Deepankar Chakroborty

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EDUCATION

University of Turku | Institute of Biomedicine — Turku, FIN
Ph.D., Medical Biochemistry and Genetics — February 2023
Turku Doctoral Programme of Molecular Medicine (TuDMM)

University of Turku | Faculty of Mathematics and Natural Sciences — Turku, FIN
M.Sc., Bioinformatics (graduated *eximia cum laude approbator*) — October 2014

Amity University | Institute of Biotechnology — Lucknow, IND
B.Tech., Biotechnology, 8.16 Cumulative Grade Point Average — December 2012

RESEARCH EXPERIENCE

Genentech, Inc. | Molecular Oncology — South San Francisco, USA
Postdoctoral fellow with Dr. Weilan Ye — 2023 – present
- Studying effect of WNT-signaling on differentiation in colorectal cancer models

Medicity Research Laboratories | Institute of Biomedicine | University of Turku — Turku, FIN
Doctoral Candidate with Prof. Klaus Elenius & Prof. Laura Elo — 2015 – 2022
Thesis: Novel tools for identification of oncogenic driver mutations.
- Established a high throughput screen for identification of activating mutations (studied the *EGFR* family)
- Generation of high-coverage libraries consisting of random mutations (ORFs up to 4 kb)
- Analyze Illumina and PacBio next-generation sequencing data (SNV calling & annotation, CNV analysis)
- Establish mammalian cell cultures with stable expression (lenti- and retroviral transductions)
- Characterize mutations with growth assays, estimate sensitivity to tyrosine kinase inhibitors (dose-response analysis) and study receptor tyrosine kinase phosphorylation with western blots.
- Develop a database of recurrent somatic mutations (DORM) in human cancers and a web tool to design primers for site-directed mutagenesis using R and Shiny (available at https://eleniuslabtools.utu.fi).

Dept. of Medical Biochemistry and Genetics | University of Turku — Turku, FIN
Research Assistant with Prof. Klaus Elenius — Jun – Dec 2014
- Cloned retroviral mammalian expression constructs with Restriction Digestion & Gibson Assembly
- Evaluated methods for random mutagenesis and established mammalian cell cultures with stable transgene expression (using retroviral transduction).

Turku Centre for Biotechnology | University of Turku & Åbo Akademi — Turku, FIN
Master's thesis student with Prof. Laura Elo — Nov 2013 – May 2014
Thesis: Gene expression analysis in cancer microarray datasets, investigating the role of an Embryonic Stem Cell Factor in prognosis.
- Studied an embryonic stem cell marker (*L1TD1*) in human cancers using microarray and RNA-seq data
- Elucidated potential effects of the complex interactome of L1TD1 in different cancer types using R.

Turku Centre for Biotechnology | University of Turku & Åbo Akademi — Turku, FIN
Summer internship with Prof. Laura Elo — Jun – Jul 2013
- Mined Cancer Gene Expression databases (like GEO, ArrayExpress, Oncomine)
- Parsed the data (Python) and summarized using visualizations (R)

MRD Life Sciences & Amity Institute of Biotechnology | Amity University — Lucknow, IND
Bachelor's thesis student — 2011 – 2012
Thesis: DNA Extraction, Sequencing & Computational Analysis from *Neisseria flavescens*.

PATENTS

WO2019229302A1 | EP3802883A1 | US20210285053A1 — May 2019
Title: L1TD1 as predictive biomarker of colon cancer
Identification of a gene expression signature that predicts positive prognosis in colon cancer.

SKILLS and TECHNIQUES

Molecular Biology:
- Cloning (Gateway, Gibson Assembly, Restriction digestion) into lentiviral & retroviral expression plasmids
- Bacterial and Mammalian cell culture
- High titer virus production (lenti- & retro-) and doing viral transductions (transgene and shRNA)
- Random mutagenesis and production of mutation libraries with large ORFs (up to 4kb).
- Nucleic acid extraction DNA (mammalian genome & bacterial plasmid), and RNA.
- Site-directed mutagenesis using polymerase chain reaction
- Protein isolation, quantification, and western blot analysis
- Flow cytometry and Fluorescence assisted cell sorting

Bioinformatics:
- Scripting in R, bash, shell, python and Perl
- Statistical analysis of gene expression from microarray & RNA-seq data
- Variant calling and analysis from next-generation sequencing data (Illumina and Pacbio CCS).
- Proficient in developing and deploying Shiny apps (accessible as web apps) with nginx reverse proxy
- Expert in using Mac OSX, Debian Linux.
- Presentation: Keynote, MS PowerPoint. Illustration: Affinity Designer, Affinity Photo, Adobe Illustrator.

TEACHING and ADVISING EXPERIENCE

- 2019 - Peppi Suominen (B.Sc. student) for establishing mammalian cell cultures with stable expression using retroviral transductions, and for cloning and production of plasmids in *E. coli*.
- 2018 - Kaisa Aalto (M.D. student) for her thesis project with *ERBB2* receptor tyrosine kinase.

PERSONAL RESEARCH GRANTS

2021 | University of Turku Graduate School (TuDMM)	€ 11 300
2020 | K. Albin Johansson Foundation	€ 10 000
2020 | University of Turku Graduate School (TuDMM)	€ 27 000
2020 | Juhani Aho Foundation for Medical Research	€ 5 000
2019 | K. Albin Johansson Foundation	€ 10 000
2016 | University of Turku Graduate School (TuDMM)	€ 16 600

CERTIFICATIONS and COURSES

- YKI (Yleinen Kielitutkinto) certification for the Finnish Language - CEFR Level B1 (2020) | Opetushallitus (Finnish National Agency for Education).
- Non-neuronal optogenetics, EMBO practical course (2016) | EMBL Heidelberg, Germany.
- Laboratory animal science course (2015) | University of Turku. Competent and certified to plan, organize, and conduct *in-vivo* experiments.

INVITED TALKS

- 8 March 2022 - “Developing a high-throughput screen to identify activating mutations in tyrosine kinases”, presented at Cancer Research Seminar Series, Turku Cancer Research Society, Turku.

- 1 September 2020 - “iSCREAM – in vitro screen for activating mutations”, presented at Annual Seminar of Turku Doctoral Programme of Molecular Medicine, Turku.

MISCELLANEOUS INFORMATION

- *Memberships*:
  - American Association of Cancer Research (since 2017)
  - Turku Cancer Research Society (since 2016)
- *Languages*: English (Bilingual), Hindi (Bilingual), Finnish (CEFR: B1), Bengali (mother tongue).
- *Nationality*: Finnish
- *ORCID Identifier*: 0000-0002-3458-0205
- *Google Scholar*: SPfrYAAAAJ (Deepankar Chakroborty)
- *Github*: dchakro