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The role of CD44 and its ligand galectin-8 in the induction of apoptosis in the arthritic joints: Routes to new therapies for autoimmune and cancer diseases

A utoimmune inflammatory and cancer diseases are intractable disorders, involving pathological activities mediating tissue destruction. In Europe, and other parts of the world, these diseases cause immense human suffering and inflict on society an annual economic burden of hundreds of billions of euros, associated with direct and indirect medical costs resulting from lost work time, disability payments and premature death. Traditional treatments and drugs for various autoimmune and cancer diseases either produce undesirable side effects or provide a relief of symptoms or delay in deterioration rather than a cure. Most, if not all, have the deleterious effect of destroying normal cells as well as the cells involved in pathological activities. Results of efforts made to develop improved treatments for autoimmune and cancer diseases using disease specific cell surface chemical entities have been disappointing until now. Rheumatoid arthritis (RA) is a common chronic inflammatory arthropathy, leading to joint destruction and disability as a consequence of the chronic inflammatory processes. The etiology is unknown and the pathogenesis of this disorder is not well understood, yet the molecular events leading to tissue inflammation resulting with cartilage and bone destruction are now better defined. As a result there is a better chance now than ever before to develop new therapeutic modalities; an example of such an effort will be presented here. We have found new variant of human galectin-8 protein expressed in the joints of arthritic patients. This protein induces apoptosis in treated cells and has approximately 80% therapeutic effect in CIA mouse model.

Biography

Itshak Golan has completed his PhD in Cell Research and Immunology, Tel-Aviv University and Postdoctoral studies in Hebrew University Medical School of Jerusalem and B.T.G. Israel Ltd. He was the Lecturer in Hebrew University Medical School, Honorary Principal Research Fellow in Imperial College, Honorary Senior Lecturer in College of Medicine, Swansea University, R&D/Innovation Manager in Swansea University and Senior Program Manager in NIHR. He is a Founder and Director of two British Biotechnology Companies developing new biological drugs for autoimmune inflammatory diseases and cancer and serving as an Expert/Projects Evaluator in EU Commission in Brussels. He was awarded for his professional success by Hebrew University and EU Commission. He has published 15 papers in scientific journals, has 36 patents in the field of rheumatoid arthritis and cancer and has been serving as an Editorial Board Member of *MOJ Immunology*.

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