Current trends in Biomedicine

Chromatin Domains and Insulators

2009 Workshops

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Universidad Internacional de Andalucía

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Scope

During the past years a number of genomes from different species, including various vertebrates and, among them, several mammalian species, have been completely sequenced. The use of powerful bioinformatics approaches has allowed the identification of evolutionary conserved sequences that spread well beyond the coding regions and, thus, include regulatory elements that appear to transduce relevant functional and/or structural constraints that have been preserved in different species, presumably originating in the genome of a common ancestor.

Boundaries or insulators are a specific type of regulatory elements, first discovered in *Drosophila* and yeast and later shown to be present in vertebrate genomes. These elements are characterised as possessing at least one of the following two features: to act as blockers, thereby preventing the communication and interaction between distal enhancers and proximal promoters; or to act as barriers, thereby preventing the spreading of negative heterochromatic effects originating in the chromosome that could compromise the expression of neighbouring loci. To date, several types of boundary elements have been identified. They share a common function but appear to be unrelated at the structural level therefore suggesting that, throughout the evolution, the system has been using different mechanisms that have been adapted to suit the requirements of an insulator, that is: protecting a set of sequences from surrounding loci and thus allowing the internal regulatory elements to control the gene and avoiding other distal elements to alter the pattern of expression.

This workshop on "chromatin domains and boundaries" will address and discuss the most updated knowledge of how chromatin is organised in the eukaryotic nucleus and what is the role of insulators in this process. World-wide recognised and leading scientists in the field will discuss the different aspects in which this topic has been addressed in the recent literature. The workshop will cover from general descriptions of boundaries in vertebrate and invertebrate genomes, to more specific roles of boundaries in nuclear or cellular processes.

Format of the Workshop

The workshop will bring together 17 speakers and a maximum of 50 participants (including speakers). The scientific programme will start in the morning of Monday, November 9th, and will end around noon on Wednesday, November 11th. Ample time for informal discussion will be reserved. Participants will be invited to present a poster.

Venue of the Workshop

The workshop will be held in Baeza, at the "Sede Antonio Machado", a XVII century building turned into a Conference Centre of the Universidad Internacional de Andalucía (UNIA). This Seat includes a recently restored residence, where participants will be accommodated. Baeza is a World Historic Heritage town, renowned for its Renaissance and Gothic buildings.

Organized by:

Víctor G. Corces. Emory University. Atlanta, USA.

Lluís Montoliu. Centro Nacional de Biotecnología (CNB-CSIC). Madrid, Spain.

Félix Recillas-Targa. Universidad Nacional Autónoma de México. México DF, Mexico.

Speakers

Giacomo Cavalli. Chromatin and Cell Biology Lab, Institute of Human Genetics, CNRS. Montpellier, France.

Víctor G. Corces. Department of Biology, Emory University. Atlanta, GA, USA.

Ann Dean. Laboratory of Cellular and Developmental Biology, National Institute of Diabetes and Digestive and Kidney Diseases, NIH. Bethesda, MD, USA.

David W. Emery. Division of Medical Genetics, Department of Medicine, University of Washington. Seattle, WA, USA.

Ann J. Feeney. Department of Immunogy and Miccrobial Science, The Scripps Research Institute. La Jolla, CA, USA.

Gary Felsenfeld. Laboratory of Molecular Biology, National Institute of Diabetes and Digestive and Kidney Diseases, NIH. Bethesda, MD, USA.

Pavel Georgiev. Department of the Control of Genetic Processes, Institute of Gene Biology, Russian Academy of Sciences. Moscow, Russia.

José Luis Gómez-Skarmeta. Centro Andaluz de Biología del Desarrollo (CABD), CSIC-Universidad Pablo de Olavide. Sevilla, Spain.

Roderic Guigó. Bioinformatics and Genomics Program, Centre de Regulació Genòmica, Universitat Pompeu Fabra. Barcelona, Spain.

Rohinton T. Kamakaka. Department of MCD Biology, Sinsheimer Labs, University of California, Santa Cruz. Santa Cruz, CA, USA.

Elena Klenova. Department of Biological Sciences, University of Essex. Essex, UK.

Victoria V. Lunyak. Buck Institute for Age Research. Novato, CA, USA.

Marc A. Marti-Renom. Structural Genomics Unit, Bioinformatics & Genomics Department, Centro de Investigación Príncipe Felipe (CIPF). Valencia, Spain.

Lluís Montoliu. Department of Molecular and Cellular Biology, Centro Nacional de Biotecnología (CNB-CSIC). Madrid, Spain.

Rolf Ohlsson. Department of Microbiology, Tumor and Cell Biology, Karolinska Institute. Stockholm, Sweden.

Félix Recillas-Targa. Instituto de Fisiología Celular, Departamento de Genética Molecular, Universidad Nacional Autónoma de México. México DF, Mexico.

Bing Ren. Ludwig Institute for Cancer Research, Department of Cellular and Molecular Medicine, University of California San Diego School of Medicine. La Jolla, CA, USA.

Baeza, Spain
9th-11th November 2009

Deadline:

11th September 2009

Venue:

Sede Antonio Machado
Universidad Internacional
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Workshop coordinator:

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More information and application:

http://www.unia.es/biomedicine