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Article of Significant Interest in This Issue

Selective Kinase Inhibition Reveals that Bur1 (Cdk9) Phosphorylates the Rpb1 Linker *In Vivo*

A series of cyclin-dependent kinases drive the exchange of factors bound to RNA polymerase II during transcription initiation, elongation, and termination. Chun et al. (e00602-18) used chemical genetics to selectively inhibit Cdk7/Kin28, Cdk9/Bur1, or Cdk12/Ctk1 and characterized the effects on phosphorylation of the Rpb1 C-terminal domain (CTD). They showed that Cdk7/Kin28 activity on CTD serine 5 is required for subsequent activity of Cdk12/Ctk1 on CTD serine 2, explaining the sequential nature of these phosphorylations. They also demonstrated that Cdk9/Bur1 is responsible for phosphorylating the Rpb1 linker, which both connects CTD to the body of the polymerase and interacts with elongation factor Spt6. These findings provide new insight into the regulation of RNA polymerase II activity.

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