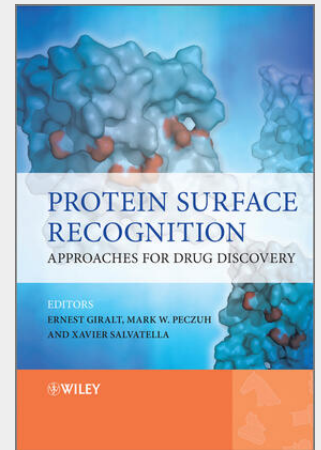


## Protein Surface Recognition

Approaches for Drug Discovery

A new perspective on the design of molecular therapeutics is emerging. This new strategy emphasizes the rational complementation of functionality along extended patches of a protein surface with the aim of inhibiting protein/protein interactions. The successful development of compounds able to inhibit these interactions offers a unique chance to selectively intervene in a large number of key cellular processes related to human disease. Protein Surface Recognition presents a detailed treatment of this strategy, with topics including: \* an extended survey of protein-protein interactions that are key players in human disease and biology and the potential for therapeutics derived from this new perspective \* the fundamental physical issues that surround protein-protein interactions that must be considered when designing ligands for protein surfaces \* examples of protein surface-small molecule interactions, including treatments of protein-natural product interactions, protein-interface peptides, and rational approaches to protein surface recognition from model to biological systems \* a survey of techniques that will be integral to the discovery of new small molecule protein surface binders, from high throughput synthesis and screening techniques to in silico and in vitro methods for the discovery of novel protein ligands. Protein Surface Recognition provides an intellectual "tool-kit" for investigators in medicinal and bioorganic chemistry looking to exploit this emerging paradigm in drug discovery.

Protein Surface Recognition: Approaches for Drug Discovery A new perspective on the design of molecular therapeutics is emerging. This new strategy emphasizes the rational complementation of functionality along extended patches of a protein surface with the aim of inhibiting protein-protein interactions (PPIs). The successful development of compounds able to inhibit these interactions offers a unique chance to selectively intervene in a large number of key cellular processes related to human disease. Protein Surface Recognition: Approaches for Drug Discovery presents a detailed treatment of this strategy. Starting with a survey of PPIs that are key players in human disease and biology and the potential for therapeutics derived from this new perspective, the book then examines the fundamental physical issues that surround protein-protein interactions that must be considered when designing ligands for protein surfaces. Examples of protein surface-small molecule interactions, including treatments of protein-natural product interactions, protein-interface peptides, and rational approaches to protein surface recognition are given. Finally, the book surveys techniques that will be integral to the discovery of new small molecule protein surface binders, from high throughput synthesis and screening techniques to in silico and in vitro methods for the discovery of novel protein ligands, and ends with two extended case studies - inhibitors of the MDM2-p53 PPI, and the discovery of potent LFA-1 antagonists. Protein Surface Recognition: Approaches for Drug Discovery provides an intellectual 'tool-kit' for investigators in medicinal and bioorganic chemistry looking to exploit this emerging paradigm in drug discovery.



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