Priyanshu Manojkumar Sinha

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WORK EXPERIENCE

01/04/2019 – CURRENT – Frankfurt am Main, Germany
ACADEMIC/STUDENT ASSISTANT (HIWI) – MAX PLANCK INSTITUTE OF BRAIN RESEARCH

Computational reconstruction of 3D electron microscopy data (Brain Images) using online software tool (Webknossos). This involve identifying and tracing of specialised cellular components.

Frankfurt am Main, Germany

01/10/2019 – 30/11/2019
MASTER STUDENT ASSISTANT – INSTITUTE OF CELL BIOLOGY AND NEUROSCIENCE, GOETHE UNIVERSITY

Assisted in cell culture practical course by mentoring first year master students in their laboratory work. Also **planned and prepared** the required reagents required for the cell culture practical course

Frankfurt am Main, Germany

04/2018 – 10/2018
MICROBIOLOGIST – PAXCHEM LTD.

Organised and carried out experimental and validation investigations using microbiology techniques as per **ASTM** an d **EN** guidelines to determine antimicrobial (bacterial, fungal and algae) activities of chemical products at manufacturing site.
Other activities include microbial and testing for Water and Surface contaminants, Monthly Subcultures of bacterial and Fungal strains, Documentation and reporting of experiment outcome, calibration of equipments, and assemble autoclave for disposal of microbial waste.

Mumbai, India

12/2014 – 09/2015
IGEM TEAM MANCHESTER GRAZ 2015 – MANCHESTER INSTITUTE OF BIOTECHNOLOGY

• **Lab team member**: planned and carried out scientific investigations that includes performing standard lab techniques for **preparation, transformation and characterization** of engineered bacterial plasmids.
• **Developed HPLC methods** to separate compounds involved in metabolic pathway of Dopamine in engineered bacteria.
• **Administrative activities** include: Communicating to academics and companies for funding, maintaining file for finances, lab consumables, conference registration. Assisted in making the team presentation, team wiki page and engaged in outreach activities
• **Modeling Team Leader**: Quantitatively determined the effects of diet sources on the synthesis of Dopamine and its derivative using computational approach.

Manchester, United Kingdom

EDUCATION AND TRAINING

15/10/2018 – CURRENT – Frankfurt am Main, Germany
MSC PHYSICAL BIOLOGY OF CELLS AND CELL INTERACTIONS (INTERNATIONAL MASTERS PROGRAM IN CELL BIOLOGY) – Goethe University Frankfurt am Main

Research-oriented education in the fields of **cell biology** and **physical biology** and also covers concepts from **bioche mistry**, **bioinformatics, immunology, genetics, advanced microscopy** and **data analysis.**

17/09/2012 – 29/06/2016 – Manchester, United Kingdom
MENG (HONS) BIOMATERIALS SCIENCE AND TISSUE ENGINEERING – The University of Manchester

Graduated with an overall 2.1 (German Grade 2.0). The Modules include concepts about **Material Science and Engineering** as well as **Biomedical Science**.

01/09/2008 – 30/06/2012 – Dubai, United Arab Emirates
GCE ADVANCED LEVELS (2010-2012) AND INTERNATIONAL GENERAL CERTIFICATE OF SECONDARY EDUCATION (2008 – The Winchester School

A-levels: Physics (B) Chemistry (A) Biology (B) Mathematics (A)
IGCSE: Grades achieved: 4A* 1A 2B including English (B), Physics (A*), Chemistry (A*), Biology (A*), Mathematics (A*), Business Studies (A), ICT (B)

LANGUAGE SKILLS

Mother tongue(s): ENGLISH | HINDI

JOB-RELATED SKILLS

Job-related skills

- **Cell culture**: primary cultures of mouse hippocampal neurons, HepG2 cells culture within collagen hydrogels (3D), 3T3 mouse fibroblast cell culture with nanoparticles, 3D Patient derived colorectal cancer organoid culture.
- **Microscopy:** confocal, fluorescence, light and multiphoton microscopy.
- **FACS**: multicolour flow cytometry analysis of blood samples and organoids, along with proficiency with FACSDiva and Flowjo
- **Molecular biology:** digestions, ligations, cloning and transformation, RNA extraction, PCR, DNA purification, DNA gel analysis.
- **Biochemistry:** SDS PAGE and Western blot, mouse AFP ELISA, Immunohistochemistry and Immunocytochemistry,
- **Animal Experiment:** genotyping of mouse; dissection of embryos for primary cultures of neurons and other organ extraction; experience of handling zebrafish embryos (microinjections and phenotype sorting).
- **Information Technology**: Proficient in the use of Microsoft office (word, excel and PowerPoint) and also Image J, Mathematica , Origin and MATLAB for Image and Data analysis.

DIGITAL SKILLS

Microsoft Excel | Power Point | Microsoft Office | Fluorescence Microscopy | Matlab (Basic) | ImageJFiji | FlowJo

PROJECTS

01/12/2014 – 28/09/2015
DopaDoser: The Self-Regulating, L-DOPA-Producing Gut Bacteria

http://2015.igem.org/Team:Manchester-Graz

iGEM Team Manchester Graz

Our project aims to tackle problems with current Parkinson's treatments by introducing a novel, self-regulating delivery system for L-DOPA: DopaDoser, based on the probiotic strain *E. coli* Nissle 1917 and expresses enzymes necessary for the synthesis of L-DOPA. The amount of L-DOPA produced is regulated via a sophisticated quorum sensing-based system to guarantee that therapeutic levels are reached without leading to peaks and troughs in plasma concentration levels. In the future DopaDoser could significantly improve patients' access to treatment and provide a cheaper alternative to Duodopa.

13/07/2020 – CURRENT

Modeling Adaptive Immune responses in Patient derived colorectal cancer organoids

Cancer immunotherapy has generated a lot of excitement lately in the scientific community along with new hope for cancer patients due to the recent clinical successes with immune checkpoint inhibitors, chimeric antigen receptor (CAR) T cell therapy, and adoptive cell therapy with tumor-infiltrating lymphocytes. Patients suffering from immunogenic types of cancers such as melanoma and lung cancers benefit from checkpoint inhibitor therapy. In contrast, for colorectal cancer (CRC) that is characterized by a low immunogenicity the systemic treatment mainly depends on traditional radio-/chemotherapy. Additional challenges for solid tumors are immunosuppression by the stromal cells present in the microenvironment and the absence of common tumor antigens that can be targeted. Today we lack predictive models to test treatment strategies in vitro. Patient-derived tumor organoids (PDTOs) have recently emerged as preclinical models that faithfully recapitulate the molecular and phenotypic characteristics of CRC. Organoids can be co-cultured with stromal cells such as cytotoxic T cells to test immunotherapeutic strategies. The aim of this project is to develop physiologic and scalable assays for identification of modulators of adaptive immune responses. For this purpose, models from an established biobank of CRC organoids will be combined with allogenic primary T cells. Robust cytotoxic responses will be mounted either against overexpressed or endogenously expressed tumor antigens using CAR based strategies. Cellular read outs will include measurement of organoid cytotoxicity and T cell activation and expansion. The developed assays will serve to screen pharmacologic libraries, e.g to identify modulators checkpoint inhibitors or negative regulators of T cell exhaustion. In addition, the results will provide valuable information for improved expansion of autologous tumor reactive cells

CONFERENCES AND SEMINARS

Conferences

- iGEM Giant Jamboree Conference 2015 Boston, USA
- Global Young Leader Conference 2011, USA

CERTIFICATIONS

Certifications

FELESA Course on Laboratory Animals (Core and Rodent Module) Function A, D, C