

1. Record Nr.	UNINA9910788570503321
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Titolo	The quantal theory of immunity [[electronic resource]] : the molecular basis of autoimmunity and leukemia // Kendall A. Smith
Pubbl/distr/stampa	Singapore ; Hackensack, N.J., : World Scientific, 2010
ISBN	1-283-14368-2 9786613143686 981-4271-76-4
Descrizione fisica	1 online resource (200 p.)
Disciplina	616.079 616.97/8 616.978
Soggetti	Immune response Interleukin-2 T cells
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Acknowledgements; Prologue; Contents; Chapter 1 Introduction - The Evolution of Our Understanding of the Immune System; Chapter 2 Molecular Immunology; Chapter 3 The Problem - Understanding How Molecules Direct the Behavior of Cells Comprising the Immune System; Chapter 4 The Quantal Theory of Immunity; Chapter 5 The Variability of Cell Cycle Progression and the Competence and Progression Phases of the Cell Cycle; Chapter 6 The Quantal Nature of IL-2-Promoted T Cell Cycle Progression Chapter 7 The Molecular Basis for Quantal IL-2/IL-2R Signaling of Cell Cycle Progression - The IL-2/Receptor Interaction Chapter 8 The Molecular Basis for Quantal IL-2/IL-2R Signaling of Cell Cycle Progression - IL-2 and IL-2 Receptor Metabolism; Chapter 9 The Molecular Basis for Quantal IL-2/IL-2R Signaling of Cell Cycle Progression - IL-2 Receptor Signaling via the Jak/Stat Pathway; Chapter 10 The Molecular Basis for Quantal IL-2/IL-2R Signaling of Cell Cycle Progression - IL-2 Receptor Signaling via Phospho Chapter 11 The T Cell Antigen Receptor Complex and the Quantal

Regulation of the IL-2 and IL-2R GenesChapter 12 Digital Signaling via the T Cell Antigen Receptor Complex; Chapter 13 Negative Feedback Regulation of T Cell Antigen Receptor Complex Signaling - Attenuation of IL-2Gene Expression; Chapter 14 The Paradox of the IL-2 (-/-) Mouse; Chapter 15 The Scurfy Mouse; Chapter 16 Lymphopenia, Autoimmunity and the Regulatory T Cell (Treg); Chapter 17 Treg-mediated "Active Suppression" of T Cell Proliferation; Chapter 18 FOXP3, A Better ID-Tag for Tregs?; Chapter 19 Mice Versus Men Chapter 20 Active Versus Passive Suppression and IL-2 MetabolismChapter 21 FOXP3 Restricts But Does Not Suppress IL-2 Production; Chapter 22 Both the TCR and IL-2 Regulate FOXP3 Expression; Chapter 23 The Effects of FOXP3 Expression; Chapter 24 The Role of IL-2 in the Generation of Immune Responses In Vivo; Chapter 25 The Role of the IL-2r Chains in IL-2 Signaling, Consumption and Suppression of T Cell Proliferation; Chapter 26 T Cell Tissue-specific Autoimmunity; Chapter 27 Type 1 Diabetes Mellitus (T1DM), a Prototypic Genetic Autoimmune Disease with a Tie to IL-2 Chapter 28 The Pathogenesis of Leukemia - Loss of Normal Quantal Growth ControlEpilogue; Index

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#### Sommario/riassunto

This book explains how the immune system functions, namely, how individual cells of the immune system make the decision to respond or not to respond to foreign microbes and molecules, and how the critical molecules function to trigger the cellular reactions in an all-or-none (quantal) manner. To date, there has not been a complete description of the immune system and its cells and molecules, primarily because most of the information has accumulated only in the last 40 years and our understanding has been expanding rapidly only in the last 20 years. It is now clear that the cells have evolved a

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