Special Issue

Protein-DNA Interactions: From Biophysics to Genomics

Message from the Guest Editor

Protein-DNA interactions are vital for gene regulation, replication, and repair. These essential cellular processes result from a complex action of systems involving various proteins such as transcription factors and DNA repair/modifying enzymes. Many mechanistic aspects of these proteins should be delineated to understand how genes are regulated and maintained. Such knowledge is important, particularly because many human diseases are related to abnormalities in protein-DNA interactions. Adverse effects may be caused by mutations in the genes and cis-regulatory elements, by alteration in post-translational modifications of transcription factors and DNA repair/modifying enzymes, and by epigenetic modifications of DNA and histones. In many cases, these are related to each other in complex networks of molecular interplays. This special issue is intended for providing a forum to discuss protein-DNA interactions from broader perspectives, ranging from an atomic/molecular level to a cellular/organismic level. Review articles by experts in the field are particularly welcomed.

Guest Editor

Prof. Dr. Junji Iwahara

Department of Biochemistry and Molecular Biology, Sealy Center for Structural Biology and Molecular Biophyiscs, University of Texas Medical Branch, Galveston, Texas, United States

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Molecules
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
molecules@mdpi.com

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Editor-in-Chief

Prof. Dr. Thomas J. Schmidt
Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Corrensstrasse 48, D-48149 Münster, Germany

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