

SHORT THESIS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY (PhD)

**COMPREHENSIVE ANALYSIS OF ANTI-MDA5 POSITIVE DERMATOMYOSITIS:
DIAGNOSTIC METHODS, CLINICAL DISEASE COURSE, AND OUTCOME**

by Sándor Lajos Mogyoróssy, MD

Supervisor: Levente Bodoki, MD, PhD



UNIVERSITY OF DEBRECEN
GYULA PETRÁNYI DOCTORAL SCHOOL OF ALLERGY AND CLINICAL IMMUNOLOGY

DEBRECEN, 2026

**COMPREHENSIVE ANALYSIS OF ANTI-MDA5 POSITIVE DERMATOMYOSITIS:
DIAGNOSTIC METHODS, CLINICAL DISEASE COURSE, AND OUTCOME**

By Sándor Lajos Mogyoróssy, MD

Supervisor: Levente Bodoki, MD, PhD

Gyula Petrányi Doctoral School of Allergy and Clinical Immunology, University of Debrecen

Head of the **Defense Committee:** Prof. Andrea Szegedi, MD, DSc, MHAS

Reviewers: Ildikó Fanny Horváth, MD, PhD

Prof. Attila Balog, MD, PhD

Members of the Defense Committee: Éva Szekanecz, MD, PhD

Izabella Ilona Gomez, MD, PhD

The PhD Defense takes place at the Lecture Hall of Bldg. A, Department of Internal
Medicine, Faculty of Medicine, University of Debrecen

26. October 2026. 11:00

1. Introduction

Idiopathic inflammatory myopathies (IIM, the myositis spectrum of diseases) are a rare and highly heterogeneous group of systemic autoimmune diseases characterized by chronic, immune-mediated inflammation of the striated muscles, skin, and various internal organs. The classification and diagnostics of this disease group have undergone a long and highly complex evolution. The traditional classification based purely on clinical and histopathological features (Bohan and Peter) has been gradually replaced by the clinicopathological, and most recently, the modern clinico-serological classification built on specific autoantibody systems. Although the recent 2017 EULAR/ACR criteria brought significant progress in identifying these diseases, it still does not integrate the full autoantibody panel currently available in routine diagnostics.

The discovery of new autoantibodies has revealed that myositis-specific (MSA) and myositis-associated (MAA) autoantibodies are not merely simple diagnostic biomarkers. A prominent feature of myositis-specific antibodies is their mutual exclusivity (the simultaneous presence of multiple MSAs in a single patient is extremely rare), through which they define well-circumscribed, distinct diseases, specific phenotypes, unique organ involvement patterns, and different prognostic groups, allowing for the early and precise stratification of patients.

One of the most clinically significant representatives of myositis-specific antibodies is the anti-melanoma differentiation-associated gene 5 (anti-MDA5) antibody (formerly known as anti-CADM-140), first identified in the serum of Japanese patients in 2005. Its target, a 140 kDa intracellular RNA-specific helicase, is a fundamental component of the human innate immune response and viral sensing processes, which initiates a robust type I interferon response (interferon signature) upon recognizing pathogenic double-stranded RNA (dsRNA).

Anti-MDA5 positivity defines a completely unique dermatomyositis subgroup. In many cases, the clinical picture is characterized by the absence or only minimal presence of classic muscle weakness (clinically amyopathic dermatomyositis, CADM). Conversely, pronounced, sometimes rheumatoid arthritis (RA)-like symmetric arthritis, along with characteristic and severe vasculopathic skin lesions (ischemic skin ulcers, palmar papules, oral ulcers, and hyperkeratotic “mechanic's hands”) dominate. However, the most feared complication, which fundamentally determines morbidity and mortality, is interstitial lung disease (ILD), particularly its rapidly progressive, often therapy-refractory form associated with dramatic respiratory failure (RP-ILD).

Significant, yet not fully elucidated geographical and ethnic disparities exist regarding the epidemiology and outcome of the disease. While anti-MDA5 positivity is relatively common in East Asian populations (15-30%), and the prognosis is historically very poor due to fulminant lung involvement (RP-ILD prevalence exceeding 50% with high one-year mortality), Western European observations point to a rarer incidence (1.3-2%) and a more permissive disease course dominated by joint and skin symptoms. Recent studies explain these marked differences with an immunogenetic background: while certain HLA-DQA1 and HLA-DRB1 alleles predispose Asians to aggressive RP-ILD, the HLA-DRB1*03:01 allele common in Caucasian populations presumably plays a protective role. In Central-Eastern Europe, and specifically in the Hungarian population, comprehensive, multicentre data clarifying the domestic adaptability of the aggressive disease course described in Asian patients have been lacking. Furthermore, the prognostic role of co-expressed autoantibodies, particularly the anti-Ro52 (anti-TRIM21) antibody, in estimating the risk of lung involvement was not adequately mapped.

Alongside the challenges posed by clinical heterogeneity, the accurate and reliable laboratory detection of the anti-MDA5 antibody poses a serious diagnostic dilemma in everyday practice. Although international literature considers radiolabelled protein immunoprecipitation (IP) as the gold standard for autoantibody diagnostics – as it can recognize native, conformational epitopes – the procedure is hardly accessible in routine care due to its significant cost, labor intensity, and specific infrastructural (isotope) requirements.

This void led to the widespread use of commercial, solid-phase multiplex line immunoblot (IB) tests, which allow for rapid and cost-effective screening. However, due to the specificity limitations of IB tests – primarily originating from the use of denatured, linear recombinant antigens fixed on a nitrocellulose membrane and the in vitro exposure of hidden (cryptic) epitopes – false positive or clinically difficult-to-interpret borderline results cause daily dilemmas for clinicians. A falsely positive laboratory report generates significant diagnostic uncertainty, leading to unnecessary patient anxiety, costly additional investigations (e.g., repeated HRCT), and the unwarranted initiation of potentially toxic immunosuppressive therapy. Conversely, a false negative result can delay the identification of the specific phenotype and prognostic assessment. Resolving these diagnostic dilemmas is essential for safe, modern patient care.

2. Aims and objectives

The fundamental aim of this doctoral dissertation was to gain a deeper understanding of idiopathic inflammatory myopathies characterized by the anti-MDA5 antibody in Hungary. Due to the rarity of the disease group and the ethnic variability described in the literature, it became essential to map the specific characteristics of the domestic population. We structured our research program along this dual – clinical and laboratory-methodological – challenge, within the framework of two organically intertwined studies:

1. First study: Investigation of the clinical, serological, and prognostic features of anti-MDA5 positive dermatomyositis in a domestic, multicentre cohort Since representative clinical data were lacking in the Central-Eastern European region, our primary objective was to conduct a retrospective multicentre cohort study:

- **Determination of prevalence and phenotypic spectrum:** We aimed to determine the frequency of anti-MDA5 positivity in the Hungarian IIM population and to comprehensively describe the patients' demographic characteristics, gender distribution, and clinical phenotypes (predominant skin, joint, and muscle involvement patterns).
- **Investigation of the role of interstitial lung disease and co-expressed antibodies:** We set a key objective to analyse the frequency of pulmonary involvement (ILD) and the rapidly progressive form (RP-ILD), along with the types of radiological (HRCT) patterns (OP, NSIP, UIP). A fundamental question was to uncover the prognostic, risk-increasing relationship between anti-Ro52 positivity and lung involvement.
- **Evaluation of the biomarker profile:** We aimed to critically analyse the ability of routine laboratory parameters (creatine kinase, lactate dehydrogenase, C-reactive protein) to indicate disease activity and the dissociation existing between them.
- **Assessment of therapeutic strategies and survival:** Based on real-world data, we intended to analyse the applied (immunosuppressive and biological) strategies in domestic centres and the disease-specific outcome in the Hungarian cohort, with special regard to comparison against the high mortality data of the Asian population.

2. Second Study: Clinical relevance and methodological comparison of anti-MDA5 autoantibody detection Due to the uncertainties of commercial immunoblot tests used in routine diagnostics, our second, exploratory study focused strictly on laboratory methodology:

- **Retrospective clinical evaluation of the immunoblot method:** Analysing a comprehensive five-year (2019-2023) laboratory database to determine the positivity

and borderline rates of routine anti-MDA5 IB tests, and their correlation with confirmed real-world clinical diagnoses.

- **Methodological comparison with the gold standard (Pilot study):** Directly comparing local IB results at the sample level with the international reference radiolabelled protein immunoprecipitation (IP) technique, involving a domestic pilot cohort of definitive myositis patients exhibiting at least one anti-MDA5 IB positivity.
- **Evaluation of discordance:** Uncovering the clinical pathomechanism of agreement/discrepancy between IB and IP methods, investigating the technological causes of false positivity, and evaluating the supplementary screening role of indirect immunofluorescence (IIF).

3. Patients and methods

Methodology of the multicentre clinical cohort (First study)

In our first, retrospective multicentre study, we analysed the patient databases of four Hungarian tertiary rheumatology and immunology centres (Debrecen, Budapest, Pécs, Szeged) between January 1, 2020, and December 31, 2025. During the examined six-year period, a total of 742 patients with idiopathic inflammatory myopathy were cared for across the four centres. From this population, we selected patients with anti-MDA5 autoantibody positivity and a definitive diagnosis of myositis (fully meeting the Bohan and Peter, as well as the 2017 ACR/EULAR criteria).

Clinical symptoms and extramuscular manifestations were categorized according to the recommendations of the IMACS (International Myositis Assessment and Clinical Studies Group). The diagnosis of interstitial lung disease (ILD) was bound to a strict triple criteria system: (1) typical respiratory symptoms (dyspnoea, cough), (2) HRCT abnormalities (ground-glass opacity, consolidation, reticulation), and (3) restrictive pulmonary function pattern (FVC and DLCO < 80%) or presence of crackles. The diagnosis of the rapidly progressive (RP-ILD) form was determined by acute progression within one month from symptom onset, respiratory deterioration requiring hospital admission, objective blood gas abnormalities, or rapid (>20%) radiological progression.

Laboratory autoantibody tests were performed using the Euroimmun 16 Ag line immunoblot kit. Only patients showing reliable (weak, moderate, or strong signal intensity) IB positivity were included in the clinical cohort; borderline (+/-) results were considered negative to maximize specificity.

Due to the non-normal distribution of data, the Mann-Whitney U test, Fisher's exact test for categorical variables, and Odds Ratio (OR) calculations for associations were used for statistical analysis (at a significance level of $p < 0.05$).

Methodology of the methodological comparison (Second study)

Our second study followed a two-phase design. In the retrospective phase, we queried the database of the Institute of Laboratory Medicine, University of Debrecen, for the results of all anti-MDA5 immunoblot tests requested by specialists over a five-year period (2019-2023) (a total of 3272 determinations), identifying the rate of non-negative findings and their long-term clinical correlation.

For the second, exploratory (pilot) phase of the study, 10 definitive myositis patients were selected who had previously registered a non-negative anti-MDA5 IB result during their disease course. Fresh peripheral blood samples taken at a pre-determined time point were immediately aliquoted to avoid preanalytical bias. From one aliquot, the local IB test was repeated locally in parallel (along with HEp-2 IIF screening at a 1:80 dilution), while the other aliquot, frozen at -80°C , was sent to the reference laboratory at the University of Bath (United Kingdom). There, the gold standard radiolabelled protein immunoprecipitation analysis (incubation with protein-A-Sepharose beads, [^{35}S] methionine-labelled K562 cell extract, 10% SDS-PAGE, and autoradiography) and in-house ELISA confirmation were performed. This methodology guaranteed that the discordance analysis was conducted strictly on biological samples from the same time point with identical antibody titers.

For evaluating statistical agreement, Cohen's kappa (κ) coefficient and predictive values were calculated.

The research was approved by the ETT TUKEB.

4. Results

Results of the multicentre clinical cohort

During the examined six-year period, the presence of the anti-MDA5 autoantibody was confirmed in 24 out of 742 definitive IIM patients (3.23%). The median age of the patients was 49.5 years (range: 24-81 years), with a female-to-male ratio of 1.67:1 (15 women, 9 men), which is somewhat more balanced than usual in other myositis forms. Based on the distribution of clinicopathological subgroups, 18 patients (75.0%) were diagnosed with classic dermatomyositis (DM), 3 patients (12.5%) with amyopathic dermatomyositis (ADM), and 3 patients (12.5%) with polymyositis (PM).

Classic muscle weakness was present in the vast majority of cases (87.5%), though typically in a mild or moderate form. Alongside DM-specific skin lesions (heliotope rash, Gottron's sign, V-sign, ulcers), the “mechanic's hands” phenomenon on the radial aspects of the fingers was observed in 4 patients (16.7%). Musculoskeletal involvement was dominant: arthritis or arthralgia affected three-quarters of the patients (75.0%). As extramuscular complications, dysphagia and fever occurred in 20.8%, while myocarditis presented in 12.5% of the patients.

The analysis of laboratory parameters showed a sharp dissociation among systemic biomarkers. The level of lactate dehydrogenase (LDH), indicating cell destruction, was elevated in the overwhelming majority of patients (91.7%) (median: 377.0 U/L), while the elevation of creatine kinase (CK), which is more specific to muscle damage, frequently lagged behind (CK remained < 500 U/L in 70.8% of patients). Furthermore, it should be highlighted that the median value of C-reactive protein (CRP) remained low, often in the normal range (median: 4.24 mg/L), even in the presence of active lung involvement. Regarding pulmonary complications, the frequency of ILD was remarkably high in the cohort, at 58.3% (14 affected patients). The most common HRCT patterns were organizing pneumonia (OP, 57.1%) and non-specific interstitial pneumonia (NSIP, 35.7%), with usual interstitial pneumonia (UIP, 7.1%) occurring less frequently. The RP-ILD form, associated with immediate, life-threatening respiratory failure, developed in only 2 patients (8.3%) in the Hungarian cohort.

The serological profile analysis highlighted the significance of co-expressed antibodies. The most frequently identified MAA was anti-Ro52 (45.8%). Anti-Ro52 positivity proved to be a significant, exceptionally strong predictive factor: 71.4% of patients with lung involvement were anti-Ro52 positive, while this rate was only 10% in the ILD-free group. The co-expression represented a significant risk increase regarding the development of ILD (Odds Ratio: 22.5;

95% CI: 2.10–240.48; $p = 0.0045$). Both registered RP-ILD patients were anti-Ro52 positive. In addition, other MSAs occurred less frequently (anti-SAE 12.5%, anti-NXP2 8.3%, anti-SRP 4.2%). During therapeutic management, all patients received systemic glucocorticoids; maintenance therapy was primarily guided by the presence of ILD.

The use of aggressive agents (cyclophosphamide 64.3%, and biological therapies, e.g., rituximab and tofacitinib) was significantly more common in the group with lung involvement. During the median 72-month follow-up, the cumulative all-cause mortality was 12.5% (3 patients), but none of the deaths could be linked to IIM or its complications (e.g., respiratory failure), thus disease-specific mortality in the domestic cohort was 0%, yielding a 100% survival rate.

Retrospective and exploratory evaluation of laboratory methodology

During the retrospective analysis of 3272 IB tests performed at the University of Debrecen, a non-negative (borderline or positive) anti-MDA5 result was generated in 121 samples (3.7%, across 86 unique patients). The investigation revealed a severe diagnostic dilemma: out of the 64 unique patients producing a borderline result, definitive myositis was subsequently confirmed in only a single case (1.56%). In the remaining 63 cases (98.44%), the diagnosis was discarded during clinical follow-up (false positivity), most frequently in the presence of other autoimmune diseases (SLE, undifferentiated connective tissue disease - UCTD, polymyalgia rheumatica). However, with increasing IB signal intensity (weak, moderate, strong positivity), the probability of true myositis stably rose to between 50-66%.

The parallel analysis of the 10-patient, fresh-sample pilot cohort unequivocally confirmed the presence of methodological discordance. The gold standard IP procedure verified the presence of the anti-MDA5 antibody exclusively in the 3 patients where the initial and fresh local IB test showed marked, strong (+++) positivity (these were also confirmed by in-house ELISA). The lower signal intensity (weak and borderline) IB findings were unanimously classified as negative by IP regarding anti-MDA5. However, in two cases, IP identified other, alternative autoantibodies (anti-RuvBL1/2, anti-U1RNP), and in multiple samples, currently unidentified protein bands (e.g., 24kDa, 54kDa, 63kDa) were seen on autoradiography. The overall statistical agreement between the two methods was moderate (Cohen's $\kappa = 0.44$), indicating low clinical concordance.

During IIF screening on HEp-2 cells, a classic nuclear pattern was confirmed in most patients; the fine granular cytoplasmic staining theoretically more characteristic of anti-MDA5

presence proved to be of exceedingly low sensitivity, remaining negative in several cases even alongside strong IP positivity.

5. Discussion

The comprehensive analysis of our domestic, multicentre database confirmed that anti-MDA5 positivity is rare in the Central-Eastern European (Caucasian) region (3.23%), which aligns excellently with the results of large European cohorts (e.g., 1.3–2% data from the EuroMyositis register).

Regarding its clinical phenotype, the vast majority of Hungarian patients (75%) belong to the intermediate (type 2) group: alongside pathognomonic and vasculopathic skin lesions and joint involvement, mild muscle weakness is present in a significant proportion of cases. Concurrently, the rate of the RP-ILD phenotype, which threatens with extremely high mortality and fulminant pulmonary processes, is remarkably low in Hungary (8.3%). This stands in sharp contrast to the aggressive disease course described in Asian studies, where the prevalence of RP-ILD reaches up to 50%. Our 100% disease-specific survival during the median 72-month follow-up clearly demonstrates the more favourable prognosis. We attribute this outcome to the combined effect of a different immunogenetic background (the presence of protective HLA-DRB1 alleles characteristic of the Caucasian population) and early, aggressive multimodal immunosuppression initiated after recognition (combining glucocorticoids with cyclophosphamide, calcineurin inhibitors, or biological therapy).

From a clinical practice perspective, one of the most important findings of our study is the sharp dissociation of laboratory biomarkers. Because CRP levels remained surprisingly low, often in the normal range, even in patients exhibiting active, advanced lung involvement (ILD), relying on traditional systemic inflammatory markers may signal “false reassurance”, leading to unjustified therapeutic hesitation or undertreatment. Conversely, the elevation of LDH was nearly universal (91.7%), proving that LDH, indicating cell destruction, is a far more sensitive and reliable indicator of disease activity, making its routine, heightened monitoring essential. Although the rate of fulminant RP-ILD was low, the overall prevalence of lung involvement (ILD) approached 60% (most commonly with OP and NSIP patterns). Our results clearly demonstrated the marked prognostic role of the concurrently present anti-Ro52 antibody: the presence of co-expression increased the probability of developing ILD by more than twentyfold. This association (OR: 22.5) underscores the mandatory, initial risk-stratifying role of this serological biomarker in everyday patient care and the necessity for close pulmonological follow-up. However, a notable limitation of the clinical study is the small sample size stemming from the retrospective nature and the extreme rarity of the disease, which resulted in wide confidence intervals, as well as the potential presence of referral and survival bias.

The laboratory-methodological discussion focused on one of the most critical problems in everyday routine diagnostics: the dilemma of false positivity. Our retrospective analysis revealed an alarming picture: borderline and low-intensity anti-MDA5 IB positivity obtained via specialist requests in everyday practice – in the absence of typical clinical symptoms – masks a false positive result in nearly all instances (98.44%). This empirical observation was also confirmed at a pathomechanistic level by our gold standard IP investigation (which showed only a moderate, $\kappa = 0.44$ concordance) conducted simultaneously from identical samples under strictly controlled methodological conditions. Based on the literature, this discordance primarily originates from technological differences between the tests: while IP examines native conformational proteins, the denatured, linear recombinant antigens used in commercial IB tests can mask specific epitopes and expose *in vivo* inaccessible “cryptic” regions, generating non-specific cross-reactivities that lead to false positivity (for example, in other autoimmune diseases like SLE or UCTD). This observation carries a critical message for clinicians: isolated, low-intensity or borderline laboratory IB positivity must be interpreted with extreme caution and exclusively correlated with objective clinical status to avoid unnecessary anxiety and the erroneous initiation of toxic immunosuppressive therapy.

6. Novel findings

While the comprehensive clinical description of anti-MDA5 positive cases in the Central-Eastern European population is gap-filling in itself, the main scientific value of our dissertation can be summarized in the following three findings:

1. Regional confirmation of the more favourable prognosis of the Caucasian phenotype

While Asian literature historically identifies anti-MDA5 positivity with extremely high-mortality, fulminant RP-ILD, our data confirmed at a regional level that the phenotype carries significantly better life prospects among domestic, Caucasian patients. The intermediate clinical phenotype dominates among patients, and although lung involvement is common, disease-specific mortality during the examined six-year period was 0%. This observation provides a crucial anchor for assessing the true prognosis of patients and validates the rationale for specific patient follow-up protocols adapted to domestic conditions (based on immunogenetic background and early, robust immunosuppression).

2. Clinical evaluation of borderline immunoblot results

Our extensive retrospective analysis encompassing 3272 cases clearly demonstrated that borderline and low-intensity IB positivity observed in everyday practice—in the absence of classic clinical (skin and joint) symptoms—almost never signifies true myositis (only 1.56% of borderline findings proved clinically relevant). Although clinical decision-making is always based on the patient's objective status, this result emphatically highlights that isolated, low-titer laboratory positivity must be handled with critical caution to avoid unjustified diagnostic steps, unnecessary anxiety, costly additional radiological examinations, and misdiagnosis.

3. Demonstration of IB and IP discordance from identical samples

Under strictly controlled methodological conditions, from fresh serum samples taken at the exact same time and immediately aliquoted, we were the first to demonstrate in a domestic pilot cohort the marked discrepancy between routine IB and gold standard IP in the detection of anti-MDA5 ($\kappa = 0.44$ agreement). With this methodological step, we completely eliminated uncertainty arising from temporal disparities or the antibody-reducing effect of immunosuppressive therapy, unequivocally tracing the cause of false positivity back to technological differences between the assays (polyreactivity and cross-reactions caused by denatured antigens).

7. Summary

This doctoral dissertation investigated the specific characteristics, prognostic factors, and laboratory diagnostic challenges of anti-MDA5 autoantibody-associated idiopathic inflammatory myopathy in Hungary. Since the predominantly Asian data in the literature sharply differ from Caucasian experiences, our research mapped the Central-Eastern European phenotype through a clinical and a laboratory-methodological study. Based on our clinical analysis, the domestic prevalence (3.23%) aligns with European trends. The vast majority of the heterogeneous patient population belongs to the intermediate (type 2) group, characterized by marked, often vasculopathic skin lesions, dominant joint involvement, and typically moderate muscle involvement. We confirmed the dissociation of traditional biomarkers: LDH, indicating cell destruction, was elevated in most patients, whereas CRP frequently remained normal despite active organ involvement, establishing LDH as a more reliable indicator of activity in everyday care. Interstitial lung disease (ILD) stands out as the main complication. Our key finding is that the co-expression of the anti-Ro52 antibody showed a significant, more than twentyfold (OR: 22.5) association with the risk of lung involvement. In contrast to Asian data, the Hungarian cohort demonstrated an excellent prognosis (100% disease-specific survival), attributed to early multimodal immunosuppression and presumed Caucasian immunogenetic protection, thereby regionally confirming the significantly more favourable disease course of the Caucasian phenotype.

In our methodological study, we evaluated the reliability of multiplex line immunoblot (IB) tests used in routine clinical practice. Retrospective laboratory screening revealed: behind borderline and weak positive IB results – in the absence of a typical clinical picture – false positivity lies in over 98% of cases, and almost never means true myositis. Although clinical decision-making is always based on the patient's objective status, these isolated laboratory findings must be treated with critical caution to ensure patient care free of unjustified burdens. This observation was entirely supported by a comparative analysis of a selected, fresh-sample pilot cohort using the gold standard radiolabelled protein immunoprecipitation (IP). Under strictly controlled conditions, using biological samples collected simultaneously and immediately aliquoted, we demonstrated methodological discordance ($\kappa = 0.44$): while IP consistently confirmed strong IB positivity, it systematically classified low-intensity and borderline findings as negative (or positive for other antibodies). This discrepancy is presumably explained by technological differences between the assays, primarily non-specific binding stemming from cross-reactivity caused by denatured antigens on the nitrocellulose membrane. Overall, the domestic anti-MDA5 phenotype is associated with a more favourable

disease course, though anti-Ro52 positivity and elevated LDH levels warrant close pulmonary monitoring. Furthermore, borderline results from routine IB testing should be interpreted with strong reservation in everyday rheumatology and immunology practice to ensure safe, targeted patient care free from unnecessary additional testing.

8. Acknowledgments

I would like to express my gratitude to Professor Katalin Dankó - may she rest in peace - for her trust in me and for setting me on this path.

I thank my supervisor, Dr. Levente Bodoki, for walking this journey with me tirelessly until we reached our goal.

I am deeply grateful to Professor Gabriella Szűcs, Professor Zoltán Szekanecz and Dr. Andrea Domján for their trust, support, and immense help.

I thank Dr. Antónia Szántó for her constant encouragement.

I am grateful to Dr. Melinda Nagy-Vincze and Dr. Zoltán Griger for their valuable advice.

I would like to thank Professor Andrea Szegedi, Dr. Beáta Lajszné Tóth, and Zsuzsanna Oláh for their support throughout my work.

I thank Dr. Monika Bodoki and Dóra Csige for their assistance.

I would also like to thank my colleagues for their dedication and affection, and my friends for their continuous encouragement.

Finally, my deepest gratitude belongs to my Family.

8. Publication list



UNIVERSITY of
DEBRECEN

UNIVERSITY AND NATIONAL LIBRARY
UNIVERSITY OF DEBRECEN

H-4002 Egyetem tér 1, Debrecen

Phone: +3652/410-443, email: publikaciok@lib.unideb.hu

Registry number: DEENK/320/2026.PL
Subject: PhD Publication List

Candidate: Sándor Mogyoróssy

Doctoral School: Gyula Petrányi Doctoral School of Allergy and Clinical Immunology

MTMT ID: 10082377

List of publications related to the dissertation

1. **Mogyoróssy, S.**, Nagy, G., Griger, Z., Nagy-Vincze, M., Bodoki, M., Csige, D., Tarr, T., Zöld, É., Pfliegler, G., Brúgós, B., Lu, H., Tansley, S., Antal-Szalmás, P., Domján, A., Szamosi, S., Szűcs, G., Szekanecz, Z., Horváth, Á., Bodoki, L.: Clinical Relevance and Methodological Comparison of Anti-MDA5 Antibody Detection: a Five-Year Retrospective and Exploratory Pilot Study.
Biomolecules. 16 (5), 1-14, 2026.
DOI: <http://dx.doi.org/10.3390/biom16050698>
IF: 4.8 (2024)
2. **Mogyoróssy, S.**, Griger, Z., Tarr, T., Zöld, É., Pfliegler, G., Brúgós, B., Nagy, G., Mangel, K. Z., Kumánovics, G., Bakai, R., Kovács, L., Rideg, A., Nagy, E., Farkas, O., Nagy, G., Antal-Szalmás, P., Szűcs, G., Szamosi, S., Szekanecz, Z., Rákóczi, É., Bodoki, L.: Management and Prognosis of Anti-MDA5 Dermatomyositis: Insights from a National Multicenter Cohort.
Biomedicines. 14 (3), 1-14, 2026.
DOI: <http://dx.doi.org/10.3390/biomedicines14030709>
IF: 3.9 (2024)

List of other publications

3. **Mogyoróssy, S.**, Nagy-Vincze, M., Griger, Z., Dankó, K., Szabó, N. A., Szekanecz, Z., Szűcs, G., Szántó, A., Bodoki, L.: Novel aspects of muscle involvement in immune-mediated inflammatory arthropathies and connective tissue diseases.
Autoimmun. Rev. 22 (5), 1-7, 2023.
DOI: <http://dx.doi.org/10.1016/j.autrev.2023.103311>
IF: 9.2





**UNIVERSITY of
DEBRECEN**

**UNIVERSITY AND NATIONAL LIBRARY
UNIVERSITY OF DEBRECEN**

H-4002 Egyetem tér 1, Debrecen

Phone: +3652/410-443, email: publikaciok@lib.unideb.hu

4. Szabó, N. A., Nagy-Vincze, M., Griger, Z., **Mogyoróssy, S.**, Dankó, K., Bazsó, A., Kiss, E., Szántó, A.: Idiopathiás inflammatorikus myopathiában alkalmazott rituximabkezeléssel szerzett tapasztalataink.
Magyar Reumatol. 63 (2), 85-89, 2022.

Total IF of journals (all publications): 17,9

Total IF of journals (publications related to the dissertation): 8,7

The Candidate's publication data submitted to the Tudóstér have been validated by DEENK on the basis of the Journal Citation Report (Impact Factor) database.

20 May, 2026

