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Targeting the intracellular proteome with T-cell mimicking antibodies: Structural and functional properties

We have created a unique class of human monoclonal antibodies that mimic the ability of the T cell receptor to recognize intracellular antigens in the context of the major histocompatibility complex (MHC). This approach harnesses the power of the cellular arm of the immune system to attack diseased cells with soluble, readily made human monoclonal antibodies. Distinct from conventional monoclonal approaches that only attack cell surface-associated proteins; this approach of generating T cell receptor-like antibodies now addresses the far more abundant intracellular proteome. The combination of these features opens entirely new vistas for the treatment of many kinds of diseases in oncology, autoimmunity and inflammation. The molecular properties of this unique family of molecules as well as the structure-function relationships studies will be presented considering their binding specificity properties.

Biography

Yoram Reiter is a Professor and the Sebba Chair in Sciences at the Faculty of Biology Technion-Israel Institute of Technology, Israel. He Heads the Laboratory of Molecular Immunology and is also the Director of the Lokey Interdisciplinary Center for Life Sciences and Engineering at the Technion. His lab develops new approaches for cancer immunotherapy and other molecular engineering approaches for autoimmunity using recombinant antibodies and MHC molecules. He has published >100 scientific papers and reviews as well as >30 patents in the fields of antibody engineering, immunotherapy and molecular immunology. He is the Co-Founder of Applied Immune Technologies (AIT) which develops T cell receptor like antibodies for clinical applications.

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