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Nota di contenuto	Chapter 1. Chemically synthesized TLR4 ligands, their immunological functions and potential as vaccine adjuvant -- Chapter 2. Intracellular TLR4 signaling -- Chapter 3. TLR4 Ligands: Single Molecules and Aggregates -- Chapter 4. CD14: not just chaperone, but a key-player in inflammation -- Chapter 5. Toll-Like Receptor 4 interactions with Neisseria -- Chapter 6. Toll-Like Receptor4 and Damage-Associated Molecular Patterns (DAMPs) -- Chapter 7. TLR4 in neurodegenerative diseases: Alzheimer and Parkinson disease -- Chapter 8. TLR4-mediated Neuroinflammation in Human Induced Pluripotent Stem Cells and Cerebral Organoids -- Chapter 9. The role of TLR4 in neural stem cells-mediated neurogenesis and neuroinflammation -- Chapter 10. Toll-Like Receptor 4 and the world of microRNAs -- Chapter 11. Metabolic reprogramming of myeloid cells upon TLR4 stimulation.
Sommario/riassunto	TLR4 is one of the most important innate immunity receptors, its function mainly consisting in the activation of inflammatory pathways in response to stimulation by Pathogen-Associated Molecular Patterns (PAMPs) and Damage Associated Molecular Pattern molecules (DAMPs). This volume critically reviews the different types of TLR4 activators and inhibitors, discusses the role of molecular aggregates in agonism/antagonism as well as the pivotal role of the CD14 receptor in

the modulation of TLR4 signal and the molecular details and actors of the intracellular cascade. The book presents the role of TLR4 in several pathologies, such as sepsis and septic shock caused by receptor activation by gram-negative bacterial lipopolysaccharide (LPS), in neurodegenerative and neurological diseases such as Parkinson and Alzheimer's diseases, and Amyotrophic Lateral Sclerosis (ALS). It reviews the role of TLR4 in neural stem cell-mediated neurogenesis and neuroinflammation and in Human Induced Pluripotent Stem Cells and Cerebral Organoids and discusses the emerging role of micro-RNA (miRNA) regulation by TLR4. .

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