

# Transcription directed by human core promoters with a HomolD box sequence requires DDB1, RECQL and RNA polymerase II machinery

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TATA box is the most studied core promoter element and has a well-described transcription mechanism. However, most metazoan promoters lack TATA box and contain other core promoter elements. One of such elements is HomolD box, which was first described in promoters of ribosomal protein genes in *Schizosaccharomyces pombe*, and studies performed in this model showed that transcription directed by HomolD box is dependent on RNAPII machinery, and the HomolD-binding protein was Rrn7, a component of RNAPI core factor. Nevertheless, the mechanisms that underlie HomolD-dependent transcription are still unknown. The purpose of this study is to determine the mechanism of transcription directed by human HomolD box. By stepwise purification through different ion exchange columns and affinity chromatography, we purified two proteins: DDB1 and RECQL (DNA damage-binding protein 1 and ATP-dependent DNA helicase Q1 respectively). These proteins showed specific HomolD-binding activity and were required fo