

# Curriculum Vitae

**Dasaradhi Palakodeti**

**Assistant Research Investigator**

**Institute of Stem Cell Biology and Regenerative medicine,**

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## **Research Interests**

Stem cells, regeneration and RNA biology.

## **Academic Credentials**

- **Doctor of Philosophy, ICGEB/JNU**, New Delhi, India. **2000-2004**
- **Master of Science (Biotechnology)**, School of Biotechnology, *Madurai Kamaraj University*, Madurai, Tamil Nadu, India. **1997-1999**
- **Bachelor of Science (Microbiology, Genetics and Chemistry)**, *Osmania University*, Hyderabad, India. **1995-1997**

## **Awards and Honors**

- Swarnajayanthi Fellowship in Biology, DST, April 1<sup>st</sup> 2017.
- Wellcome Trust/DBT India Alliance Intermediate fellowship award, April 1<sup>st</sup> 2011- Sept 1<sup>st</sup> 2016.
- Ramanujan, (DST) and Ramalingaswami (DBT) Re-entry Fellowships, 2010, declined because of the acceptance of Wellcome/DBT fellowship.
- Obtained scholarship from CSIR-UGC to pursue doctoral studies.
- Travel grant from CSIR to attend International Congress for Infectious Diseases (ICID) at Singapore in march 2002.
- Qualified JNU-DBT joint national level entrance exam to pursue Masters in Biotechnology.

## **Academic Responsibilities**

- Editorial Board Member for Journal "Regeneration".
- Peer reviewed papers for BMC Genomics, Molecular Genetics and genomics, Molecular biology and evolution, Regeneration, Genome research and Plos Genetics.
- Member of the Student Thesis committee, Biology Department, Shivnadar University, New Delhi, India.
- Served on the Board of Studies for M.Sc. Biomedical Science, Bharathidasan University, Tamil Nadu, India.

## **Research Experience**

### **Faculty Position:** From Sept 2010

Institute for Stem Cell Biology and Regenerative Medicine (InStem)

Joined as a Assistant Research Investigator at inStem to study the role of non-coding RNA and RNA binding proteins in stem cell function and regeneration using Planaria and Hydra as a model organism.

### **Postdoctoral Research:** From 2004-2010

Department of Genetics and Developmental Biology

University of Connecticut Health Centre

Mentor: Brenton R. Graveley

Studied the role of small RNAs and RNA binding proteins involved in stem cell function and regeneration in planarians. Made extensive use of next-generation sequencing technology and bioinformatics to approach this problem. I also did transcriptome sequencing of planaria to annotate the planaria genome.

### **Doctoral Research:** From 2000-2004

Malaria Lab

International Centre for Genetic Engineering and Biotechnology

Mentor: Dr. Pawan Malhotra and Dr. V.S. Chauhan

Studied role of cysteine proteases in haemoglobin degradation and release of merozoites during erythrocytic cycle of *Plasmodium falciparum*. Developed methodology to perform RNAi efficiently in *Plasmodium falciparum* and *Plasmodium berghei*-a mouse malaria parasite.

Title of thesis: "Molecular analysis of cysteine proteases of *P. falciparum* and *P. berghei* using RNA interference".

### **Masters Research:** From 1997-1999

School of Biotechnology

Madurai Kamaraj University

Mentor: Dr. Ranjan Prasad and Dr. K. Dharmalingam

Identified and Cloned promoter of Methyl Cytosine Restriction A (Mcr A) in *E.coli* vector in frame with *LacZ* gene to study the regulation of promoter in *E.coli*.

Title of thesis: "Cloning and Characterization of Methyl Cytosine Restriction A (McrA) promoter elements".

## **Publications**

### **From Instem Laboratory- \*Corresponding author**

1. Bansal D, Kulkarni J, Nadahalli K, Lakshmanan V, Krishna S, Sasidharan V, Geo J, Dilipkumar S, Pasricha R, Gulyani A, Raghavan S, **Palakodeti D\***. Cytoplasmic poly (A)-binding protein critically regulates epidermal maintenance and turnover in the planarian *Schmidtea mediterranea*. **Development**. 2017 Sep 1;144(17):3066-3079.
2. Sasidharan V, Marepally S, Elliott SA, Baid S, Lakshmanan V, Nayyar N, Bansal D, Sánchez Alvarado A, Vemula PK\*, **Palakodeti D\***. The miR-124 family of microRNAs is crucial for regeneration of the brain and visual system in the planarian *Schmidtea mediterranea*. **Development**. 2017 Sep 15;144(18):3211-3223.
3. Shettigar N, Joshi A, Dalmeida R, Gopalkrishna R, Chakravarthy A, Patnaik S, Mathew M, **Palakodeti D\***, Gulyani A\*. Hierarchies in light sensing and

dynamic interactions between ocular and extraocular sensory networks in a flatworm. **Sci Adv.** 2017 Jul 28;3(7):e1603025.

4. Boya R, Yadavalli AD, Nikhat S, Kurukuti S, **Palakodeti D**, Pongubala JMR. Developmentally regulated higher-order chromatin interactions orchestrate B cell fate commitment. **Nucleic Acids Res.** 2017 Nov 2;45(19):11070-11087.
5. Arya D, Sachithanandan SP, Ross C, **Palakodeti D**, Li S, Krishna S. 2017. MiRNA182 regulates percentage of myeloid and erythroid cells in chronic myeloid leukemia. **Cell Death Dis.** Jan 12;8(1):e2547.
6. Lakshmanan V, Bansal D, Kulkarni J, Poduval D, Krishna S, Sasidharan V, Anand P, Seshasayee A, **Palakodeti D\***. Genome-Wide Analysis of Polyadenylation Events in *Schmidtea mediterranea*. **G3 (Genes, Genome and genetics)**. 2016, Aug 9.
7. Natarajan N, Ramakrishnan P, Lakshmanan V, **Palakodeti D**, Rangiah K. A quantitative metabolomics peek into planarian regeneration. **Analyst.** 2015 May 21;140(10):3445-64.
8. Rao RA, Dhele N, Cheemadan S, Ketkar A, Jayandharan GR, **Palakodeti D**, Rampalli S. Ezh2 mediated H3K27me3 activity facilitates somatic transition during human pluripotent reprogramming. **Sci Rep.** 2015 Feb 4;5:8229.
9. Vyas N, Walvekar A, Tate D, Lakshmanan V, Bansal D, Lo Cicero A, Raposo G, **Palakodeti D**, Dhawan J. Vertebrate Hedgehog is secreted on two types of extracellular vesicles with different signaling properties. **Sci Rep.** 2014 Dec 8;4:7357.
10. Sasidharan V, Lu YC, Bansal D, Dasari P, Poduval D, Seshasayee, A, Resch AM, Graveley BR\*, **Palakodeti D\***. 2013. Identification of neoblast-and regeneration-specific miRNAs in planarian *Schmidtea mediterranea*. **RNA** 10:1394-404.
11. Rangaiah K\*, **Palakodeti D**. Comprehensive analysis of neurotransmitters in regenerating planarian extract using UHPLC –MS/SRM. **Rapid Commun Mass Spectrom.** 2013 Nov 15;27(21):2439
12. S, Nair A, Cheedipudi S, Poduval D, Dhawan J, **Palakodeti D\***, Ghanekar Y\*. Deep sequencing reveals unique small RNA repertoire that is regulated during head regeneration in *Hydra magnipapillata*. **Nucleic Acids Res.** 2013 Jan 7;41(1):599-616.
13. Resch AM, **Palakodeti D\***. smallRNAs in planarian *Schmidtea mediterranea*. **Int.J Jour DevBio.** 2012;56:67-74.

#### **From Post Doctoral lab- \*First Author**

14. Resch AM\*, **Palakodeti D\***, Lu YC, Horowitz M, Graveley BR. Transcriptome analysis reveals strain-specific and conserved stemness genes in *Schmidtea mediterranea*. **PLoS One.** 2012;7(4). \* Equal contribution
15. Hollenbach JP, Resch AM, **Palakodeti D**, Graveley BR, Heinen CD. Loss of DNA mismatch repair imparts a selective advantage in planarian adult stem cells. **PLoS One.** 2011;6(7):e21808.
16. Jodi E. Eipper-Mains, Drew D. Kiraly, **Palakodeti D**, Richard E. Mains, Betty A. Eipper, Brenton R. Graveley. microRNA-Seq reveals cocaine-regulated expression of striatal microRNAs. **RNA**, 2011, 17:1529-43.
17. Lu YC1, Smielewska M, **Palakodeti D**, Lovci MT, Stefa Aigner, Yeo GW and Brenton R Graveley. Deep sequencing identifies new and regulated microRNAs in *Schmidtea mediterranea*. **RNA** 2009 Aug; 15(8): 1483-91.
18. **Palakodeti D\***, Smielewska M, Lu YC, Yeo GW, Graveley BR. The PIWI proteins SMEDWI-2 & SMEDWI-3 are required for stem cell function and piRNA expression in *Planarians*. **RNA.** 2008 Jun;14(6):1174-86.
19. **Palakodeti D\***, Smielewska M, Graveley BR. MicroRNAs from the *Planarian Schmidtea mediterranea*: a model system for stem cell biology. **RNA.** 2006 Sep;12(9): 1640-9.

### **From ICGEB as a graduate student**

20. Hossain MJ, Korde R, Singh S, Mohmmed A, **Dasaradhi PV**, Chauhan VS, Malhotra P. Tudor domain proteins in protozoan parasites and characterization of *Plasmodium falciparum* tudor staphylococcal nuclease. **Int J Parasitol**. 2008 Apr;38(5):513-26.
21. **Dasaradhi PV\***, Korde R, Thompson JK, Tanwar C, Nag TC, Chauhan VS, Cowman AF, Mohmmed A, Malhotra P. Food vacuole targeting and trafficking of falcipain-2, an important cysteine protease of human malaria parasite *Plasmodium falciparum*. **Mol Biochem Parasitol**. 2007 Nov;156(1):12-23.
22. Sachdeva S, Mohmmed A, **Dasaradhi PV**, Crabb BS, Katyal A, Malhotra P, Chauhan VS. Immunogenicity and protective efficacy of *Escherichia coli* expressed *Plasmodium falciparum* merozoite surface protein-1(42) using human compatible adjuvants. **Vaccine**. 2006 Mar 15;24(12):2007-16.
23. **Dasaradhi PV\***, Mohmmed A, Kumar A, Hossain MJ, Bhatnagar RK, Chauhan VS, Malhotra P. A role of falcipain-2, principal cysteine proteases of *Plasmodium falciparum* in merozoite egression. **Biochem Biophys Res Commun**. 2005 Nov 4;336(4):1062-8.
24. Mohmmed A, Kishore S, Patra KP, **Dasaradhi PV**, Malhotra P, Chauhan VS. Identification of karyopherin beta as an immunogenic antigen of the malaria parasite using immune mice and human sera. **Parasite Immunol**. 2005 May;27(5):197-203.
25. Agrawal N, **Dasaradhi P V**, Mohmmed A, Malhotra P, Bhatnagar RK, Mukherjee SK. RNA interference: biology, mechanism, and applications. **Microbiol Mol Biol Rev**. 2003 Dec; 67(4): 657-85.
26. Mohmmed A\*, **Dasaradhi P V\***, Bhatnagar RK, Chauhan VS, Malhotra P. In vivo gene silencing in *Plasmodium berghei*--a mouse malaria model. **Biochem Biophys Res Commun**. 2003 Sep 26; 309(3): 506-11.
27. Mohmmed A, Kishore S, **Dasaradhi PV**, Patra K, Malhotra P, Chauhan VS. Cloning and characterization of *Plasmodium falciparum* homologs of nuclear import factors, karyopherin alpha and karyopherin beta. **Mol Biochem Parasitol**. 2003 Apr 3;127(2): 199-203.
28. Malhotra P, **Dasaradhi P V**, Kumar A, Mohmmed A, Agrawal N, Bhatnagar RK, Chauhan VS. Double-stranded RNA-mediated gene silencing of cysteine proteases (falcipain-1 and -2) of *Plasmodium falciparum*. **Mol Microbiol**. 2002 Sep; 45(5): 1245-54.

### **Book Chapter**

1. **P.V.N. Dasaradhi**, Asif Mohmmed, Manzar Hossian, V. S. Chauhan, Pawan Malhotra. RNAi in *Plasmodium*. In: M. Sohail (ed.) RNAi protocols and applications. CRC press NY.

### **Patent**

Title: "Use of phosphono derivatives as anti-malarials".  
United States Patent # 20050171063

### **Invited Speaker:**

#### **International Meetings:**

1. Invited to give a talk at Young Scientist nEtworking meeting held at Centre for Genomic regulation organized by Prof. Vivek Malhotra, 24-25 April 2017.
2. Invited to give a talk at International flatworm meeting held at Oxford University organized by Prof. Aziz Aboobaker in the year 2015.
3. Invited by Prof. Francesco Blasi to give a talk at IFOM, Italy.
4. Invited by Prof. Aziz Aboobaker, Oxford University, Zoology department to give a talk at the lab retreat. Sept 2<sup>nd</sup> till Sept 6<sup>th</sup>, 2014.

5. Invited by Prof. Azim Surani to give a talk at Gurdon institute, Cambridge, UK. Aug 30<sup>th</sup>, 2014.
6. Title of the talk: Role of post transcriptional regulation in planarian stem cell function and regeneration. International stem cell meeting held at University college London, London, UK, from July-11<sup>th</sup>-13<sup>th</sup>, 2012.
7. Title of the talk : Post transcriptional regulatory networks essential for stem cell regulation and regeneration in planaria. International planarian meeting held at Kyoto Japan, November 14<sup>th</sup> -16<sup>th</sup> 2011, organized by Prof. Agata Hasigawa.
8. Title of the talk: Small RNAs in Planarian *Schmidtea mediterranea*. Keystone symposia on RNA silencing : Mechanism , Biology and Application. 2010, Jan:14-18.

### National meeting

1. Invited to speak at RNA meeting held at CCMB from Jan 8<sup>th</sup>- 10<sup>th</sup>, 2016.
2. Guest lecture to school students on science day held at JNCASR, Bangalore in 2015.
3. Invited speaker at InSDB meeting held at CCMB, Hyderabad, from July 15<sup>th</sup> -18<sup>th</sup>, 2015.
4. Invited speaker at "International Conference on Genome Architecture and Cell Fate Regulation" held at Hyderabad Central University, Hyderabad in 2015.
5. Invited speaker at Conference on applying NGS, held at capitol Hotel by Genotypics on Sept 11<sup>th</sup> , 2014.
6. Invited speaker at InSDB meeting held at TIFR mumbai, Dec 2<sup>nd</sup> till Dec 6<sup>th</sup> , 2013
7. Invited speaker at AICBC meeting held at inStem Bangalore , Dec22<sup>nd</sup> till 24<sup>th</sup>, 2013.
8. Delivered Guest Lecture at Iisc, MRDG department, Invited by Prof. Sandhya Visweswariah, April 19<sup>th</sup>, 2013.
9. International conference on Functional genomics : Challenges and prospects, Held at BHU from Oct 2-4, 2010.
10. 1st Regional Workshop on Next Gen Sequencing Experimental Design and Quantitative Genomics, conducted by Geschickten at Delhi south Campus, Feb 25<sup>th</sup> and 26<sup>th</sup>. 2011.
11. Frontiers of Gene Editing and Gene Silencing Technologies in eukaryotic systems" on July 18, 2011 held at Le Meridian, Bangalore.
12. Cross talk in Haematological Research between Indo-EU Investigators: Focus on Cancer, Stem Cells, Genomics and Signaling, held at NCBS, Bangalore from 6-8th November., 2011.
13. Conference on Informatics & Integrative Biology (CIIB2011), Dec 14-16, 2011.
14. Indo - Australian Conference on Stem Cell Biology held at JNCASR from Dec 7-9<sup>th</sup> 2011.
15. Instructor and Invited speaker for Bioinformatic workshop on Cancer held at ACTREC, Mumbai from Jan28-30<sup>th</sup>, 2013.
16. AICBC meeting held at Bose Institute , Dec4, 2010.

### Extra mural funding (at inStem):

**1. Dissect the functional relevance of ribosomal heterogeneity in pluripotent stem cells using regenerative model system planarian *Schmidtea mediterranea* (Principal Investigator).**

**Agency:** Department of Science and Technology

**GrantID:** DST/SJF/LSA-02/2015-2016

**Grant Amount:** 1,78,70,400 INR (274,929 USD)

**Grant start and end:** April 2017- April 2022

**2. RNA mediated regulation of stem cell function and regeneration in Planarian *Schmidtea mediterranea*. (Principal Investigator).**

**Agency:** Wellcome trust/DBT India Alliance, Wellcome trust/DBT India Alliance Intermediate fellowship.

**GrantID:** 500160/Z/09/Z

**Grant Amount:** 3,55,74,850 INR (547,305 USD)

**Grant start and end:** April 2011- Sept 2016

**3. Deciphering Molecular Mechanisms of Hydra Regeneration through Comparative Transcriptome and Small Non-coding RNA Profiling. (Principal Investigator)**

**Agency:** Department of Biotechnology, Govt of India

**Grant amount:** 53,90,000 INR (82,923 USD)

**Start and end date:** 28/05/2014 - 27/05/2017

**4. Neurostem: Stem cell Models for discovery of RNA mediated regulation in Neuro degeneration (Co-Investigator).**

**Time commitment as Co-investigator:** 20% of the total grant period

**Agency:** Department of Biotechnology, Govt of India.

**GrantScheme:** Indo-Danish proposal for strategic research project within human health science biotechnology 2015

**Grant amount.** 4.94,00,000 INR (760,000 USD)

**Start and end date:** 19/05/2016-18/05/2020

**5. Identification of microRNAs involved in fragile X syndrome. (Co-Investigator)**

**Time Commitment as Co-investigator:** 5% of the total grant period

**Grant Agency:** Department Of Biotechnolgy, Government of India

**Grant Amount:** 69,92,000 INR (107,569 USD)

**Start and end date:** 30/03/2015- 30/03/2018

**Lab Personnel**

**Postdoctoral fellows**

Dr. Nishta (Biocare post doctoral fellow)

Dr. Rajdeep.

**Graduate Students**

Namita Mukundan (Graduate student)

Vairavan Lakshman (Graduate student)

Srikar Krishna(Graduate student)

Souradeep Sarkar (Graduate student)

Vinay Dubey (Graduate Student)

Jhanavi Kulkarni (Project Trainee)

Nivedita Hariharan (Project Trainee)

**Students Graduated from the lab**

Dr. Vidyanand Sasidharan

Dr. Dhuru Bansal

**Project students Supervised(External guide)**

1. Niyanta Kumar (2011)  
Title: "Identification and Characterization of RNA binding protein in Stem cells of planarian *Schmidtea mediterranea*".
2. Revathi Raman (2012)  
Title: *Role of DED Box Domain proteins in stem cell function and regeneration in planarian Schmidtea mediterranea*".
3. Sowmya Bhattacharjee (2013)  
Title: *Significance of WNT signaling in Planarian Regeneration*.
4. Foram Lalwani (2013)  
Title: *Characterization of SMED-PABPN1 in planarian Schmidtea mediterranea*.
5. Vairavan Laxman (2013)  
Title: *Functional Annotation of Hydra and Planaria transcriptome: Model Organism for stem cells*.
6. Urvashi Patel (2014)  
Title: *Role of Zinc Finger and KH domain proteins in planarian regeneration and stem cell function*.