

Meeting Report

8th RNA Group Meeting: Novelties and Outcome

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RNA has gained a prominent space in the various fields of biological research and the last couple of decades have been exciting for RNA researchers. The exponential rise in the excitement in the field of RNA biology was evident from the fervent participation of about 50 enthusiastic Indian PIs and 100 students working on diverse aspects of RNA biology in the 8th RNA Group Meeting which was held at CSIR – Centre for Cellular and Molecular Biology, Hyderabad between 8th-10th January 2016.

The RNA Group Meeting was born in 2003 out of the necessity for discussing new advances in the field when the first meeting was held at Indian Institute of Sciences, Bengaluru. This was a great success which inspired the holding of subsequent editions of the meeting at different locations in the country. With time, the number of active researchers in RNA biology has grown significantly and the current number is well over 100. The excitement in the RNA field is evident from the large number of PIs and students who participated in the current meeting.

The 8th RNA Group meeting was organized into ten intense scientific sessions encompassing almost all aspects of RNA biology, namely, miRNA and gene regulation, miRNA in Health and Diseases, RNA in Plant Biology, Structural and Computational Biology, RNA in Infectious Disease Biology, Translational Regulation, Long non-coding RNAs, Regulation of RNA Stability, RNA Stability and Processing, and RNA in Cellular Processes. Additionally, two poster sessions each with nearly 40 posters were part of the meeting.

Some highlights of the research works presented in the meeting are noted here. Partho Sarothi Ray (IISER, Kolkata) elaborated on intricate regulatory

network involving miR-125b and HuR which resulted in fine-tuning of p53 expression in response to the genotoxic stress. Jomon Joseph (NCCS, Pune) talked about nucleoporin Nup358:AGO interaction and identification of a new conserved motif for the AGO family of proteins. P. Dasaradhi (inStem, Bengaluru) demonstrated miR-124c as a key regulator of axon guidance signal for proper neural patterning in Planarians. Shree P. Pandey (IISER, Kolkata) presented interesting findings on AGOs and small regulatory RNAs in plants. P. V. Shivaprasad (NCBS, Bengaluru) discussed small RNA mediated pathways that regulate various aspects of plant development. Saumitra Das (IISc, Bengaluru) outlined the interplay between MALAT1, HuR, miR-125b, PTB and La proteins in HCV life cycle and the viral strategies for survival against host response. Manjula Kalia (THSTI, Faridabad) showed the crucial role of autophagy in modulating innate immune response during JEV infection. Vasudevan Seshadri (NCCS, Pune) presented PIP4K2A's indispensable role as RNA binding protein affecting the gametocyte development of *P. falciparum*. Sagarmoy Ghosh (Calcutta University, Kolkata) showed that the epsilon motif of HBV pre-genomic RNA assumes a G-Quadruplex structure with potassium dependent nucleolytic activity. Umesh Varshney (IISc, Bengaluru) demonstrated how the two conserved features comprising of three highly conserved GC pairs in the anticodon stem of Eubacterial initiator tRNAs allow them to pass through distinct checkpoints in translation initiation. Chandana Barat (St. Xavier's College, Kolkata) presented anti-chaperone activity of domain of 23S ribosomal RNA. S C Lakhotia (BHU, Varanasi), described a novel aspect of "off target" effects of surviving sense and/or anti-sense strand after the *in vivo* expression of siRNA duplex in cell;

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his group found that upon expression of *hsr*RNAi in *D. melanogaster*, a proteasomal machinery dependent selective and rapid degradation of the stress induced Hsp70 is activated. Beena Pillai (IGIB, New Delhi) identified a protein binding motif in two lncRNAs and demonstrated abrogation of function by mutations in the structural motif of the lncRNA. Dipankar Bhandari (MPI for Developmental Biology, Tübingen, Germany) revealed that *D. melanogaster* and *H. sapiens* Nanos proteins have evolved different sequence motifs (NIM and NED, respectively) to recruit CCR4-NOT complex. Sudha Bhattacharya (JNU, New Delhi) showed that during serum starvation *E. histolytica* blocks ribosome biogenesis post-transcriptionally by inhibiting pre-rRNA processing on the one hand, and the translation of RP mRNAs on the other. Partha Saha (Saha Inst of Nucl Phys, Kolkata) identified a *cis*-acting motif in 5' UTR of δ -Tubulin transcript which is important for regulation of gene translation. Purusharth Rajyaguru (IISc, Bengaluru) discussed some of his recent findings on mechanisms of translation repression of different RGG-motif proteins and the regulation of their function by signal transduction pathways. Rakesh S. Laishram (RGCB, Thiruvananthapuram) talked about polyadenylation in eukaryotic transcripts through polymerases: PAP- α and STAR-PAP, and showed that STAR-PAP mediated polyadenylation of Kiss1 or CDH1 causes metastasis in breast cancer as well as regulate cardiac hypertrophy together with RBM10. Naresh Babu V. Sepuri (Univ of Hyderabad,

Hyderabad) showed that a GTP binding protein and a GTP/GDP exchanges factor together with ABRA forms a novel GTPase cycle that operates at the outer membrane to regulate the import of cytosolic tRNAs into mitochondria.

There was a special session on short talks by students where Anand Guha Majumdar, Sai Chaitanya Chiliveri, Abhinav Mittal, Satya Brata Rout, Komal Ishwar Pawar, Shreya Ayub, Shruti Bhargava, Dhiviya Vedagiri, Mukulika Ray, Poonam Pandey, Abhirami Vishwanathan and Poonam Dhillon made presentations on diverse topics. While all the student talks were highly appreciated by all participants, Mainak Bose (IICB, Kolkata) won the best oral presentation award for his presentation relating to discovery of an additional layer of post-transcriptional regulation of gene expression to maintain requisite levels of mature miRNA. Amongst the posters presented during the meeting, Ravi Kumar (IISER, Kolkata) and Kiran Bala (TSHTI, Faridabad) won the best poster awards.

The participation of large numbers of younger researchers and students was the highlight of the meeting, which assured that the future of RNA biology would be bright in the country. A comprehensive directory of Indian RNA Biologists was prepared as a part of the abstract book. The meeting was supported by DBT-Wellcome-Trust India Alliance, DBT, DBT-CEIB-2 grant, DST and various Biotech and Instrumentation companies.