

DATE: Day29 Month04 Year2024

SUMMARY of
FY2023 RESEARCH RESULTS REPORT
For International Collaborative Research with IPR, Osaka University

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| Research Title | | Role of chromatin remodelers in meiotic recombination and transcriptional switch during yeast meiosis, with emphasis on genetic disorders, infertility, and cancers. |
| Applicant | Name | Gunjan Deepak Kumar Mehta |
| | Affiliation | Indian Institute of Technology Hyderabad, India |
| | Present Title | Assistant Professor |
| Research Collaborator (Host PI) | | Prof. Akira Shinohara |
| <p>Summary</p> <p>Meiosis is a specialised cell division mechanism that generates gametes by reducing the ploidy of the genetic material. In humans, this leads to the development of egg and sperm cells. Any meiotic error can result in miscarriages, birth defects, genetic illnesses, and cancer. Eukaryotic DNA typically wraps around histone octamers, generating nucleosomes that prevent protein binding. Chromatin remodelers (CRs), which include the INO80, SWI/SNF, ISW1, and CHD families, help to remove nucleosomes, allowing for protein-mediated transactions. Meiotic recombination is the exchange of genetic material between the paternal and maternal chromosomes via DNA-protein interactions. While there is circumstantial evidence that CRs are involved in this process, a thorough study is required to fully define their activities.</p> <p>The main aim of this visit was to learn two research techniques: 1) Pulse field gel electrophoresis and 2) 1D southern blotting to quantify meiotic recombination intermediates (double-strand breaks, crossovers and non-crossovers). Ms. Sheetal learned both these techniques in Prof. Shinohara's lab and she will perform further experiments at IIT Hyderabad, India. These experiments are essential for revealing the role of chromatin remodelers in meiosis. Also, she has prepared a manuscript for the "role of chromatin remodelers in meiosis" in collaboration with Prof. Akira Shinohara which will be submitted for publication soon. During her visit, she attended a two-day seminar on "IPR retreat". During this two day seminar, she gained significant amount of knowledge and insights.</p> | | |

***Deadline: May 10, 2024**

***Please submit it to E-mail: tanpakuken-kyoten@office.osaka-u.ac.jp.**

***Please describe this summary within 1 sheet. Please DON'T add some sheets.**

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