

(For JSPS Fellow)

Form B-5

Date (日付)

01/10/2015 (Date/Month/Year: 日/月/年)

Activity Report -Science Dialogue Program-
(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): Santosh Kumar Sharma (ID No. P13399)
- Participating school (学校名): Fukui Prefectural Wakasa High School (Obama-city, Fukui)
- Date (実施日時): 29/09/2015 (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): (in English)- The World of Chromosomes
(in Japanese)-

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

Begin with formal introduction of researcher (me) and the country of origin (India), the presentation actually move forwarded to the understanding of chromosomes, cell division i.e. mitosis and meiosis, packaging of the DNA into chromosomes, associated proteins and its modifications in plants. In particular, after the brief outline about the chromosomes and its structure, all of the major stages of mitosis and meiosis have been discussed for better understanding of the cell division and its biological significance. The original snapshots and videos have been provided for better understanding of the dividing cells. The cytogenetic analysis of chromosomes through karyotyping and other relevant tools was discussed in detail with appropriate examples. Some of the very interesting orchid species along with their economical value was also discussed. Further, the detailed information about the fluorescence in situ hybridization (FISH), multi-color FISH (Mc-FISH) and genomic in situ hybridization (GISH) have been provided that allow the global understanding of minute details of chromosome structure, facilitate genome-specific chromosome painting in orchid hybrids and subsequently permit sophisticated analyses of chromosomal behavior in plants. Attempts have also been made to summarize the utility of molecular cytogenetic tools in exploration of important chromosomal landmarks in plants. The role of associated DNA and histone proteins in formation of epigenetic regulating interphase and metaphase chromatin environment have been emphasized. The global patterns of chromatin modification such as DNA methylation and histone tail modifications both at mitosis and meiosis along with nuclear size and shape, relative content and distribution of hetero/euchromatin, organization and structure of chromosomes (e.g. position and orientation) have been included also to gain new insights into the chromosome based epigenetic regulation of cellular development of particular plant species like orchids. The current status and future perspectives of chromosome research on plants has also been addressed. The presentation will be ended with an appeal to conserve our unique and beautiful nature through scientific advances.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 100 min (分), Q&A time (質疑応答時間) 20 min (分)

◆Lecture style (ex.: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

Used projector and power-point presentation

◆Interpretation (ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

No accompanied person; but the school teachers were kind enough to help me with Japanese explanation of the topic to make it more interesting and understandable to students

◆Name and title of accompanied person (同行者 職・氏名)

NA

◆Other note worthy information (その他特筆すべき事項):

- Impressions and opinions from accompanied person (同行者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。):

NA