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Nota di contenuto	Chapter 1: Vaccine design, nanoparticle vaccines and biomaterial applications -- Chapter 2: Systems Immunology approach in understanding the association of allergy and cancer -- Chapter 3: Genome Engineering Tools in Immunotherapy -- Chapter 4: Bioinformatics tools for Epitope Prediction. Chapter 5: A chronological journey of Breg subsets: Implications in health and disease -- Chapter 6: T-cell activation and differentiation: Role of signaling and metabolic crosstalk -- Chapter 7: Innate immune signaling in cardiac homeostasis and cardiac injuries -- Chapter 8: . Role of Regulatory T lymphocytes in Health and Disease -- Chapter 9: Implication of Synthetic Biology in

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Sommario/riassunto	Systems and Synthetic Immunology focuses on the similarities between biology and engineering at the systems level, which are important for applying engineering theories to biology problems. With the advent of new genomic techniques, there are numerous systematic investigations underway in the scientific world. This volume highlights techniques that can be used to effectively combine two of the most essential biological fields - Systems Biology and Synthetic Immunology. The respective chapters discuss the role of synthetic immunology in biotechnology, production of biomaterials, and their use in vaccine delivery. Further topics include the importance of cytokines; the use of genomic engineering tools in immunotherapy; immunosensors; nanotherapeutics; and bioinformatics tools in biomedical applications. Given its scope, the book offers readers an up-to-date and comprehensive review of this unique and dynamic field of research.