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## Preface

# Anticancer and antiviral agents Including Therapy Monitoring and Diagnostic Marker Aspects

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This issue includes the essentials aspects and the practical analytical approaches and the therapy monitoring of the anticancer and antiviral drugs and agents. The analytical qualitative and quantitative experimental procedures, here described, are applied to pharmaceutical knowledge as well as clinical monitoring. The therapeutic drug monitoring (TDM) certainly represents one of the relevant topics of the clinical biochemistry laboratory, in fact a suitable TMD is of great help in the outcome and follow up of a therapy, moreover it also helps in deciding on the more suitable drug. The TDM is fundamental and requires laboratory measurements directed to assess drug preparation purity and conformity and also its pharmacokinetic together with the analysis of its metabolites when disease treatment is carried out. Moreover the tumor markers present in the circulation or excreted with urine have been examined.

The pharmacokinetics are undoubtedly of great importance when the clinical laboratory point of view, particularly the toxicity effects, is taken into account. The analytical approaches therefore request also the validity of specimen collection followed by timely and reliable determination of drug concentration in the body fluids. The experimental analytical procedures from the sample preparation, separation and detection are discussed giving a great quantity of practical details.

TMD possesses a strong traditional linkage between analysis and separation methods with clinical laboratory; furthermore the rapid evolution of the therapeutic agents requires a suitable TMD and consequently a continuous update of the analysis methods. These reasons have stimulated this issue

which also represents a connection between the clinical biochemistry and the chemical analysis laboratories. This last aspect is furthermore reinforced by the fact that few reviews treat and discuss the measurement methods carried out with a diagnostic aim. In fact polyamines, cysteine and indole derivatives together with PSA (prostate specific antigen) are here reviewed.

A profile of the fundamental analytical procedures is here highlighted. Modern experimental medicine and also traditional Chinese medicine and the putative possessing anti-neoplastic natural agents, present in vegetables and fruits, have also been taken into account. Antiviral and anticancer drugs here outlined comprehend enzyme inhibitors, camptothecin, anthracyclines, anthraquinone, cyclophosphamide, finasteride and related compounds. Furthermore acyclovir, antiviral phosphorous-containing and nucleoside analogue drugs are also discussed.

The present collection of reviews certainly does not comprehend all possible drugs and related compounds from the analytical, pharmaceutical as well as the clinical biochemistry point of view, but it would like to update and introduce new information and also stimulate further researches in the previously named aspects.

The readers of this volume are strongly invited to send their comments and suggestions depending on the discipline they are involved in.

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