Skoltech
Skolkovo Institute of Science and Technology

When: June 10, 2 pm
Where: Room E-B4-3007

Seminar:

HIV LATENCY and HOST CHROMATIN

Speaker:

Guillaume Filion
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Barcelona, Spain

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ABSTRACT

The main obstacle to developing an HIV cure is viral latency: in some cases, the virus becomes dormant and can awaken at a later time, causing all the AIDS symptoms to reappear. We developed the B-HIVE technology (Barcoded HIV Ensembles) to tag HIV-1 with random DNA barcodes in order to follow the fate of the infection in a population of T cells. Overall, the B-HIVE technology has showed that HIV-1 is sensitive to position effects in Jurkat T cells, in the sense that it is expressed at higher level when inserted in proximity of endogenous regulatory elements. Using Hi-C, we showed that HIV-1 responds not only to the chromatin but also to the local conformation of the genome.

However, the effect is relatively small in comparison to the ~1000-fold variations between different infections. Therefore, other factors must also be taken into consideration in order to understand why HIV is active or latent.

BIOGRAPHY

Guillaume Filion studied molecular biology at the Curie Institute, Paris, graduating in 2007 (supervisor Pierre-Antoine Defossez). He discovered and studied new transcription factors that specifically bind methylated CpGs. During his postdoc at the Netherlands Cancer Institute in Amsterdam (supervisor Bas van Steensel), he analyzed chromatin data and found that Drosophila chromatin consists of five basic types. Since 2012 he has a faculty position at the Center for Genomic Regulation (CRG, Barcelona). He develops new technologies to study the effect of the chromatin context on transcription and repair.

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