In recent years, researchers have identified a pivotal, upstream role for macrophage migration inhibitory factor (MIF) in the innate immune response. This pioneering book describes this renaissance of knowledge in the biology of MIF. Topics covered in the text include MIF's molecular mechanism of action, its counterregulatory action on the immunosuppressive properties of glucocorticoids, its role in the production of proinflammatory mediators as shown in cell-based and animal studies; and its central role in human inflammation. Human genetic studies have identified allelic forms of the MIF gene, and high-expression alleles have been associated with rheumatoid arthritis, asthma severity, sarcoidosis, atopy, inflammatory bowel disease, and other inflammatory and infectious maladies. The book also discusses the role of MIF as a therapeutic target. Unique structural features of the protein, such as an intrinsic catalytic activity and the recent discovery of its cell surface receptor, offer attractive opportunities for therapeutic intervention. Such approaches are presently in clinical development.