
Preface

The effort to sequence the human genome is now moving toward a conclusion. As all of the protein coding sequences are described, an increasing emphasis will be placed on understanding gene function and regulation. One important aspect of this analysis is the study of how transcription factors regulate transcriptional initiation by RNA polymerase II, which is responsible for transcribing nuclear genes encoding messenger RNAs. The initiation of Class II transcription is dependent upon transcription factors binding to DNA elements that include the core or basal promoter elements, proximal promoter elements, and distal enhancer elements. General initiation factors are involved in positioning RNA polymerase II on the core promoter, but the complex interaction of these proteins and transcriptional activators binding to DNA elements outside the core promoter regulate the rate of transcriptional initiation. This initiation process appears to be a crucial step in the modulation of mRNA levels in response to developmental and environmental signals.

Transcription Factor Protocols provides step-by-step procedures for key techniques that have been developed to study DNA sequences and the protein factors that regulate the transcription of protein encoding genes. This volume is aimed at providing researchers in the field with the well-detailed protocols that have been the hallmark of previous volumes of the *Methods in Molecular Biology*[™] series. I hope that the reader, whether skilled in the area or new to the field, will be encouraged to use this volume and benefit from the excellent notes and tips that the contributors have put into their protocols.

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<http://www.springer.com/978-0-89603-573-7>

Transcription Factor Protocols

Tymms, M.J. (Ed.)

2000, X, 306 p., Hardcover

ISBN: 978-0-89603-573-7

A product of Humana Press