

Ongoing Projects under EFB-Interdisciplinary Sciences

S. No.	Project title	Name of PI's/ Institutions	States
1.	Apta-Sensor Based Microchannel Device for Early Detection of SREBP2/APOe4 Expression in High Risk Alzheimer's Disease Condition with Type2 Diabetes Mellitus	Prof. Surajit Ghosh, Indian Institute of Technology, Jodhpur	Rajasthan
2.	Elucidating the novel role of PGE2 signaling in the differentiation of alternatively activated macrophages and T regulatory cell mediated immunosuppression: from mechanism to therapeutics	Dr. Anindita Ukil, University of Calcutta, Kolkata/	West Bengal
3.	Regulation of ToxIN, a type III toxin-antitoxin RNP complex, assembly and functions	Prof. Mahavir Singh, Indian Institute of Science, Bangalore	Karnatka
4.	Role of monocytes against antibiotic-resistant Klebsiella pneumoniae infectio	Dr. Krishnendu Chakraborty, Institute of Genomics and Integrative Biology	New Delhi
5.	Structural and functional characterization of sulfur metabolism in Mycobacterium tuberculosis	Prof. Amit Singh, Indian Institute of Science, Bangalore	Karnataka
6.	Mechanistic Insights into the Regulation of Bacterial Cell Wall Remodeling	Dr. Manjula Reddy Centre For Cellular And Molecular Biology, Hyderabad,	Telengana
7.	Molecular engineering of mycobacteriophage towards development of anti-tuberculosis therapeutics	Prof. Vikas Jain, Indian Institute of Science Education and Research (IISER), Bhopal	Madhya Pradesh
8.	High-throughput in vivo Biosynthetic Cyclic Peptide Development Targeting CRISPR Adaptive Immunity in Pathogenic Bacteria to Enhance Bacteriophage Therapy against AMR	Dr. Basudeb Maji, Bose Institute, Kolkata	West Bengal
9.	Investigating the emergence of multi-drug resistance from a large-scale laboratory fitness analysis of multi-mutant variants of β -lactamase resistance genes	Dr. Riddhiman Dhar, Indian Institute of Technology, Kharagpur	West Bengal
10.	Leveraging Candida albicans D-amino acid oxidase inhibition to protect the host from fungal infections	Prof. Kaustuv Sanyal, Bose Institute, Kolkata	West Bengal
11.	Mechanism and regulation of RNAPII transcription and associated functions by DSIF like complex during Toxoplasma stage differentiation	Dr. Pallabi Mitra, Rajiv Gandhi Centre For Biotechnology Cheruvickal,	Kerala
12.	Development of novel insecticides against Anopheles culicifacies by harnessing phenylalanyl tRNA synthetase (AcFRS) as a target for controlling malaria	Prof. Pradeep Kumar Indian Institute of Technology Bombay, Mumbai	Maharashtra
		Dr. Amit Sharma, ICGB, New Delhi	New Delhi

13.	Unraveling the Initiation Events of Viral Assembly: Insights from the Membrane-Bound Structure of the Capsid in Kyasanur Forest Disease Virus	Dr. Sai Chaitanya Chiliveri, Indian Institute of Technology, Kanpur,	Uttar Pradesh
14.	The convergence of the Classical and Alternative NF- κ B pathways confers replication advantage on HIV-1C	Prof. Udaykumar Ranga Jawaharlal Nehru Centre For Advanced Scientific Research, Bangalore	Karnataka
15.	Decoding epigenetic landscape of drug resistance in colorectal carcinomas (CRC)	Dr. Rupesh Dash, Institute of Life Sciences, Bhubaneswar	Odisha
16.	Identification and characterization of the host proteins binding specifically to Chikungunya virus genomic RNA and their role in virus replication	Prof. Sudhanshu Vrat, Regional Centre For Biotechnology, Faridabad,	Haryana
17.	The role of Ifit2 in regulating glial cell function during neurotropic murine coronavirus infection	Prof. Jayasri Das Sarma Indian Institute of Science Education and Research, Kolkata	West Bengal
18.	Systematic evaluation of the vesicle-tethering TRAPP complex components as potential antiviral targets against influenza	Dr. Indranil Banerjee Indian Institute of Science Education and Research Mohali	Punjab
19.	Intrinsic Mechanisms and Counter-Mechanisms Of Interferon-Inducible Non-Canonical Effector Functions Of Karyophilic Proteins In Cell-Autonomous Immunity Against Retroviruses	Prof. Sharmistha Banerjee, University of Hyderabad	Telengana
20.	Decoding the phenotypic, functional and metabolic variability of neutrophils during the progressive stages of chronic HBV infection	Prof. Simanti Datta, Institute of Postgraduate Medical Education and Research, Kolkata	West Bengal
21.	Chemotactic Peptide-Based Microswimmers for Biotechnological Applications	Dr. Dibyendu Das, Indian Institute of Science Education and Research, Kolkata	West Bengal
22.	Designing structured tissues by directed self-assembly of cells using bio-printing and computational tissue engineering	Dr. Sayantan Dutta, Indian Institute of Technology Bombay, Mumbai	Maharashtra
		Dr. Tapomoy, Bhattacharjee, National Centre for Biological Sciences, Bangalore	Karnataka
23.	Engineering nanoarchaeosome-peptide complexes for osteoprotection in space: A Bone-on-chip study	Dr. Swathi Sudhakar, Indian Institute of Technology Madras, Chennai	Tamilnadu
24.	Development of Liver-on-chip models for in vitro liver disease modelling studies	Dr. Renu John, Indian Institute of Technology, Hyderabad	Telengana

25.	Novel molecular mechanisms of heart failure using pre-clinical models including human organoids and mice	Dr. Dhandapany Perundurai, Institute for stem cell biology and regenerative medicine, Bangalore	Karnataka
26.	Elucidating the structure and function of an enigmatic seven transmembrane receptor, the human Duffy antigen receptor for chemokines (DARC)	Dr. Arun Kumar Shukla, Indian Institute of Technology, Kanpur	Uttar Pradesh
27.	Virulence of <i>C. albicans</i> GPI biosynthetic mutants exhibiting hyperfilamentous phenotypes- a study using mammalian cell lines and mouse models	Dr. Niti Puri, Jawaharlal Nehru University	New Delhi
28.	Functional studies on unconventional epigenetic marks in <i>Plasmodium falciparum</i> and its role in parasite virulence	Dr. Arumugam Rajavelu, Indian Institute of Technology Madras, Chennai	Tamil Nadu
29.	Elucidation of molecular machinery and mechanisms that drive trophocytosis in <i>Entamoeba histolytica</i>	Dr. Sunando Datta, Indian Institute of Science Education and Research, Bhopal	Madhya Pradesh
30.	Exploring the role of opportunistic fungal infection on the immunoregulatory pathways that transform host immunity from protection to pathogenesis in filarial patients: relevance to therapeutic intervention of bancroftian filariasis	Dr. Suprabhat Mukherjee, Kazi Nazrul University, Asansol	West Bengal
31.	Mechanistic studies SUMOylation and <i>Salmonella</i> intracellular pathogenesis	Dr. Chittur Srikanth, Regional Centre for Biotechnology, Faridabad,	Haryana
32.	Inflatable mucoadhesive vaginal tablet coin (VTC) for instant spermicidal action as local vaginal contraceptive and microbicide	Dr. Trishna Bal, Birla Institute of Technology, Mesra, Dr. Karmabeer Jena, Central Tasar Research & Training Institute, Ranchi	Jharkhand
33.	The role of Eri1 (ER-resident Ras inhibitor 1) in controlling filamentation of <i>C. Albicans</i>	Prof. Sneha Komath, Jawaharlal Nehru University,	New Delhi
34.	Elucidating signalling mechanisms that govern iron homeostasis and host adhesion in <i>Candida glabrata</i>	Dr. Rupinder Kaur, Centre for DNA Fingerprinting and Diagnostics, Hyderabad	Telangana
35.	Investigation of the role and structural basis for function of <i>Plasmodium falciparum</i> vacuole membrane protein	Dr. Puran Sijwali, Centre for Cellular and Molecular Biology, Hyderabad	Telangana
36.	Investigating how inflammatory NF-kappaB activity in macrophages modulates Chandipura virus pathogenesis.	Dr. Soumen Basak, National Institute of Immunology,	New Delhi
37.	Role of MutT1 in two-component signaling (TCS) mediated regulation of gene expression, nucleotide homeostasis, and in	Prof. Umesh Varshney, Indian Institute of Science, Bangalore	Karnataka

	survival fitness of Mycobacterium tuberculosis		
38.	Role of PPE2 protein of Mycobacterium tuberculosis in the modulation of adipose tissue function and development of insulin resistance.	Dr. Sangita, Centre for DNA Fingerprinting and Diagnostics, Hyderabad, Dr. Sudip Ghosh, National Institute of Nutrition, Hyderabad	Telangana
39.	Sugar Transporters are new determinants of drug resistance in Candida auris	Prof. Rajendra Prasad, Amity University, Gurgaon Dr. Peer Abdul Haseeb Shah, University of Kashmir, Srinagar	Haryana Jammu & Kashmir
40.	Development of a circular RNA vaccine formulation co-targeting the Hepatitis A and Hepatitis E viruses	Prof. Milan Surjit, Translational Health Science and Technology Institute, Faridabad Dr. Ambadas Rode, Regional Centre For Biotechnology, Faridabad	Haryana
41.	Structural Insights into Mycobacterium tuberculosis Multidrug Transporter	Dr. Uddipan Das, All India Institute of Medical Sciences	New Delhi
42.	Investigating the role of platelet factor 4 and CXCR3 in dengue infection in mice with/without diabetes	Prof. Prasenjit Guchhait, Regional Centre For Biotechnology, Faridabad	Haryana
43.	Deciphering the role of potassium ion channels during mycobacterial infection	Dr. Krishnamurthy Natarajan, Dr. B.R. Ambedkar Center for Biomedical Research	New Delhi
44.	Evaluation of Topoisomerase 1 as a potential host-directed therapeutic target to treat Sepsis	Dr. Kushagra Bansal, Jawaharlal Nehru Centre For Advanced Scientific Research, Bengaluru	Karnataka
45.	Functional Dissection of Host Protein Import by Plasmodium for non-metabolic purposes	Dr. Rajesh Chandramohana das, Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram	Kerala
46.	Demystifying the impact of virus infection on the blood coagulation system and exploring the possibility of drug repurposing to treat viral diseases	Dr. Yogesh Karpe, Agharkar Research Institute, Pune	Maharashtra
47.	Identification of novel inhibitors of aminoglycoside acetyltransferase, MtbEis, causing drug resistance in Mycobacterium tuberculosis	Dr. Charu Sharma, Institute of Microbial Technology, Chandigarh	Punjab
48.	Exploring molecular mechanism of glycosylphosphatidylinositol anchored	Dr. Abhisheka Bansal, Jawaharlal Nehru University,	New Delhi

	proteins belonging to 6-cys family in asexual erythrocytic development of malaria parasite		
49.	Deciphering the role of trans encoded sRNA mediated gene regulation in stress adaptation and pathogenesis of M. tuberculosis	Dr. Ramandeep Singh, Translational Health Science and Technology Institute, Faridabad	Haryana
50.	Identification of novel and potent growth-inhibiting plasma-proteins	Dr. Niraj Kumar, Translational Health Science and Technology Institute, Faridabad	Haryana
51.	Influence of malaria-non- transmitting mosquito bites on the pathogenicity of Plasmodium vivax in human hosts	Dr. Chiranjib Pal, West Bengal State University, Kolkata	West Bengal
52.	Investigating the pathophysiological role of CD8 T cells in dengue disease	Dr. Anmol Chande International Centre For Genetic Engineering and Biotechnology	New Delhi
		Dr. Naveet Wig, All India Institute of Medical Sciences	New Delhi