A KJELDGAARD LECTURE

Thursday 28 April 2016 at 13:15
1632-201 AIAS auditorium
Same location for the PhD session

Axel Brennicke
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Germany

RNA editing in plant organelles

In mitochondria and chloroplasts of nearly all land plants, RNA editing alters individual nucleotide identities from C to U in most mRNAs. The about 400 mitochondrial and about 35 plastid sites are distinguished by E class PPR (pentatricopeptide repeat) proteins, of which 200 to 1000 are encoded in the nuclear genomes. These address the target RNA sequence by specific interactions between the PPR elements and the nucleotide in the mooring sequence. However, the precise determinants of how PPR proteins recognize their target RNA editing sites, still need to be worked out in detail. The enzymatic activity catalyzing the deamination or transamination step of the C to U editing may reside in the C-terminal extensions found in some of the E domain containing PPR proteins or may be provided by an as yet unknown enzyme. Connecting the PPR protein attached to the RNA with either enzyme structure may be mediated by the small group of MORF proteins. The MORF proteins are required for the RNA editing process in plant organelles in addition to the E domain containing PPR proteins. Interaction studies show that MORF proteins can connect with each other and in addition can bind to the PPR proteins. I will introduce this post-transcriptional RNA editing process which alters the primary RNA derived from the genetic information to produce a protein different from the one predicted from the genomic DNA. Also, I will present progress made recently towards a better understanding of the players involved in this at first glance senseless posttranscriptional alteration of the genomic information package.

Host: Ian Max Møller, Crop Genetics and Biotechnology,
Department of Molecular Biology and Genetics, Aarhus University

The lecture will be followed by a chalk-board session for PhD students

The Kjeldgaard Lecture Series is organised by
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