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Nota di contenuto	Contents; Preface; Part I MIF Structure and Mechanism of Action; I-1 MIF, MIF Alleles, and the Regulation of the Host Response Richard Bucala; 1. Introduction; 2. MIF Gene; 3. MIF Production and Signal Transduction; 4. Innate Immunity; 5. Adaptive Immunity; 6. MIF Integrates Immune, Metabolic, and Oncogenic Responses; 7. MIF Alleles in Human Disease; 8. Therapeutic Implications and Future Directions; Acknowledgments; References; I-2 MIF and the Chemokine Axis Sandra Kraemer, Christian Weber and Jurgen Bernhagen; 1. Introduction; 2. Chemokines: Classes, Structure, Function, and Receptors 3. Structural Classification of MIF4. Nonclassical MIF Secretion and Link to Secretion of CLF Chemokines; 5. Chemokine-like Function (CLF) Chemokines and MIF as a CLF Chemokine; 6. MIF/ Chemokine Receptor Interactions and Functional Role in Inflammation and Atherogenesis; 7. Structural Basis Underlying MIF/Chemokine Receptor Interactions; 8. MIF Receptor Complexes; 9. Conclusion; 10. Acknowledgments; References; I-3 CD74, the Natural Receptor for MIF, Regulates Cell Survival in Health and Disease Idit Shachar, Maya Gordin, Sivan Cohen, Inbal Binsky, Ayelet Marom and Shirly Becker-Herman 1. Introduction2. CD74 (Invariant Chain, Ii); 3. CD74 Functions as a Chaperone for MHC Class II; 4. CD74 as a Signaling Molecule; 4.1 CD74 is a cell surface receptor that induces signaling cascades; 4.2 CD74 is

subjected to regulated intramembrane proteolysis (RIP); 5. MIF Regulates B Cell Survival in a CD74-Dependent Manner; 5.1 A complex of CD74 and CD44 is essential for initiating the signaling cascade induced by MIF; 5.2 c-Met and its ligand HGF regulate mature B cell survival in a pathway induced by MIF binding to CD74/CD44 5.3 MIF induces TAp63 expression, which regulates B cell survival in a CD74-dependent manner6. MIF Is Secreted from Perivascular Bone Marrow Dendritic Cell Clusters that Regulate B Cell Survival; 7. MIF and CD74 in Tumors; 7.1 MIF and CD74 in CLL survival; 7.2 MIF and CD74 regulate CLL homing to the BM; References; I-4 Towards the MIF Interactome Jorg Klug and Andreas Meinhardt; 1. Introduction; 2. MIF Affects Degradation of Regulatory Proteins by Modulating the Ubiquitin Proteasome System; 3. Ribosomal Protein S19 as Endogenous Inhibitor of Extracellular MIF 4. Interactors Involved in MIF Redox Activity4.1. Insulin; 4.2. Hepatopoietin (HPO); 4.3. Proliferation-associated gene (PAG) protein; 4.4. p53; 4.5. Protein (NM23A) expressed in nonmetastatic cells (NM23-H1); 4.6. 1-inhibitor-3 (1-I3); 5 Concluding Remarks; Acknowledgments; References; I-5 Structural Studies of Small Molecule Inhibitors of MIF Yoonsang Cho and Elias J. Lolis; 1. Introduction; 2. Small Molecule Structures; 3. Catalytic Site Inhibitors; 4. Covalent Inhibitors; 5. Allosteric and Mixed Inhibitors; References; Part II Regulation of MIF Expression II-1 Epigenetic Control of MIF Expression Thierry Roger, Jerome Lugin, Xavier C. Ding and Thierry Calandra

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## Sommario/riassunto

The role of the cytokine, macrophage migration inhibitory factor (MIF), in the immune response and in the immunopathogenesis of different inflammatory, autoimmune, and infectious disorders is now well established. The aim of this handbook is to provide an authoritative volume covering all aspects of MIF, from basic molecular biology to structure-function relationships, pathophysiology, genetics, and drug development. Recent studies continue to broaden considerably the role of MIF in both normal physiology and pathology, which range from such diverse areas as oncogenesis, cardiac physiology, and

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