Drug-DNA interaction protocols, 2nd ed.
Keith R. Fox (Ed)
Humana press, Totowa, NJ (USA)
Series: Springer Protocols
Methods in Molecular Biology, Volume 613, 2010
Pages: 311; $ 139.00
ISBN: 978-1-60327-417-3

In a paper published by Jurgen Drews on the March 17, 2000 issue of *Science* a figure reporting molecular targets of drug therapy, classified according to biochemical criteria, showed that only 2% of drugs were directed to DNA. Presently, the number of DNA targeting molecules, primarily for Cancer treatment, is increasing along with the number of applications in medicine. The design of such molecules relies on the quantitative assessment of the binding strength of small molecules to DNA. For this purpose, various techniques suitable to work in the subnanomolar range have been developed. Sensitivity is indeed important to study DNA binding at clinical rather than supraclinical concentrations and also at cellular level. In addition, a good sensitivity makes possible the study of the interaction of the molecules of interest not only with free DNA but also with nucleosomal DNA, which takes into account its physiological binding to proteins. The volume "Drug-DNA interaction protocols", second edition, provides an updated survey of the techniques developed and used to perform this task. The various chapters go from the practical description of the experimental technique, like a user's manual, to the critical analysis of the data that can be obtained by a certain technique. It is always difficult to judge a methodological book. The experienced user of any of the described techniques may complain about the lack of some details she/he perceives as fundamental in her/his experience. On the other hand the reader naive to the techniques illustrated by the book may find them too detailed or difficult to follow when not having a basic understanding of the usual procedure or instrument to understand the different passages. In this regard, the book would have benefited from a problem-solving approach guiding the reader to the use of the best technique suitable for the problem/analysis she/he has. A more extensive use of pictures or diagrams of the instruments used, as done in some chapters, would have made it easier for the reader to take advantage of all the suggestions provided by this book. On the other hand, the blend between theoretical backgrounds and practical aspects has been set at a reasonable point almost in each chapter. In summary, the book is useful for those interested in re-analysing the drugs already available, which mechanism has not been fully elucidated yet, as well as for those interested in the design and development of novel DNA targeted drugs.

Stefano Govoni
Dept. Experimental and Applied Phamacology, University of Pavia