolic compounds and role of NSAIDs on activity of antibiotics	2012	3	230000000000	PI
Molecular Dynamics Studies of the HDAC8 isoform, Virtual Screening of Potential HDAC8 Inhibitors using Structure and Ligand Based Studies – Synthesis and Biological Screening of Novel HDAC8 inhibitors	2012	3	210000000000	PI
Study of regulation of bacterial efflux pumps by cyclooxygenase-2 inhibitor, celecoxib.	2011	3	410000000000	PI
Identification and characterization of posttranslational modifications of HDAC4	2011	3	300000000000	PI