LS09-013 - Molecular function of CTCF and cohesins in regulating nuclear organization and gene activity

Zusammenfassung

The mammalian genome is spatially organized into chromatin domains, which play an important role in the regulation of gene expression and the recombination of antigen receptor loci. Long-range chromatin interactions are thought to be regulated by the insulator factor CTCF and the cohesin complex, which bind to the same sites in the mammalian genome. Here, the chromatin-organizing function of CTCF and cohesins will be investigated in different human and mouse cell types by loss-of-function analysis, genome-wide mapping of interacting CTCF/cohesin-binding sites and identification of DNA-binding factors that specify the interaction of these sites at the base of chromatin loops. This project will not only elucidate the molecular mechanisms by which CTCF and cohesins organize local chromatin during normal development and lymphopoiesis, but will also provide important insight into human disease, which is caused by cohesin dysfunction such as in the Cornelia de Lange syndrome.

Schlagworte:
chromatin looping, gene expression, antigen receptor recombination, CTCF, cohesins

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Weiterführende Links zu den beteiligten Personen und zum Projekt finden Sie unter
https://www.wwtf.at/funding/programmes/ls/LS09-013/