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The Role of Microbes in Autoimmune Diseases

New Mechanisms of Microbial Initiation
of Autoimmunity

 Springer

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I would like to dedicate this book to the great people who have had impact on my academic path; Professor Oleg Yurevich Latyshev, the President of International Mariinskaya Academy (IMA), for his great efforts in uniting academicians from the world in IMA.

I would also like to dedicate this book to Professor Tuweh Negus Prince Gadama the Great for his real great achievement in academia, education, and politics.

I would also like to dedicate this book to all my family members: wife and sons. Also, I would like to dedicate this book to the soul of my parents.

Preface

Writing literature is considered easier than writing in science. In literature, the writer may easily claim an opinion, idea, or even having a perception. It is not a matter to agree or disagree with the writer. At school and university ages, it was a habit to write some poems and philosophical ideas. My dreams were far away from writing books, because a good level of maturity is required to transform ideas into scientific texts. During that time, I worked to acquire scientific mentality that gives ideas and accepts criticism. I was planning to start the stage of book writing after being retired. It was my ambition to see my books translated into different languages. At the end of 2017, I received an e-mail from a publishing house to transform one of my articles into a book. The first book was about the molecular and physiological roles of estrogen receptor. This was followed by another book *White Matter and Disease: Does Brain have a Role in Initiating Disease*. I was glad that both books were released in nine different languages.

The idea of this book *The Role of Microbes in Autoimmune Diseases* came into my mind as a response to a question how fungi are interacting with the presence of estrogen? Various theories tried to suggest answers including the presence of estrogen binding protein expressed in the yeast cell itself. The idea was further developed to become an explanation of the development of autoimmunity by microbes.

I am glad that the idea of this book has been accepted by Springer nature and to make this book.

This book is mainly important for readers as it introduces new perceptions for the initiating process of autoimmune diseases. I have started thinking of microbes from different points of view for a long time. Beyond the structural variations between microbial cells and host cells, I reached to the conclusion that microbes act functionally as host cells, including human cells. There are similar mechanisms in cell divisions including p53, estrogen receptor, BCL2, and others. Similar neurotransmitters are released by microbes and host cells.

Proteins included in cell cycle division are thought to be conserved and not exposed to immune cells. Being produced by microbes implies to be exposed to immune cells in different areas of the body and development of autoantibodies and as a result autoimmune disease. It seems that this is a new approach explaining the development of autoimmune diseases and adds a new piece of information to the existing literature.

This book consists of seven chapters that cover immunology subjects in general and autoimmunity.

Irbid, Jordan

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Abbreviations

AA	Alopecia areata
ACPAs	Anticitrullinated protein antibodies
AD	Atopic dermatitis
ADCC	Antibody-dependent cytotoxicity
AICy	Autoimmune cytopenias
AID	Autoimmune disorders
AIDP	Acute inflammatory demyelinating polyradiculoneuropathy
AIG	Autoimmune gastritis
AIH	Autoimmune hepatitis
AITD	Autoimmune thyroid diseases
Anti-CarP	Anti-carbamylated protein antibodies
APS	Antiphospholipid syndrome
<i>C. albicans</i>	<i>Candida albicans</i>
CIA	Collagen-induced arthritis
CIDP	Chronic inflammatory demyelinating polyneuropathy
CMML	Chronic myelomonocytic leukemia
CNS	Central nervous system
DCs	Dendritic cells
EPHB2	Ephrin type B receptor 2
ER	Estrogen receptor
GWAS	Genome-wide association studies
H SCT	Hematopoietic stem cell transplants
IgA	Immunoglobulin A
LGI1	Anti-leucine-rich glioma inactivated
MAS	Multiple autoimmune disorders
MBL	Mannose-binding lectin
MDA5	Melanoma differentiation associated gene 5
MDS	Myelodysplastic syndromes
MGUS	Monoclonal gammopathy of unknown significance
MMN	Multifocal motor neuropathy
MOG	Myelin oligodendrocyte glycoprotein
MS	Multiple sclerosis
NBOD2	Nucleotide-binding oligomerization domain-containing protein 2

NLRs	NOD-like receptors
NMOSD	Neuromyelitis optica spectrum disease
PNS	Peripheral nervous system
Ps	Psoriasis
RA	Rheumatoid arthritis
RF	Rheumatoid factor
ROS	Reactive oxygen species
SDB	Sabouraud Dextrose Broth
SLE	Systemic lupus erythematosus
SS	Sjögren's syndrome
TLR5	Toll-like receptor 5
TNF	Tumor necrosis factor
Treg	Regulatory T cells