
Preface

Superantigen Protocols assembles experimental protocols that have proved useful for the study of superantigens. These techniques will allow researchers from various areas of cell biology, microbiology, immunology, biochemistry, and molecular biology to assess the physical characteristics and biological effects of well-known superantigens as well as of putative substances that might have superantigenic activities, and to explore therapies for superantigen-induced effects.

Microbial exotoxins have been studied for decades as virulence factors because of their pathogenic effects. The term “superantigen” was coined a decade ago for some of these molecules because of their potent T-cell stimulatory activities. In recent years, advances in molecular biology provide recombinant as well as natural superantigens in highly purified form for physical characterization. Superantigens are now used extensively as tools to study interactions between receptors on cells of the immune system as they bind to major histocompatibility complex class II molecules on antigen-presenting cells and V_β regions of T-cell receptors. The biological effects that result from these interactions are studied both in vitro and in vivo. The intent of this book is, therefore, to bring together up-to-date techniques developed by experts in the field of biochemistry, immunology, and molecular biology for the study of superantigens.

Superantigen Protocols begins with an overview of the field to provide background information on the various classes of superantigens and their structure. This summary is followed by a group of chapters on methods to define binding and other physical interactions of superantigens with their cellular receptors. Finally, techniques used in the study of the biological effects of superantigens are covered to guide researchers in the assessment of cellular activities and molecules induced by superantigens. In addition, approaches to the study and the development of therapeutics in suppressing the superantigen-induced effects are presented.

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