

Celine Walmacq



Current Position: Postdoctoral fellow in the laboratory of Dr. Mikhail Kashlev at the National Cancer Institute (NCI-NIH) in Frederick, Maryland

Education: Ph.D. in Biochemistry and Molecular Biophysics (2005) from the University of Orleans in France

Non-scientific Interests: Piano, photography, hiking

When I joined the laboratory of Dr. Rachid Rahmouni at the University of Orleans in 2001 as a graduate student, I became interested in the mechanisms that regulate prokaryotic transcription. With my co-advisor, Dr. Marc Boudvillain, I investigated the RNA-DNA helicase activity of the transcription termination factor Rho. During the final year of my Ph.D. studies, I met Dr. Mikhail Kashlev and became excited about his work on yeast RNA polymerase II. I later joined his lab at the National Cancer Institute as a postdoctoral fellow to continue research on eukaryotic transcription.

In the present study, we identify a novel transcription fidelity mechanism involving the peripheral Rpb9 subunit of yeast RNA Polymerase II. Remarkably, deletion of Rpb9 enhances NTP misincorporation by Pol II and promotes NTPs sequestration in the polymerase active center. We propose a model in which the Rpb9 subunit controls transcription fidelity by delaying the closure of the trigger loop on the incoming NTP via interaction between the C-terminal domain of Rpb9 and the trigger loop. Our findings reveal a mechanism for control of transcription fidelity by protein factors located, like Rpb9, at a large distance from the active center of Pol II. The details of our findings are reported in this paper.

Read Dr. Walmacq's article entitled: Rpb9 Subunit Controls Transcription Fidelity by Delaying NTP Sequestration in RNA Polymerase II

<http://www.jbc.org/cgi/content/full/284/29/19601>