

Molecular Interactions in Bioseparations

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*Molecular Interactions
in Bioseparations*

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Preface

Rapid advances in molecular biology have accelerated the production of a great number of protein-based therapeutic agents. The major cost in producing these proteins appears to be associated with their purification from the complex mixture of the crude extract. A major challenge to the protein biochemist and the biochemical engineer is the development of rapid, efficient, and cost-effective purification systems.

This volume presents state-of-the-art reviews of current methods used in the purification of biological macromolecules that are based on molecular interactions. Thus, the major emphasis is placed on affinity-related techniques. Part I provides a general introduction to affinity chromatography and includes a chapter describing an interesting new technique called "slalom chromatography" for DNA fractionations. Affinity chromatography using molecules of biological origin as the affinity ligand is covered in Part II. Part III describes the use of a special class of biomolecules, antibodies, as affinity ligands. Affinity chromatography with biomimetic ligands is discussed in Part IV. Newer concepts and their applications in bioseparation are presented in Part V. Part VI covers affinity-related techniques such as affinity-based extracorporeal shunts, affinity electrophoresis, affinity precipitation, and affinity extraction.

I would like to express my sincere thanks to all the authors, who are recognized experts in their respective fields, for their cooperation and contributions. I thank the editorial staff of Plenum Press for their professionalism, and Mary Phillips Born, Senior Editor, for her encouragement. The support of my family (Ping and Peilin) made it possible to complete editing this book.

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General Introduction

An Overview

José Fariña and Pedro Carrascosa

1. INTRODUCTION

This is a special issue of the *Journal of Nonverbal Behavior*, a journal that has been publishing research on nonverbal communication since 1977. The journal is published by the American Psychological Association, and is one of the leading journals in the field of nonverbal communication. The journal is published quarterly, and is available in both print and electronic formats.

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