

1. Record Nr.	UNINA9910416101703321
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Titolo	The M2 Macrophage // by Tamás Röszer
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-50480-8
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XIII, 224 p. 56 illus., 49 illus. in color.)
Collana	Progress in Inflammation Research, , 0379-0363 ; ; 86
Disciplina	571.9685
Soggetti	Immunology Cytology Lipids Communicable diseases Infection Human physiology Cell Biology Lipidology Infectious Diseases Human Physiology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Introduction. What is an M2 macrophage? Historical overview of the macrophage polarization model. The Th1/Th2 and M1/M2 paradigms, the arginine fork -- Chapter 2. Evolutionary origin of the M2 macrophage activation: invertebrates -- Chapter 3. Evolution of M2 macrophage functions in chordates -- Chapter 4. Signal mechanisms of M2 macrophage activation -- Chapter 5. Mechanisms which control the size of M2 macrophage-dominated tissue macrophage niches -- Chapter 6. Immune functions of the M2 macrophages: host defense, self-tolerance and autoimmunity -- Chapter 7. M2 macrophages in the integument and in the musculoskeletal system -- Chapter 8. M2 macrophages in the circulatory-, respiratory and excretory organs -- Chapter 9. M2 macrophages in the metabolic organs and in the neuroendocrine

system -- Chapter 10. Practical approaches in M2 macrophage biology: analysis, pharmacology and didactical interpretation of M2 macrophage functions.

Sommario/riassunto

Macrophages are core components of the innate immune system. Once activated, they may have either pro- or anti-inflammatory effects that include pathogen killing, safe disposal of apoptotic cells or tissue renewal. The activation state of macrophages is conceptualized by the so-called M1/M2 model of polarization. M2 macrophages are not simply antagonists of M1 macrophages; rather, they represent a network of tissue resident macrophages with roles in tissue development and organ homeostasis. M2 macrophages govern functions at the interfaces of immunity, tissue development and turnover, metabolism, and endocrine signaling. Dysfunction in M2 macrophages can ruin the healthy interplay between the immune system and metabolic processes, and lead to diseases such as insulin resistance, metabolic syndrome, and type 1 and 2 diabetes mellitus. Furthermore, M2 macrophages are essential for healthy tissue development and immunological self-tolerance. Worryingly, these functions of M2 macrophages can also be disrupted, resulting in tumor growth and autoimmunity. This book comprehensively discusses the biology of M2 macrophages, summarizes the current state of knowledge, and highlights key questions that remain unanswered.
