

**P063** The role of TFIIB phosphorylation in transcription regulation

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The general transcription factor TFIIB plays a critical role in preinitiation complex assembly, providing a bridge between promoter-bound TFIID and RNA polymerase II (RNAP II). The N-terminal B-finger of TFIIB is a highly conserved domain that engages in an intramolecular interaction with the TFIIB C-terminus. Within a preinitiation complex, the B-finger projects into the active site of RNAP II. How the B-finger influences the RNAP II catalytic centre is not clear, although B-finger mutations can modulate the selection of the transcription start site. We have found that TFIIB can be phosphorylated at residue Ser65, within the B-finger region. Ser65 mutant derivatives of TFIIB fail to support transcription in living cells. Chromatin immunoprecipitation analyses revealed that TFIIB ser65 mutant derivatives are able to form a complex at endogenous promoters and further, are able to support the recruitment of RNAP II. In cells expressing wild type TFIIB, transcribing RNAPII can be detected within the coding region, however, in cells expressing a TFIIB ser65 mutant derivative, RNAP II failed to associate with the coding region. Phosphorylation of TFIIB residue ser65 is therefore likely to be critical in the transition from a closed preinitiation complex to the release of RNAP II from the promoter during the transcription cycle.