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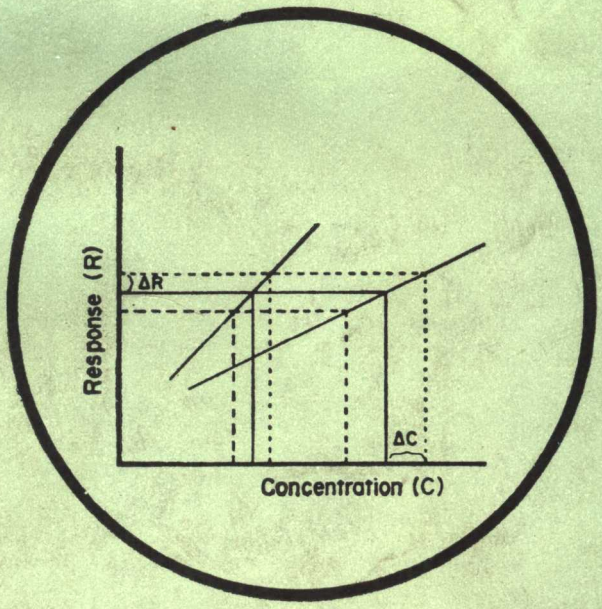

PRACTICE AND THEORY OF ENZYME IMMUNOASSAYS

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Preface

Enzyme immunoassays have become solidly entrenched in many fields. Unfortunately, they are often performed in a haphazard way. This is not altogether surprising since this powerful assay technology transcends several discipline boundaries and is extensively applied as a tool in fields other than enzymology and immunology. The fast flow of new ideas and assay designs and the rapid progress in the application of this technique may be reasons why comprehensive reviews on this subject are still missing.

It is attempted in this book to provide both the basic understanding of these techniques and a practical guideline for the choice and experimental details of enzyme immunoassays. Another goal of this review has been to be sufficiently provocative to leave the very diverse group of veteran or would-be assayists (clinicians, applied and basic scientists) with a healthy distrust of the, frequently misleading, accepted wisdom abounding in EIA-logy. I hope that this effort will be useful since researchers in the life sciences are frequently concerned with the detection or discrimination of minute amounts of resembling compounds, not seldom at the limit of detectability.

Intricate interactions among different assay parameters (sensitivity, detectability, specificity, etc.) and differences in their concepts have been emphasized and uniformly used throughout the text to avoid the confusion reigning in the literature. This attempt to prevent confusion necessitated the introduction of a few new terms, which I hope, will be inoffensive.

Comments or suggestions from readers are invited.

Dedication

To the memory of my mother and my father-in-law who both passed away while this book was in press.

To Trics, Andrew, Janice, and our relatives in Elden, Utrecht, Raalte, Elst, Deventer, Alphen a/d Rijn, and Leiden.

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Among my other, previous colleagues at the Université de Montréal, I am thankful to Drs. P. Crine and S. Garzon for reviewing various chapters. I wish also to thank Drs. Andrew and Jennifer Scott for the use of their computer and Dr. P. Viens and his co-workers, in particular Andrée l'Ecuyer, for their keyrole in the word-processing of the manuscript.

Finally, I wish to express my gratitude to Dr. R. Ruppanner, chairman of the 'Centre de recherche en médecine comparée' at the Institut Armand-Frappier. I am greatly indebted to Prof. E. Kurstak, Director of the Comparative Virology Research Group of the Faculty of Medicine of the Université de Montréal, for his criticism and encouragement in the preparation of this volume. I have been most fortunate to have been associated with Professor Kurstak and his Research Group from the beginning of the development of enzyme immunoassays, first as a Ph.D. student and then for some time as a member of this Group. I have thereby benefited from grants to Professor Kurstak's projects from the Medical Research Council of Canada, from the National Sciences and Engineering Research Council of Canada, and from the National Cancer Institute of Canada. I thank the Editors of this series and the editorial staff of Elsevier Science Publishers (Biomedical Division) for their patience and constructive suggestions.

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