

Advances in PROTEIN CHEMISTRY and STRUCTURAL BIOLOGY

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Proteomics in Biomedicine and Pharmacology

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In the last decade proteomics emerged as a very valuable tool in biomedical and pharmacological research. Different proteomic techniques have been employed in the screening for biomarkers for different disorders and diseases, in understanding molecular mechanisms underlying pathological alterations in humans, in studying protein structures, design of potential therapeutics, etc. Considering the wide application of proteomics in biomedicine and pharmacology and the increasing number of specialists from different fields employing proteomic techniques, we focused this volume of the *Advances in Protein Chemistry and Structural Biology* on *Proteomics in Biomedicine and Pharmacology*. This volume reviews the main classical gel-based methods and the advances of gel-free quantitative proteomic techniques and their applications in elucidation of host-bacteria interactions and design of treatment for a number of infectious diseases. In depth discussion on protein phosphorylation and glycosylation as one of the most common and the most complex post-translational modifications is presented. The use of different proteomic techniques in studying oral diseases, alterations in protein structure and design of personalised treatment, stem cells organelle proteomics research and subcellular proteomics, screening of protein-protein and protein-DNA interactions and its application in biomedicine are also detailed. Finally, the application of different proteomic techniques in diagnosis and treatment of psychiatric disorders such as major depression, suicidal behaviour, schizophrenia and Attention Deficit/Hyperactivity Disorder is discussed. The aim of this volume is to promote further proteomic-based studies in biomedicine and pharmacology in order to discover reliable tools for early diagnosis and treatment/management of different diseases and disorders.

Cover image: Proteomics workflow for application in host-pathogen experiments
(see Petriz and Franco)



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