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The revolution in biology of the past two to three decades has led to a dramatic increase in our understanding of immune processes. It is now recognized that the immune response represents the activity of an enormous web of interacting cells and humoral factors. Furthermore, the
importance of intracellular signalling in these processes is now appreciated as is the role in immune responses of cells, such as keratinocytes and endothelial cells (amongst others), not usually thought of as immunologically relevant. These insights have led both to major advances in the basic molecular and cellular biology of the immune response and also have important implications for clinical immunology. The purpose of this volume is to present the current understanding of physiologic mechanisms of immune regulation along with the impact of this knowledge on selected clinical questions. Reviewed within this volume are such topics as T- and B-cell tolerance (including neonatal tolerance, clonal anergy and the role of immune complexes in tolerance), clonal deletion, suppressor cells, mechanisms of immune privileged sites, and experimental models of tumor immunity. The possible utility of manipulating the immune response for therapeutic benefits is explored in contributions discussing oral tolerance, ultraviolet radiation and photosensitized effects on immunity, T-cell vaccination and regulation of immunity with T-cell epitopes. Thus, our understanding of the regulation of the immune response has advanced dramatically in recent years. Of perhaps greater importance, this work has led to new approaches for the understanding and treatment of disease. Hopefully, the reader will find the fascinating articles in this issue of Chemical Immunology to be informative, useful and stimulating.