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VABILO NA PREGLOV KOLOKVIJ / INVITATION TO THE PREGL COLLOQUIUM

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How can ALU elements generate new exons in human transcripts? / Kako lahko elementi ALU tvorijo nove eksone v človeških transkriptih?

Četrtek / Thursday, 22. 12. 2011, ob / at 16:00

Velika predavalnica Kemijskega inštituta / Lecture Hall at the National Institute of Chemistry; Hajdrihova 19, Ljubljana

Approximately a half of the human genome is composed of mobile genetic elements. These elements can copy themselves and move around in the genome. The most common of these are ALU elements (ALUs), which originated during primate evolution. ALUs that became inserted into our genes are the main source of human-specific exons. Interestingly, when inserted in the antisense orientation, ALUs contain a binding site for U2AF65, a protein that initiates splicing of exons. Using genome-wide iCLIP experiments, we found that splicing of ALUs is suppressed by heterogeneous nuclear ribonucleoprotein C (hnRNP C), which competes with U2AF65 for the same binding site. Using computational and experimental approaches, we show that mutations in ALUs can create new exons by decreasing the capacity of hnRNP C to compete with U2AF65. I will present experiments where we demonstrate the importance of this phenomenon for disease and evolution.

Vljudno vabljeni! / Kindly invited!

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