

## Characterizing the 3D organization of holocentric chromosomes in *Bombyx mori*

The centromere's primary role is to ensure chromosome segregation by catalyzing the formation of the kinetochore complex to promote attachment between spindle fibers and chromosomes during cellular division. In addition to this well-known function, centromeres are classic examples of chromosome regions known to impact the regulation and spatial architecture of the surrounding genome (Muller, Gil Jr and Drinnenberg, 2019). Microscopy studies and Chromosome Conformation Capture experiments (3C, Hi-C) have shown that centromeres cluster together in the nucleus of some organisms and they also act as strong topological barriers preventing specific types of contacts between the two chromosomal arms. These observations have mostly been made by studying monocentric organisms, or organisms that have chromosomes with a single centromere. Very little is known about the effect of centromeres on genome architecture in holocentric organisms, or organisms that have centromeres distributed along the entire length of their chromosomes. Still, a detailed characterization of this interplay using next generation sequencing approaches has been hindered in most model organisms, including humans, due to the repetitive nature of their centromeres. Our data revealing a non-repetitive nature of *Bombyx mori* centromeres offers a unique opportunity to circumvent the challenges usually presented when studying centromeres.

**Auteurs principaux:** MULLER, Heloise (CNRS UMR3664 - Institut Curie); GIL JR, Jose (Institut Curie - UMR3664); Dr DRINNENBERG, Ines (Institut Curie, CNRS - UMR3664)

**Orateur:** GIL JR, Jose (Institut Curie - UMR3664)