Pratik Chandrani (Ph.D.)

Date of Birth: 17th March, 1987 **Gender:** Male

Biographical Sketch Summary

Present position:
Assistant professor & PI
Med. Onc. Molecular lab &
Centre for Computational Biology
Tata Memorial Centre
Mumbai
Tel: +91 – 22 – 2740 5183
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Educational qualification:
Ph.D. Life Science
M.Sc. Bioinformatics
M.Sc. Microbiology
B.Sc. Biotechnology

Highlights:

- Technology transfer of precision medicine solution 'ClinOme'
- Recipient of Foundation Day Award by HBNI
- Secured funding from DST, NSM, DBT as PI and co-PI.
- Bioinformatics software tools I developed are in active use by more than 300 researchers across 11 countries.
- Received numerous awards in International/National conference presentations
- Qualified UGC-CSIR National Eligibility Test (NET)
- Qualified IIT-Graduate Aptitude Test Engineering (GATE) in Biotechnology
- Qualified IIT-GATE in Life Science
- Sam Mistry Award for International Travel
- Patel Charitable Trust Award for International Travel

Research focus

Primary focus of my research work is cancer biology, computational biology and artificial intelligence. I am interested in development of novel strategies to discover and validate therapeutically relevant targets in cancer cells. Furthermore, I also focus on development of computational tools and resources for highly reproducible and open research.

PUBLICATIONS (selected)

Manuscript: E. Saldanha, D. Poojary, S. D. Banavali, K. Prabhash, A. Dutt and, **Chandrani P***. (in communication) Microchromosomes and their association with human diseases (corresponding author)

Manuscript: **Chandrani P***, E. Saldanha, D. Poojary, … A. Dutt*, and K. Prabhash*. (in communication) RET alterations differentiate molecular profile and microbiome of medullary thyroid cancer (co-corresponding author)

Manuscript: L. Das, S. Shekhar, **P. Chandrani*** and A. K. Varma*. (2021) In silico structural analysis of secretory clusterin to assess pathogenicity of mutations identified in the evolutionarily conserved regions. J Biomol Struct Dyn 2021 Pages 1-10 (co-corresponding author)

Manuscript: Arora R, Choi JE, Harms PW, **Chandrani P**. (2020) Merkel Cell Polyomavirus in Merkel Cell Carcinoma: Integration Sites and Involvement of the KMT2D Tumor Suppressor Gene. Viruses. 12(9):966 (equal contribution)

Manuscript: Arora R, Rekhi B, **Chandrani P**, Krishna S, Dutt A. (2019) Merkel cell polyomavirus is implicated in a subset of Merkel cell carcinomas, in the Indian subcontinent. Microb Pathog. 137:103778

Manuscript: 5: Salunkhe S, Chandran N, **Chandrani P**, Dutt A, Dutt S. (2018) CytoPred: 7-gene pair metric for AML cytogenetic risk prediction. Brief Bioinform. 2:1 PMID: 30380003.

Manuscript: Godbole M, **Chandrani P**, … Dutt A. (2017) "miR-129-2 mediates down-regulation of progesterone receptor in response to progesterone in breast cancer cells" *Cancer Biology & Therapy* Oct 3;18(10):801-805

Manuscript: Upadhyay P, Gardi N, Desai S, **Chandrani P**, … Dutt A. (2017) "Genomic characterization of tobacco/nut chewing HPV-negative early stage tongue tumors identify MMP10 as a candidate to predict metastases." *Oral Oncology* ;73:56-64

Manuscript: **Chandrani P**[*], Prabhash K[*], Choughule A, … Dutt A. (2017) "Drug-sensitive *FGFR3* Mutations in Lung Adenocarcinoma". *Annals of Oncology* Mar 1;28(3):597-603

Manuscript: Upadhyay P[*], Nair S[*], Kaur E, Aich J, Dani P, Sethunath V, Gardi N, **Chandrani P**, Godbole M, … Dutt A. (2016) "Notch Pathway Activation is Essential for Maintenance of Stem-like Cells in Early Tongue Cancer." *Oncotarget.* Jul 6. doi: 10.18632/oncotarget.10419. PMID: 27391340

Manuscript: Upadhyay P, … **Chandrani P**, Gupta S, Dutt A. (2016) "TMC-SNPdb: an Indian Germline Variant Database Derived From Whole Exome Sequences." *Database (Oxford)*. Jul 9. pii: baw104. doi: 10.1093/database/baw104. Print. PMID: 27402678

Manuscript: Iyer P[*], Barreto SG[*], Sahoo B, **Chandrani P**, … Dutt A. (2016) Non-typhoidal Salmonella DNA traces in gallbladder cancer. *Infect Agent Cancer* 11: 12

Manuscript: **Chandrani P**[*], Upadhyay P[*], Iyer P., … Dutt A. (2015) "Integrated Genomics Approach to Identify Biologically Relevant Alterations in Fewer Samples." *BMC Genomics*. 16:1. PMID: 26572163

Manuscript: **Chandrani P**[*], Kulkarni V[*], Iyer P, … Dutt A. (2015) "NGS Based Approach to Determine the Presence of HPV and Their Sites of Integration in Human Cancer Genome." *Br J Cancer*. 112:12. PMID: 25973533

Manuscript: Choughule A[*], Sharma R[*], Trivedi V[*], Thavamani A, Noronha V, Joshi A, Desai S, **Chandrani P**, Sundaram P, … Dutt A. (2014) "Coexistence of KRAS Mutation with Mutant but not Wild-type *EGFR* Predicts Response to Tyrosine-kinase Inhibitors in Human Lung Cancer." *Br J Cancer*. 25;111(11). PMID: 25117816

Invited Book Chapter: **Chandrani P** and Dutt A (2013) "Domain Specific Targeting of Cancer" in *Nuclear Signaling Pathways and Targeting Transcription in Cancer*, Springer Science + Business Media

Manuscript: Chougule A, Prabhash K, Noronha V, Joshi A, Thavamani A, **Chandrani P**, … Dutt A. (2013) "Frequency of EGFR Mutations in 907 Lung Adenocarcioma Patients of Indian Ethnicity." *PLoS One*. 8(10):e76164. PMID: 24124538

CONFERENCE ABSTRACTS (selected)

Poster: **Chandrani P**, Sethunath V, … Dutt A. Discovery of Actionable Alterations in Lung Adenocarcinoma at "Conference - Decoding the Genetics of Common Cancers in India", 19-21 February, 2016 in Pune, India. **(Recipient of first prize)**

Poster: **Chandrani P**, Sethunath V, … Dutt A. Discovery of Actionable Alterations in Lung Adenocarcinoma at "A Conference of New Ideas in Cancer – Challenging Dogmas", 19-21 February, 2016 in Mumbai, India. **(Recipient of third prize)**

Oral: **Chandrani P**, … Dutt A. Discovery of Actionable Alterations in Lung Adenocarcinoma at "34th Annual Convention of Indian Association for Cancer Research (IACR-2015)", 19-21 February, Jaipur, India.

Poster: **Chandrani P**, Iyer P, … Dutt A. HPVDetector: A Tool to Detect HPV and Their Integration Sites Using Next Generation Sequencing Data at "NextGen Genomics & Bioinformatics Technologies (NGBT) Conference", 17-19 November, 2014 in Bangalore, India. **(Recipient of first prize)**

Poster: **Chandrani P**, Aich J, Upadhyay P, Chougule A, Jose T, Chandna P, Prabhash K, Dutt A Profiling and Discovery of actionable alterations in lung adenocarcinoma at "Worldwide Innovative Networking (WIN-2013)", July 10-12; 2013, Paris, France.

Poster: **Chandrani P**, Prasad R, … Dutt A. Mutational Profiling of Actionable Alterations in Lung Adenocarcinoma. at "2nd Global Cancer Genomics Consortium

Symposium: Genomics Medicine in Cancer Research", 19-20 November, 2012 in Mumbai, India. **(Recipient of best poster award)**

Poster: Gupta N., **Pratik C.**, Vaishakhi T., Kumar S. Evolution and expansion of Programmed Cell Death (PCD) at "Elixir-2010", V.V.P. Engineering College, Rajkot, Gujarat. **(Recipient of second price)**

INVITED TALKS AND WORKSHOP TUTORING (selected)

As a tutor: **Boston Bangalore Biosciences Beginnings Program: Workshop on Genomic Applications in Healthcare & Translational Research** at IBAB, Bangalore during 10-23 December, 2017

Invited talk: "ClinOme -- a User Friendly Computational Tool to Generate Automated Clinical Reports from Raw NGS Data" at **Lung Cancer Consortium Asia Annual Meeting - Molecular Oncology Workshop** at ITC Parel, Mumbai during 15-17 December, 2017

As a tutor: **Cancer Informatics Workshop: Next Generation Data Analysis** at ACTREC, Navi Mumbai during January 28-30, 2013

PHD THESIS

Thesis title: "Discovery of Potential Therapeutic Targets in Human Cancer: A Functional Genomics Approach"

Duration: August 2011 – January 2017

Guide: Dr. Amit Dutt, Wellcome Trust/DBT India Alliance - Intermediate Fellow, ACTREC-TMC, India

TECHNICAL EXPERTISE

Artificial-intelligence – classical machine learning, natural language processing, neural networks
Personalized therapeutics –computational analysis and therapeutic inference
Genomics – high-throughput sequencing analysis (whole genome, exome, transcriptome, small RNA, epigenome)
Proteomics – mass-spectrometry and iTRAQ analysis
Functional Genomics – functional enrichment, pooled shRNA and CRISPRi screening analysis

Host-Pathogen biology –human pathogen analysis using high-throughput techniques, host-pathogen interactome analysis

Integrative biology – systematic integration of various biological data using systems approach

Clinical biology – class and sub-type prediction, survival analysis, patient stratification, biomarkers analysis

Biostatistics – dispersion of data, relationship between variables, significance of differences, regression, power calculation

Basic Biology – PCR, RT-qPCR, western-blotting, next-generation sequencing, cloning, MTT assay, xenograft transplantation, drug treatment testing on animals

EDUCATIONAL QUALIFICATION

Institute / University	**Examination (Major Subject)**	**Results**	
		% Marks	**Award Year**
ACTREC / HBNI	Ph. D. (Life science)	Best thesis award	Apr-2017
UGC – CSIR	NET (Lectureship)	all India rank 32	Jun-2012
Indian Institute Of Technology (IIT)	GATE (Biotechnology)	86 (Percentile)	Mar-2012
M.S. University of Baroda	M. Sc. (Bioinformatics)	65 %	Apr-2011
M.S. University of Baroda	M. Sc. (Microbiology)	51 %	Mar-2010
Indian Institute Of Technology (IIT)	GATE (Life Science)	91 (Percentile)	Mar-2009
M.N.V. Science College /Saurashtra University	B.Sc. (Biotechnology)	63 %	Mar-2007
P.V.M. High School/ Gujarat Board	12th (Biology, Maths, Physics, Chemistry)	36 %	Mar-2004
L.V.B. High School/ Gujarat Board	10th (Maths, Science, Computer)	73 %	Mar-2002

EXTRACURRICULAR ACTIVITIES

- Sports: badminton, cricket, running, mountaineering
- Photography: wildlife, landscape, and action
- Volunteer work: environment and human care

REFERENCES

Available upon request