METHODS OF PROTEIN SEPARATION

Volume 2

BIOLOGICAL SEPARATIONS

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Massachusetts Institute of Technology
Cambridge, Massachusetts

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PREFACE

This open-end treatise on methods concerning protein separation had its beginning in an American Chemical Society symposium entitled "Contemporary Protein Separation Methods" which was held in Atlantic City, New Jersey in September 1974. The purpose of the symposium—and subsequently of the present work—was to review the available modern techniques and underlying principles for achieving one of the very important tasks of experimental biology, namely the separation and characterization of proteins present in complex biological mixtures. Physicochemical characterization was covered only as related to the parent method of fractionation and therefore involved mostly mass transport processes. Additionally, the presentation of methods for gaining insight into complex interacting protein profiles was considered of paramount importance in the interpretation of separation patterns. Finally, specific categories of proteins (e.g., chemically modified, deriving from a specific tissue, conjugated to different moieties, etc.) require meticulous trial and selection and/or modification of existing methodology to carry out the desired separation. In such cases, the gained experience provides valuable guidelines for further experimentation.

Although powerful techniques exist today for the separation and related physicochemical characterization of proteins, many biological fractionation problems require further innovations. It is hoped that the description in the present treatise of some of the available separation tools and their limitations will provide the necessary integrated background for new developments in this area.

Nicholas Catsimpoolas

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