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**EDUCATION**

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**Ph.D., Biology**, School of Biological sciences, Institute for protein research, Osaka University, Osaka, Japan. Advisor: Dr. Akira Shinohara; Co-Advisor: Dr. Miki Shinohara  
2007-2011

**M.Sc., Biochemistry**, Andhra University, Andhra Pradesh, India 2001-2003

**B.Sc., Chemistry**, AVN College, Andhra University, Andhra Pradesh, India 1998-2001

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**RESEARCH EXPERIENCE**

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**HHMI, University of California Davis, Department of Molecular Genetics and Microbiology, Davis, CA**

Postdoctoral Research Associate Advisor: Dr. Neil Hunter 2012-2017

Understanding the molecular mechanism of homologous recombination. A major focus is how homologous recombination is regulated during meiosis by SUMO, Ubiquitin and proteolysis in order to facilitate the pairing and segregation of homologous chromosomes.

**Institute for protein research, Osaka University, Osaka, Japan**

Graduate Research Assistant Advisor: Dr. Akira Shinohara 2006-2011

Understanding the mechanisms of Rapid chromosome movements in meiosis. I revealed that nuclear envelope protein Mps3 (Sun domain protein) phosphorylation dependent nuclear envelope remodeling facilitates rapid movements of chromosomes during meiosis in *Saccharomyces cerevisiae*.

**Praj Industries Pvt. Ltd. Bhavadhan, Pune, India**

Research associate Biochemistry 2005-2006

Biomass to Ethanol project: Isolation and identification of byproducts from lingo cellulosic biomass to Ethanol reactions.

**IIT Kharagpur, India**

Junior research fellow Advisor: Dr. P.Das and Dr. S.Dey 2004-2005

Induction and production of Betalain pigments from hairy roots of *Amaranthus tricolor*.

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**PUBLICATIONS**

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**In preparation:**

1. **H.B.D. Prasada Rao\***, Benzeman Van, Kevin Zhang, and Neil Hunter. (2017). HORMA domain proteins; new functions in meiosis. (MS in preparation)
2. **H.B.D. Prasada Rao**, Benzeman Van, Kevin Zhang, Grant Tarto, Tiffeny Chang, Amy Lee, Sara Shubert, Michel Kuhlen, and Neil Hunter, SUMO modulates Crossover rate in mammalian meiosis. (MS in preparation)
3. **H.B.D. Prasada Rao**, Miki shinohara, Akira Shinohara, CDK- and DDK-dependent phosphorylation of SUN protein Mps3 and nucleoporins control remodeling of the nuclear envelope in meiosis. (MS in preparation)

## Published:

4. Huanyu Qiao\*, **H.B.D. Prasada Rao\***, Michael Nguyen, Jared H.Fong, Manali Sarpe, Benjamin W. Van, Amy Lee, Tiffany.Y.H.Chng, Kevin Zang, Neil Hunter. (2017). RNF212 Impedes DNA Break Repair to Enable Post-Partum Oocyte Quality Control. In revision with **Mol.cell.** \* **Co first author.**
5. **H.B.D. Prasada Rao**, Huanyu Qiao, Shubhang K. Bhatt, Logan R.J. Bailey, Hung D. Tran, Sarah L. Bourne, Wendy Qiu, Anusha Deshpande, Ajay N. Sharma, Connor J. Beebout, Roberto J. Pezza and Neil Hunter (2017). A SUMO-Ubiquitin Relay Recruits Proteasomes to Chromosome Axes to Regulate Meiotic Recombination. **Science**, 27Jan 2017: Vol. 355, Issue 6323, pp. 403-407
6. H Qiao, **H.B.D. Prasada Rao**, Ye Yang, Jared H. Fong, Jeffrey M. Cloutier, Dekker C. Deacon, Kathryn E. Nagel, Rebecca K. Swartz, Edward Strong, J. Kim Holloway, John Schimenti, Jeremy Ward, Neil Hunter. (2014). Antagonistic roles of ubiquitin ligase HEI10 and SUMO ligase RNF212 regulate meiotic recombination. **Nature Genetics**, 46(2): 194-199.
7. Gyanalok Das, pradeep naik , M Bordoloi, **HBD PrasadaRao** ,**P.Das** "Typhonium trilobatum (L.) Schott shows Potency against Lymphatic Filariasis in Man "**International Journal of Indigenous Medicinal Plants**" **May 2015**, ISSN: 2051-4263, Vol.48, Issue.1.
8. **H.B.D.Prasada Rao**, Miki shinohara, Akira Shinohara, The Mps3 SUN domain is important for chromosome motion and juxtaposition of homologous chromosomes during meiosis. **Genes to cells** (2011) 16, 1081–1096.
9. P.Das, S.dey,AB.Das,Mohanty and **H.B.D.Prasada rao** Variation in Chromosome Number, Karyotype and Nuclear DNA Content of Five Species of Indian *Typhonium* Schott. (Araceae)—A Medicinally Important Plant. **Cytologia** Vol. 71 (2006) No. 4 P 371-377.

## Patent:

A Novel Biofuel Additive for Diesel Engines by Prof. P. Das, Prof. S. Dey, Dr. R. Sen, Prof. B. B. Ghosh & Mr. **H. B. D. Prasada Rao** IT-KGP-BF-11-06-05. **Indian Patent No 257942 (1373/KOL/2006).**

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## PRESENTATIONS

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1. 2015. EMBO Meiosis, London. (Poster Presentation)
2. 2014. Howard Hughes Medical Institute conferences, Chevy Chase, Maryland. (Poster Presentation)
3. 2011. Japanese society of molecular biology congress, Yokohama (Poster Presentation)
4. 2011. 3R international conference in meiosis 2011, Toyama. (Poster Presentation)
5. 2010. Chromosome workshop, Kagovonsen. (Oral presentation)

- 6. 2010. International conference, chromosome cycle, Osaka. (Oral presentation)
- 7. 2009. Japanese society of molecular biology congress, Yokohama. (Poster Presentation)

**TEACHING AND MENTORING EXPERIENCE**

**UC Davis**, Department of Molecular Genetics and Microbiology, Davis, CA 2012-2017

- Undergraduate Student Mentor  
Supervised and guided 16 undergraduate students in genetics research projects.
- Undergraduate Honor Thesis Co-Mentor  
Supervised three undergraduate students in genetics research projects. All the three students graduated with College Citations due to their outstanding honors theses.

**Osaka University**, Department of Biology  
Graduate teaching assistant August 2007-May 2010

**AWARDS**

- JASSO fellowship, Japan 2008 to 2010
- MEXT Fellowship, Japanese government 2007 to 2011
- R99 Foundation fellowship, Japan 2008 to 2010
- Graduate school of science international student fellowship 2007 to 2010
- BMC fellowship, Osaka University 2008 to 2009

**PROFESSIONAL TRAINING**

UCD Microscopy Course, UC Davis, CA 2014

**PROFESSIONAL ORGANIZATIONS**

- Genetics Society of America, GSA, Member 2012-2017
- The molecular biology society of Japan, MBSJ, Member 2007-2012