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Educational Note

Autoantibodies bind to autoantigens

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Abstract

Autoantibodies are major biomarkers of several autoimmune diseases and are used for diagnostic and prognostic purposes. Antibody's main function is twofold; it binds to an antigen, such binding elicits a chain of reactions, such as activation of other components of the immune system, antibody-depended cytotoxicity, and recruitment of cells and chemokines. An antibody binds to its respective antigen and the antigenic site is called epitope. In the case of autoantibodies, the respective antigen sites all called autoepitopes. As in the case of the epitopes of infectious agents, autoepitopes are mainly conformational and to a lesser extent linear.

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Keywords- Antibody; antigen; autoantibody; autoantigen, autoepitope; epitope

I. INTRODUCTION

The major function of an antibody is to specifically bind to an antigen. This antibody binding activates the recruitment of other major components of the immune system leading to a series of immunological events like for instance immunity against infectious agents and induction of neutralizing antibodies following vaccination (1, 2).

The binding site of an antigen is called epitope; paratope is the binding site on the antibody. In the case of an autoantibody, i.e. an antibody direct against a self-antigen, the binding site on the antigen is termed autoepitope. Autoantigens have several, mainly non-linear (conformational) epitopes (3). In few cases, antibodies and therefore autoantibodies are directed against linearized short amino acid sequences (linear epitope) (4). Autoantibodies are frequently found in organ and non-organ specific autoimmune diseases.

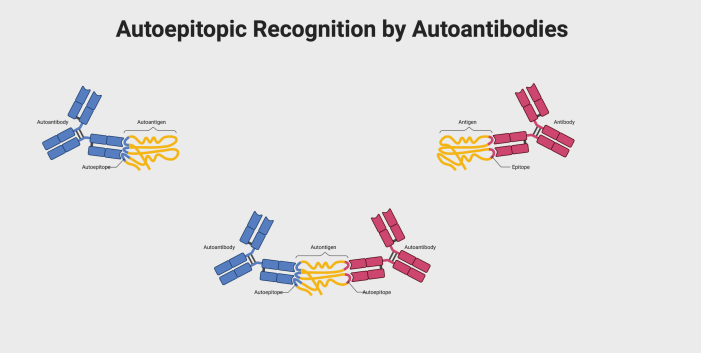

Fig. 1*. Autoepitopic recognition of conformation epitopes by autoantibodies. Prepared using BioRender under license to DPB.*

II. CONCLUSION

In conclusion, autoantibodies are directed against conformational or linear epitopic regions, the so called autoepitopes.

AUTHOR CONTRIBUTIONS

The authors drafted and approved the final version of the manuscript.

CONFLICT OF INTEREST

All Authors declare no conflict of interest.

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