

REPORT

Report on participation of the ICMR International Fellow (ICMR-IF) in Training/Research abroad.

1. **Name and designation of ICMR- IF** : Rashmi Shukla
2. **Address** Room 112, Old OT Block, Genetic Unit, Department of Pediatrics, AIIMS, New Delhi 110029
3. **Frontline area of research in which training/research was carried out** : Molecular cytogenetics
4. **Name & address of Professor and host institute** : Prof. Niels Tommerup, Department of Cellular and Molecular Medicine (ICMM), University of Copenhagen, Blegdamsvej 3B, DK-2200, Copenhagen N, Denmark
5. **Duration of fellowship with exact date** : September 16, 2019- October 8, 2019
6. **Highlights of work conducted**
 - Preparation of long-fragment mate-pair sequencing (MPS) libraries for NGS-based whole genome sequencing of balanced reciprocal translocations and inversions. After seeing the technique performed in the laboratory Rashmi Shukla has successfully prepared her own libraries which have been sent for Illumina HiSeq 2500 sequencing.
 - Analysis of MPS-data from both complex chromosomal rearrangements (CCRs) and simple two-way translocations, using a custom made analytical pipeline. See attached example of a report from such an analysis.
 - Discussion of future plans for collaborations,
 - i) **Technique/expertise acquired:** Long insert mate pair library for NGS based whole genome sequencing of balanced chromosome rearrangements
 - ii) **Research results, including any papers, prepared/submitted for publication** : Under preparation
 - iii) **Proposed utilization of the experience in India** : Our lab is now using the long insert mate pair sequencing to characterise the breakpoints of balanced chromosome rearrangements at nucleotide level. The ICMR-IF has been awarded an intramural AIIMS research grant to continue this work.

Rashmi Shukla
Signature of ICMR-IF

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