

Functional organization of eukaryotic genomes in cell nuclei: conserved organizational principles and gene expression in the context of genome architecture

Initiative: Nachwuchsgruppen an Universitäten (beendet)

Bewilligung: 11.09.2006

Laufzeit: 1 Jahre

Mammalian genomes within cell nuclei display a defined functional organization that is closely related to the banded structure of mitotic chromosomes. The group will further investigate the question how the structural organization of genomes in cell nuclei is related to the regulation of functional processes like replication or transcription. Using an interdisciplinary approach involving high resolution light microscopy and image analysis, as well as collaborations with developmental and plant biologists and physicists the work will concentrate on questions like: Are there basic principles of mammalian genome organization that are established in the early embryo and inherited to all cells of the organism during ontogenesis? Do only mammals display this specific form of genome organization or are there conserved principles that might serve to efficiently organize complex eukaryotic genomes? Does the specific functional genome organization help to coordinate gene expression and how are individual genes regulated in this context?

Projektbeteiligte

Priv.-Doz. Dr. Daniele Zink Universität München Biozentrum Department Biologie II Martinsried