

Microblot-Array: Multiplex diagnostics of anti-nuclear antibodies in microtiter plate format

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Abstract

Determination of anti-nuclear antibodies (ANA) is an important tool for differential diagnosis of systemic autoimmune diseases. ANA are autoantibodies directed against intracellular antigens located mainly in the cell nucleus or the cytoplasm. Their detection can indicate the presence of systemic immunopathologic process. Related disorders include systemic lupus erythematosus (SLE), Sjogren's syndrome (SjS), scleroderma, mixed connective tissue disease (MCTD), systemic sclerosis, polymyositis, and dermatomyositis. Extractable nuclear antigens (ENA) are a group of anti-nuclear antigens: SS-A/Ro, SS-B/La, Sm, RNP, Scl-70 and Jo-1. They are mainly ribonucleoproteins and nuclear enzymes. Antibodies against SS-A/Ro and SS-B/La often occur in patients with SjS and SLE. Anti-Sm antibodies are a highly specific marker of SLE. Therefore, they are one of the classifications and diagnostics criteria for SLE. Other indicator of SLE in patients is anti-RNP antibodies. They are a part of Sm/RNP complex and can often be detected in case of SLE. However, presence of anti-RNP antibodies is highly connected with MCTD, especially when no presence of anti-Sm antibodies is proved. A further group of organ non-specific auto-immune diseases is made up by myositis. The diagnostic process is based on the detection of anti-Jo-1 anti-gens, as well as the determination of other anti-synthetize antibodies, which are a significant marker for the diagnosis of anti-synthetize syndrome. Antibodies against antigen Scl-70 and centromeres are important diagnostic markers for systemic sclerosis (particularly its progressive forms). The group of ANA also consists of ssDNA, dsDNA, histones and DNP, RNP (i.e. complexes of nuclear proteins). Examination of ANA may also be included in the diagnostics of other autoimmune diseases like primary biliary cirrhosis. Detection of anti-DFS70 antibodies improve the diagnostics of autoimmune systemic diseases. They rarely occur in case of systemic autoimmune rheumatic diseases, but they are common in healthy individuals. Microblot-Array ANA kit is intended for confirmation of enzyme immunoassay (EIA) or other screening methods. It also enables identification of the specific type of an antibody and thus differentiation of systemic autoimmune diseases. It is an immunoblot array in a microtiter plate format designed for efficient multiplex diagnostics. The technology eliminates the bottleneck of traditional immunoblot processing and capacity and opens the way to high throughput testing and automation.



Biography:

Ms Marketa Burdova is a project specialist in the Test line diagnostic pvt Ltd in Czech Republic. She has worked on the anti-nuclear antibodies (ANA) as an important tool for differential diagnosis of systemic autoimmune diseases

[15th International Conference on Allergy and Clinical Immunology](#), August 13-14, 2020 (Webinar)

Abstract Citation:

Markéta Burdová, Microblot-Array: Multiplex diagnostics of anti-nuclear antibodies in microtiter plate format, Allergy 2020, 15th International Conference on Allergy and Clinical Immunology, August 13- 14, 2020 (Webinar) (<https://allergy.immunologyconferences.com/>)