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Title:	Yeast PAF1 complex counters the pol III accumulation and replication stress on the tRNA genes
Authors:	Sandhu, K.S. (/jspui/browse?type=author&value=Sandhu%2C+K.S.)
Keywords:	pol III PAF1C Genotoxin
Issue Date:	2019
Publisher:	Nature
Citation:	Scientific Reports, 9(1).
Abstract:	The RNA polymerase (pol) III transcribes mostly short, house-keeping genes, which produce stable, non-coding RNAs. The tRNAs genes, highly transcribed by pol III in vivo are known replication fork barriers. One of the transcription factors, the PAF1C (RNA polymerase II associated factor 1 complex) is reported to associate with pol I and pol II and influence their transcription. We found low level PAF1C occupancy on the yeast pol III-transcribed genes, which is not correlated with nucleosome positions, pol III occupancy and transcription. PAF1C interacts with the pol III transcription complex and causes pol III loss from the genes under replication stress. Genotoxin exposure causes pol III but not Paf1 loss from the genes. In comparison, Paf1 deletion leads to increased occupancy of pol III, γ -H2A and DNA pol2 in gene-specific manner. Paf1 restricts the accumulation of pol III by influencing the pol III pause on the genes, which reduces the pol III barrier to the replication fork progression.
Description:	Only IISERM authors are available in the record.
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