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The histone tail domains are critical in cell proliferation

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During cell proliferation, the genetic material and the epigenetic information need to propagate through daughter cells. A key step for these inheritances is the replication occurring in S-phase of the cell cycle. At this stage of the cell cycle, replication-coupled chromatin assembly of parental and newly synthesized histones is required for regaining the initial chromatin structure. Our group has developed a novel methodology to examine the function of the tail domains of histones in taking advantage of unique properties of the *Physarum polycephalum* model system. We showed that depending upon the histone complexes the tail domains did not present the same requirements. Indeed, while the tail domains of H2A/H2B are dispensable for nuclear import but required for chromatin assembly, the H3/H4 tail domains are needed for both nuclear import and chromatin assembly. We demonstrated that H3/H4 tail requirement is associated with histone acetylation. These results led us to propose a model showing the importance of well-conserved replication-dependent diacetylation of H4.

Biography

Christophe Thiriet has completed his Ph.D. studies on chromatin in France and joined the Jeffrey J. Hayes Lab at the University of Rochester for his Postdoctoral training on chromatin biochemistry. He has a permanent position at CNRS and is the group head of the team 'Epigenetics: Proliferation and differentiation' at the University of Nantes (France).

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