

Publications & posters

List of reference publications in which the TestLine Products have been used or mentioned.



Content

To access the specific chapter, simply right-click and press Ctrl simultaneously on the desired platform or pathogen/disease.

ELISA.....3

ANA.....	3
Borrelia.....	3
CMV.....	5
COVID.....	5
Gliadin.....	7
Helicobacter.....	8
Measles.....	8
Rheumatoid factor.....	9
Tick-borne encephalitis virus.....	9
Toxocara.....	12
Toxoplasma.....	13

CLIA16

Borrelia.....	16
MxA.....	16

Microblot-Array.....17

ANA.....	17
Borrelia.....	18
COVID.....	20
EBV.....	26

BLOT-LINE28

ANA.....	28
Anaplasma.....	28
Borrelia.....	29
Helicobacter.....	30
Toxocara.....	31
Treponema.....	31

ELISA

ANA

2023

Myositis-Specific and Myositis-Associated Antibodies in Fibromyalgia Patients: A Prospective Study

- **Summary:** This study evaluates the prevalence of Myositis-Specific and Myositis-Associated Antibodies (MSA/MAA) in a cohort of Fibromyalgia (FM) patients. Results show that a significant proportion of FM patients may be seropositive for MSA/MAA, suggesting a diagnosis of Connective Tissue Disease.
- **Country:** Italy
- **Citation:** Sambataro, G., Orlandi, M., Fagone, E., Fruciano, M., Gili, E., Libra, A., Palmucci, S., Vancheri, C., Malatino, L., Colaci, M., & Sambataro, D. (2023). Myositis-Specific and Myositis-Associated antibodies in fibromyalgia patients: a Prospective study. *Biomedicines*, 11(3), 658. <https://doi.org/10.3390/biomedicines11030658>

Borrelia

2024

Paretic complications of tick-borne encephalitis and Lyme neuroborreliosis in the Czech Republic: Characteristics and clinical outcome

- **Summary:** This study examines paretic complications in tick-borne encephalitis (TBE) and Lyme neuroborreliosis (LNB) patients, focusing on their severity, persistence, and impact on quality of life. Results showed that TBE patients had more persistent paresis, while LNB patients had fewer. Prevention is crucial for reducing long-term motor deficits in TBE patients.
- **Country:** Czech Republic
- **Citation:** Smíšková, D., Pícha, D., Slížek, M., & Džupová, O. (2024). Paretic complications of tick-borne encephalitis and Lyme neuroborreliosis in the Czech Republic: Characteristics and clinical outcome. *Ticks and Tick-borne Diseases*, 15(2), 102302. <https://doi.org/10.1016/j.ttbdis.2023.102302>

2023

Comparison of methods for determining antibodies against *Borrelia* spp. in early and late forms of Lyme disease

- **Summary:** The comparison shows that the new generation of CLIA serological methods has the same sensitivity and specificity as ELISA, and the results also agree with the latest MBA confirmation method. The results of the development of antibodies in various manifestations of LB can be helpful in the diagnosis of the disease and the subsequent treatment of the patient.
- **Country:** Czech Republic
- **Poster link:** [https://www.testlinecd.com/dmsdownload/5297743/POSTER MBA,-CLIA,-EIA-Borrelia_Comparison-of-methods-for-determining-Borrelia-antibodies.pdf](https://www.testlinecd.com/dmsdownload/5297743/POSTER_MBA,-CLIA,-EIA-Borrelia_Comparison-of-methods-for-determining-Borrelia-antibodies.pdf)

2018

Serological Diagnostics of Lyme Borreliosis: Comparison of Universal and Borrelia Species-Specific Tests Based on Whole Cell and Recombinant Antigens

- **Summary:** The study compares diagnostic parameters of commercial serological kits based on three antigen types and correlates test results with Borrelia infection status. It found that ELISA has superior sensitivity and negative predictive value, while species-specific tests have volatile parameters. Correlation with clinical state is limited.
- **Country:** Czech Republic
- **Citation:** Kodym, P., Kurzová, Z., Berenová, D., Pícha, D., Smíšková, D., Moravcová, L., & Malý, M. (2018b). Serological Diagnostics of Lyme Borreliosis: Comparison of universal and Borrelia Species-Specific tests based on Whole-Cell and recombinant antigens. Journal of Clinical Microbiology, 56(11). <https://doi.org/10.1128/jcm.00601-18>

2013

DNA persistence after treatment of Lyme borreliosis

- **Summary:** A study of 124 patients with various Lyme disease manifestations found Borrelia burgdorferi DNA in plasma, CSF, urine, and synovial fluid using PCR. Despite treatment, DNA persisted in some patients, suggesting prolonged PCR positivity not linked to persistent infection.
- **Country:** Czech Republics
- **Citation:** Pícha, D., Moravcová, L., Vaňousová, D., Hercogová, J., & Blechová, Z. (2013). DNA persistence after treatment of Lyme borreliosis. Folia Microbiologica, 59(2), 115–125. <https://doi.org/10.1007/s12223-013-0272-4>

2015

Antigenicity of borrelial protein OppA2 and NapA fragments in pediatric Lyme arthritis

- **Summary:** Recombinant EIA enriched with OppA2 and NapA shows potential to outperform standard screening tests for Lyme arthritis (LA). OppA2, a surface-localized lipoprotein, appears as a significant indicator for LA diagnosis, with specific IgG antibodies detectable early and persisting for years post-treatment. However, anti-NapA IgG levels do not significantly increase in LA children and decline with antibiotic treatment, suggesting limited diagnostic value.
- **Country:** Czech Republic
- **Poster link:** https://www.testlinecd.com/dmsdownload/4688474/POTER_BLOT-Borrelia_Antigenicity-of-borrelial-protein-OppA2-and-NapA-fragments.pdf

Comparison of EIA Borrelia recombinant with VlsE lipoprotein with EIA Borrelia garinii using whole cell antigen in the diagnosis of neuroborreliosis

- **Summary:** Recombinant EIA enriched with OppA2 and NapA shows potential to outperform standard screening tests for Lyme arthritis (LA). OppA2, a surface-localized lipoprotein, appears as a significant indicator for LA diagnosis, with specific IgG antibodies detectable early and persisting for years post-treatment. However, anti-NapA IgG levels do not significantly increase in LA children and decline with antibiotic treatment, suggesting limited diagnostic value.
- **Country:** Czech Republic
- **Poster link:** https://www.testlinecd.com/dmsdownload/4688474/POTER_BLOT-Borrelia_Antigenicity-of-borrelial-protein-OppA2-and-NapA-fragments.pdf

2005

Testing of the Biocan® b inj. ad us. vet. vaccine and development of the new recombinant vaccine against canine borreliosis

- **Summary:** Biocan B inj. ad us. vet. (Bioveta, a.s.) has been tested for its efficacy using ticks collected in nature. The vaccine developed using recombinant outer surface proteins from *B. afzelii*, *B. burgdorferi*, and *B. garinii*, has been tested on BALB/c mice and confirmed for potential use in challenge tests.
- **Country:** Czech Republic
- **Citation:** Tuhácková, J., Běláková, J., Krupka, M., Neperený, J., Chumela, J., Weigl, E., & Vrzal, V. (2005). Testing of the Biocan® B inj. ad us. vet. vaccine and development of the new recombinant vaccine against canine borreliosis. Biomedical Papers/Biomedical Papers of the Faculty of Medicine of Palacký University, Olomouc Czech Republic, 149(2), 297–302. <https://doi.org/10.5507/bp.2005.046>

CMV

2017

Terminally differentiated memory T cells are increased in patients with common variable immunodeficiency and selective IgA deficiency

- **Summary:** This study found lymphocyte abnormalities in common variable immunodeficiency (CVID) and selective IgA deficiency (IgAD) patients. Flow cytometry showed an increase in CD4+ and CD8+ late differentiated memory cells in CVID patients and a decrease in Treg cells in IgAD patients.
- **Country:** Czech Republic
- **Citation:** Nechvatalova, J., Pavlik, T., & Litzman, J. (2017). Terminally differentiated memory T cells are increased in patients with common variable immunodeficiency and selective IgA deficiency. Central-European Journal of Immunology/Central European Journal of Immunology, 3, 244–251. <https://doi.org/10.5114/ceji.2017.70966>

COVID

2024

Humoral and Cellular Immune Response after Three Doses of Sinopharm [Vero Cell]-Inactivated COVID-19 Vaccine in Combination with SARS-CoV-2 Infection Leads to Hybrid Immunity

- **Summary:** The study investigates the impact of the Sinopharm vaccine and SARS-CoV-2 infection on volunteers' immune responses. Results show cardiovascular diseases increase anti-N-IgG antibodies, endocrinological diseases decrease them, and confirm hybrid immunity, a stronger, more durable response compared to natural or vaccine-induced immunity.
- **Country:** Serbia
- **Citation:** Vukčević, M., Šerović, K., Despot, M., Nikolić-Kokić, A., Vujović, A., Nikolić, M., Blagojević, D., Jovanović, T., & Despot, D. (2024). Humoral and Cellular Immune Response after Three Doses of Sinopharm [Vero Cell]-Inactivated COVID-19 Vaccine in Combination with SARS-CoV-2 Infection Leads to Hybrid Immunity. Pharmaceuticals, 17(1), 122. <https://doi.org/10.3390/ph17010122>

SARS-CoV-2 Seroprevalence in Children under 5 Years Old—A Regional Seroepidemiological Study

- **Summary:** The study assessed SARS-CoV-2 infection spread in 743 children under 5 years old, finding that 52.76% had an IgG titer exceeding the reactivity threshold. The prevalence increased with age, with IgG titer positively correlated with age.
- **Country:** Romania
- **Citation:** Trofin, F., Luncă, C., Păduraru, D., Anton-Păduraru, D., Buzilă, E. R., Nastase, E. V., Lupu, A., Lupu, V. V., & Dorneanu, O. S. (2024). SARS-CoV-2 Seroprevalence in Children under 5 Years Old—A Regional Seroepidemiological Study. *Medicina*, 60(3), 384. <https://doi.org/10.3390/medicina60030384>

2022

Anti-RBD IgA and IgG Response and Transmission in Breast Milk of Anti-SARS-CoV-2 Vaccinated Mothers

- **Summary:** A study conducted between January-July 2021 found that anti-SARS-CoV-2 antibodies were present in the breast milk of 28 vaccinated lactating mothers. The antibodies' titers did not decrease after 60 days, and the response was directly proportional to the breastfed child's age, with the amount of anti-RBD IgA decreasing with the baby's rank.
- **Country:** Romania
- **Citation:** Trofin, F., Nastase, E. V., Iancu, L. S., Constantinescu, D., Cianga, C. M., Lunca, C., Ursu, R. G., Cianga, P., & Dorneanu, O. S. (2022). Anti-RBD IGA and IGG response and transmission in breast milk of Anti-SARS-COV-2 vaccinated mothers. *Pathogens*, 11(3), 286. <https://doi.org/10.3390/pathogens11030286>

Cytokines and Chemokines in Breastmilk of SARS-CoV-2 Infected or COVID-19 Vaccinated Mothers

- **Summary:** The study investigated the safety of breastfeeding during COVID-19 infection or after vaccination. It found that cytokine concentrations in breastmilk were mostly within reference intervals, with factors like mother's status, child's age, parity, and maternal age influencing the concentrations.
- **Country:** Romania
- **Citation:** Trofin, F., Dorneanu, O. S., Constantinescu, D., Nastase, E. V., Luncă, C., Iancu, L. S., Andrioaie, I., Duhaniuc, A., Cianga, C. M., Pavel-Tanasa, M., Anton-Păduraru, D., & Cianga, P. (2022). Cytokines and chemokines in breastmilk of SARS-COV-2 infected or COVID-19 vaccinated mothers. *Vaccines*, 10(12), 2001. <https://doi.org/10.3390/vaccines10122001>

Effectiveness and Durability of mRNA Vaccine-Induced SARS-CoV-2-Specific Humoral and Cellular Immunity in Severe Asthma Patients on Biological Therapy

- **Summary:** The study evaluates the effectiveness and durability of mRNA vaccine-induced SARS-CoV-2-specific immunity in severe asthma patients on biological therapy. Results show that treatment with biological therapy does not compromise the effectiveness or durability of vaccine-induced immunity.
- **Country:** Czech Republic
- **Citation:** Podrazil, M., Taborska, P., Stakheev, D., Rataj, M., Lastovicka, J., Vlachova, A., Pohunek, P., Bartunkova, J., & Smrz, D. (2022). Effectiveness and durability of mRNA Vaccine-Induced SARS-COV-2-Specific humoral and cellular immunity in severe asthma patients on biological therapy. *Frontiers in Immunology*, 13. <https://doi.org/10.3389/fimmu.2022.892277>

Immunogenicity and Safety of the Spikevax® (Moderna) mRNA SARS-CoV-2 Vaccine in Patients with Primary Humoral Immunodeficiency

- **Summary:** The study evaluated the safety and immunogenicity of Spikevax® vaccine against SARS-CoV-2 in patients with primary humoral immunodeficiency. Results showed predominantly mild adverse events, with vaccine response negatively correlated with Immune Deficiency and Dysregulation Activity. No SARS-CoV-2 infection was reported within 6 months after the second vaccination.
- **Country:** Czech Republic
- **Citation:** Kralickova, P., Jankovicova, K., Sejkorova, I., Soucek, O., Koprivova, K., Drahosova, M., Andrys, C., & Krejsek, J. (2022). Immunogenicity and Safety of the Spikevax® (Moderna) mRNA SARS-CoV-2 Vaccine in Patients with Primary Humoral Immunodeficiency. *International Archives of Allergy and Immunology*, 183(12), 1297–1310. <https://doi.org/10.1159/000526375>

Gliadin

2020

Metabolic effects in patients with celiac disease, patients with nonceliac gluten sensitivity, and asymptomatic controls, after six months of a gluten-free diet

- **Summary:** A study evaluated the metabolic effects of a gluten-free diet (GFD) on patients with celiac disease (CD), nonceliac gluten sensitivity (NCGS), and asymptomatic controls over a 6-month period. The results showed that the GFD increased obesity and metabolic syndrome by 20% in CD patients, 5% in NCGS patients, and 20% in asymptomatic subjects. The study suggests that the metabolic benefits and risks of a GFD should be considered when prescribing it to different populations.
- **Country:** Mexico
- **Citation:** Remes-Troche, J., De J Cobos-Quevedo, O., Rivera-Gutiérrez, X., Hernández, G., De La Cruz-Patiño, E., & Uscanga-Domínguez, L. (2020). Metabolic effects in patients with celiac disease, patients with nonceliac gluten sensitivity, and asymptomatic controls, after six months of a gluten-free diet. *Revista De Gastroenterología De México*, 85(2), 109–117. <https://doi.org/10.1016/j.rgmxen.2019.02.011>

2019

Prevalence of Celiac Disease (CD) in Subjects with Dyspeptic Symptoms. A Case-Control Study

- **Summary:** In a study of 427 subjects, dyspepsia was more common in women, with postprandial fullness and early satiety as the most frequent symptoms. The prevalence of celiac disease (CD) was similar in both symptomatic and asymptomatic groups, suggesting that screening for CD in Mexican patients with dyspeptic symptoms may not be necessary, consistent with findings from other countries
- **Country:** Mexico
- **Citation:** Lara-Carmona, J., Amieva-Balmori, M., Martínez-Conejo, A., Jorge, F. J. C., García-Zermeño, K. R., Flores, K. H., Cid, H. V., & Troche, J. M. R. (2019). Mo1999 – Prevalence of Celiac Disease (CD) in Subjects with Dyspeptic Symptoms. A Case-Control Study. *Gastroenterology*, 156(6), S-918. [https://doi.org/10.1016/s0016-5085\(19\)39262-5](https://doi.org/10.1016/s0016-5085(19)39262-5)

Helicobacter

2015

Activation of *Helicobacter pylori* causes either autoimmune thyroid diseases or carcinogenesis in the digestive tract

- **Summary:** *Helicobacter pylori* stimulates immune system, develops autoimmune thyroiditis, and activates gastric and extra-gastric diseases. It inhibits cellular immune response, and can cause cancerogenesis. Successful eradication can prevent these complications.
- **Country:** Czech Republic
- **Citation:** Astl, J., & Šterzl, I. (2015). Activation of *Helicobacter pylori* causes either autoimmune thyroid diseases or carcinogenesis in the digestive tract. *Physiological Research*, S291–S301. <https://doi.org/10.33549/physiolres.933118>

2010

Lymphocyte proliferative response to *Helicobacter pylori* antigens in *H. pylori*-infected patients

- **Summary:** The study focused on immune responses to *Helicobacter pylori* (Hp) in patients with and without autoimmune thyroiditis (AT). After eradication therapy, immune reactivity increased in patients without AT but showed no significant change in those with AT. This suggests Hp inhibits immune responses, reversible by eradication. The lymphocyte transformation test is useful for detecting immune memory in Hp-infected patients.
- **Country:** Czech Republic
- **Citation:** Hybenova, M., Hrda, P., Potuznikova, B., Pavlik, E., Stejskal, V., Dosedel, J., & Sterzl, I. (2010). Lymphocyte proliferative response to *Helicobacter pylori* antigens in *H. pylori*-infected patients. *Folia Microbiologica*, 55(6), 649–656. <https://doi.org/10.1007/s12223-010-0105-7>

Measles

2024

Measles in Czech population with varying vaccination rates in 2018–2019: clinical and laboratory differences between vaccinated and unvaccinated individuals and their relevance to clinical practice

- **Summary:** The study assessed the impact of vaccination on the clinical course and immune response in a highly vaccinated population. Results showed significant differences in catarrhal symptoms, exanthema, and complications between groups. A redefinition of clinical case classification is needed to better capture modified measles.
- **Country:** Czech Republic
- **Citation:** Smíšková, D., Janovic, S., Kadeřávková, P., Nováková, L., Blechová, Z., Malý, M., & Limberková, R. (2024). Measles in Czech population with varying vaccination rates in 2018–2019: clinical and laboratory differences between vaccinated and unvaccinated individuals and their relevance to clinical practice. *Infectious Diseases*, 1–8. <https://doi.org/10.1080/23744235.2024.2339870>

Rheumatoid factor

2021

The value of anti-CarP and anti-PAD4 as markers of rheumatoid arthritis in ACPA/RF negative rheumatoid arthritis patients

- **Summary:** The study evaluates the value of anti-CarP and anti-PAD4 as useful RA markers. Results show a significant correlation between anti-PAD4 and ACPAs, RF, and anti-CarP, while no correlation exists between ACPAs and anti-CarP. Anti-CarP may be a useful biomarker for identifying ACPA/RF negative RA patients.
- **Country:** Poland
- **Citation:** Kolarz, B., Ciesla, M., Rosenthal, A. K., Dryglewska, M., & Majdan, M. (2021). The value of anti-CarP and anti-PAD4 as markers of rheumatoid arthritis in ACPA/RF negative rheumatoid arthritis patients. *Therapeutic Advances in Musculoskeletal Disease*, 13, 1759720X2198986. <https://doi.org/10.1177/1759720x21989868>

Tick-borne encephalitis virus

2024

A fatal case of tick-borne encephalitis in an immunocompromised patient: case report from Northeastern Poland and review of literature

- **Summary:** This study reports a case of TBE in a 36-year-old woman from Northeastern Poland. Despite initial negative serological tests for TBE virus antibodies, the patient, who had undergone corneal transplantation and immunosuppressive therapy, exhibited typical TBE symptoms. This highlights the challenge of diagnosing TBE, especially in immunocompromised individuals, where antibody production may be delayed.
- **Country:** Poland
- **Citation:** Czarnowska, A., Groth, M., Okrzeja, J., Garkowski, A., Kristoferitsch, W., Kułakowska, A., & Zajkowska, J. (2024). A fatal case of tick-borne encephalitis in an immunocompromised patient: case report from Northeastern Poland and review of literature. *Ticks and Tick-borne Diseases*, 15(1), 102273. <https://doi.org/10.1016/j.ttbdis.2023.102273>

Paretic complications of tick-borne encephalitis and Lyme neuroborreliosis in the Czech Republic: Characteristics and clinical outcome

- **Summary:** This study examines paretic complications in tick-borne encephalitis (TBE) and Lyme neuroborreliosis (LNB) patients, focusing on their severity, persistence, and impact on quality of life. Results showed that TBE patients had more persistent paresis, while LNB patients had fewer. Prevention is crucial for reducing long-term motor deficits in TBE patients.
- **Country:** Czech Republic
- **Citation:** Smíšková, D., Pícha, D., Slížek, M., & Džupová, O. (2024). Paretic complications of tick-borne encephalitis and Lyme neuroborreliosis in the Czech Republic: Characteristics and clinical outcome. *Ticks and Tick-borne Diseases*, 15(2), 102302. <https://doi.org/10.1016/j.ttbdis.2023.102302>

2023

Infection of wild-caught wood mice (*Apodemus sylvaticus*) and yellow-necked mice (*A. flavicollis*) with tick-borne encephalitis virus

- **Summary:** The study investigates the susceptibility of two wild rodent species, wood mouse and yellow-necked mouse, to tick-borne encephalitis virus infection in the Netherlands. Results suggest both species may contribute to the virus's transmission cycle, highlighting the importance of viraemic transmission.
- **Country:** Netherlands
- **Citation:** Bakker, J. W., Pascoe, E. L., Van De Water, S., Van Keulen, L., De Vries, A., Woudstra, L. C., Esser, H. J., Pijlman, G. P., De Boer, W. F., Sprong, H., Kortekaas, J., Schreur, P. J. W., & Koenraadt, C. J. M. (2023). Infection of wild-caught wood mice (*Apodemus sylvaticus*) and yellow-necked mice (*A. flavicollis*) with tick-borne encephalitis virus. *Scientific Reports*, 13(1). <https://doi.org/10.1038/s41598-023-47697-2>

2022

Use of Wild Ungulates as Sentinels of TBEV Circulation in a Naïve Area of the Northwestern Alps, Italy

- **Summary:** In northwestern Italy's Piedmont region, wild ungulates were tested for tick-borne encephalitis virus (TBEV) antibodies. Despite an increase in tick densities, no TBEV antibodies were found in the animals sampled from 2017 to 2019. While TBEV isn't currently circulating in the area, ongoing monitoring is essential due to its spread in neighbouring countries.
- **Country:** Italy
- **Citation:** Garcia-Vozmediano, A., Bellato, A., Rossi, L., Hoogerwerf, M. N., Sprong, H., & Tomassone, L. (2022). Use of wild ungulates as sentinels of TBEV circulation in a naïve area of the northwestern Alps, Italy. *Life*, 12(11), 1888. <https://doi.org/10.3390/life12111888>

2021

Broad and potent neutralizing human antibodies to tick-borne flaviviruses protect mice from disease

- **Summary:** This study explored human antibody responses to TBEV. Individuals recovered from natural infection exhibited potent neutralizing antibodies, effective against multiple tick-borne flaviviruses. Early antibody treatment showed efficacy in mice lethally TBEV infected.
- **Country:** Czech Republic, Switzerland, USA, UK
- **Citation:** Agudelo, M., Palus, M., Keeffe, J. R., Bianchini, F., Svoboda, P., Salát, J., Peace, A., Gazumyan, A., Cipolla, M., Kapoor, T., Guidetti, F., Yao, K., Elsterová, J., Teislerová, D., Chrdle, A., Hönig, V., Oliveira, T., West, A. P., Lee, Y. E., . . . Nussenzweig, M. C. (2021). Broad and potent neutralizing human antibodies to tick-borne flaviviruses protect mice from disease. *the Journal of Experimental Medicine/the Journal of Experimental Medicine*, 218(5). <https://doi.org/10.1084/jem.20210236>

Cross-Sectional Study on the Prevalence and Factors Influencing Occurrence of Tick-Borne Encephalitis in Horses in Lithuania

- **Summary:** A study in TBEV-endemic areas of Lithuania found that 37.5% of tested horses were TBEV IgG positive, with no age or sex difference but dependent on pedigree. TBEV prevalence in horses correlated with human cases, suggesting horses as effective sentinels for TBEV surveillance.
- **Country:** Lithuania
- **Citation:** Pautienius, A., Armonaitė, A., Simkute, E., Zagrabskaite, R., Buitkuvienė, J., Alpizar-Jara, R., Grigas, J., Zakienė, I., Zienius, D., Salomskas, A., & Stankevicius, A. (2021). Cross-Sectional study on the prevalence and factors influencing occurrence of Tick-Borne encephalitis in horses in Lithuania. *Pathogens*, 10(2), 140. <https://doi.org/10.3390/pathogens10020140>

Detection of Antibodies Against Tick-Borne Encephalitis Virus and Other Flaviviruses in a Zoological Collection in Slovenia

- **Summary:** This study investigated flavivirus antibodies in animals at Ljubljana Zoo, Slovenia. Of 874 sera tested, 3.9% were positive for tick-borne encephalitis virus (TBEV), mainly in mammals (4%) and birds (5%). The findings suggest zoological collections could aid in monitoring infectious diseases locally.
- **Country:** Slovenia, Czech Republic
- **Citation:** Kvapil, P., Račnik, J., Kastelic, M., Pittermannová, P., Avšič-Zupanc, T., Bártová, E., & Sedlák, K. (2021). Detection of antibodies against Tick-Borne encephalitis virus and other flaviviruses in a zoological collection in Slovenia. *Frontiers in Veterinary Science*, 8. <https://doi.org/10.3389/fvets.2021.688904>

Detection of Antibodies against Tick-Borne Encephalitis Virus in Zoo Animals Using Non-Invasive Blood Sampling with Medicinal Leeches (*Hirudo medicinalis*)

- **Summary:** This study explored non-invasive blood sampling using medicinal leeches for arbovirus epidemiological investigations in zoo animals. Of the 35 animals tested across 11 species, one (*Ovis aries*) was seropositive for TBEV. The findings suggest that this method could be a promising alternative to invasive techniques, facilitating preventive medicine and epidemiological research in zoo animals.
- **Country:** Czech Republic, Slovenia
- **Citation:** Kvapil, P., Kastelic, M., Jež, N., Sedlák, K., Kašpárková, N., Jelovšek, M., Avšič-Zupanc, T., Bártová, E., & Račnik, J. (2021). Detection of Antibodies against Tick-Borne Encephalitis Virus in Zoo Animals Using Non-Invasive Blood Sampling with Medicinal Leeches (*Hirudo medicinalis*). *Pathogens*, 10(8), 952. <https://doi.org/10.3390/pathogens10080952>

Exposure to tick-borne encephalitis virus among nature management workers in the Netherlands

- **Summary:** A study in the Netherlands found that occupationally high-risk individuals, including nature management workers, had a low seroprevalence of tick-borne encephalitis virus (TBEV) exposure, despite reporting a six-fold higher exposure compared to the general population. This highlights the need for education and preventative measures.
- **Country:** Netherlands
- **Citation:** Hofhuis, A., Van Den Berg, O., Meerstadt-Rombach, F., Van Den Wijngaard, C., Chung, N., Franz, E., & Reimerink, J. (2021). Exposure to tick-borne encephalitis virus among nature management workers in the Netherlands. *Ticks and Tick-borne Diseases*, 12(5), 101762. <https://doi.org/10.1016/j.ttbdis.2021.101762>

2019

Analysis of cross-reactivity between flaviviruses with sera of patients with Japanese encephalitis showed the importance of neutralization tests for the diagnosis of Japanese encephalitis

- **Summary:** The study analyzes cross-reactivity between Japanese encephalitis (JE) and other flaviviruses using ELISA and neutralization tests. Sixteen serum samples were tested for IgM and IgG antibodies against WNV, dengue, Zika, and tick-borne encephalitis virus. Results show neutralization tests are more specific than ELISA in detecting JE.
- **Country:** Japan
- **Citation:** Maeki, T., Tajima, S., Ikeda, M., Kato, F., Taniguchi, S., Nakayama, E., Takasaki, T., Lim, C., & Saijo, M. (2019). Analysis of cross-reactivity between flaviviruses with sera of patients with Japanese encephalitis showed the importance of neutralization tests for the diagnosis of Japanese encephalitis. *Journal of Infection and Chemotherapy*, 25(10), 786–790. <https://doi.org/10.1016/j.jiac.2019.04.003>

2015

Identification of the Siberian type tick-borne encephalitis virus and serological surveillance in Mongolia

- **Summary:** The study conducted serosurveillance for tick-borne encephalitis virus (TBEV) in Mongolia, isolated it using in vivo methods, and determined its subtypes. Blood samples from 750 domestic animals were tested for antibodies, and the results indicated TBEV in Mongolia belongs to the Siberian subtype.
- **Country:** Mongolia
- **Citation:** Erdenechimeg, D., Boldbaatar, B., Enhmandakh, Y., Myagmarsukh, Y., Oyunnomin, N., & Purevtseren, B. (2015). IDENTIFICATION OF THE SIBERIAN TYPE TICK-BORNE ENCEPHALITIS VIRUS AND SEROLOGICAL SURVEILLANCE IN MONGOLIA. Mongolian Journal of Agricultural Sciences/Hôdôô Až Ahujn Šinžlêh Uhaan, 13(2), 19–26. <https://doi.org/10.5564/mjas.v13i2.508>

2006

Dairy goats - indicators of some zoonotic pathogens in the environment

- **Summary:** In a study on Tick Borne Encephalitis (TBE) causes, 970 Ixodes ricinus samples were collected. Goat populations were also tested for Toxoplasma gondii and TBE virus antibodies. Results showed 4 out of 5 goat herds had antibodies to both pathogens. In infected herds, 52.63% had T. gondii antibodies, and 11.8% had TBE virus antibodies, with significant age group differences noted.
- **Country:** Lithuania
- **Citation:** Stimbirys, A., Bagdonas, J., Jokimas, J., & Nekrosiene, N. (2006). Dairy goats - indicators of some zoonotic pathogens in the environment. Medycyna Weterynaryjna, 62(06), 644–648. <http://agro.icm.edu.pl/agro/element/bwmeta1.element.agro-article-07f23b04-803c-4e19-9e69-a2aae638155a>

2001

Prevalence of antibodies to tickborne encephalitis and West Nile flaviviruses and the clinical signs of tickborne encephalitis in dogs in the Czech Republic

- **Summary:** A study of 151 dogs in the Czech Republic found antibodies to tickborne encephalitis (TBE) and West Nile flaviviruses, with five dogs showing high TBE titres, and three showing meningoencephalitis or encephalitis.
- **Country:** Czech Republic
- **Citation:** Klimeš, J., Literák, I., Schánilec, P., Juřicová, Z., & Silva, E. T. E. (2001). Prevalence of antibodies to tickborne encephalitis and West Nile flaviviruses and the clinical signs of tickborne encephalitis in dogs in the Czech Republic. Veterinary Record/the Veterinary Record, 148(1), 17–20. <https://doi.org/10.1136/vr.148.1.17>

Toxocara

2022

Study of IgG avidity and the level of specific IgA antibodies and their significance in the diagnosis of human toxocarosis

- **Summary:** This study investigated IgG avidity and IgA antibodies in 130 patients with toxocarosis. Results showed low IgG avidity in 7.3% and anti-Toxocara IgA antibodies in 26.2%. IgG avidity was low initially, while IgA antibodies persisted for up to 9 months, suggesting IgG avidity is more useful for determining disease stage.

- **Country:** Bulgaria
- **Citation:** Kaneva, E., Rainova, I., Harizanov, R., & Kaftandjiev, I. (2022). Study of IgG avidity and the level of specific IgA antibodies and their significance in the diagnosis of human toxocarosis. *Experimental Parasitology*, 236–237, 108236. <https://doi.org/10.1016/j.exppara.2022.108236>

2021

A rare clinical presentation of human *Dirofilaria repens* infection as a pseudo-tumour of the epididymis – Case Report

- **Summary:** Epididymal dirofilariasis, a rare form of this zoonotic infection, was identified in Slovakia, the third case among 20 *Dirofilaria repens* infections. The patient presented with a painless testicular tumor, later confirmed as a cyst containing a live worm via ultrasound. Objective: This report aims to raise awareness among physicians about epididymal dirofilariasis and its clinical presentation.
- **Country:** Slovakia
- **Citation:** Nagy, V., & Nagyová, D. (2021). A rare clinical presentation of human *Dirofilaria repens* infection as a pseudo-tumour of the epididymis – Case Report. *AAEM. Annals of Agricultural and Environmental Medicine/Annals of Agricultural and Environmental Medicine*, 28(2), 348–351. <https://doi.org/10.26444/aaem/136387>

2020

Urticaria and silent parasitism by *Ascaridoidea*: Component-resolved diagnosis reinforces the significance of this association

- **Summary:** This study aimed to analyze the relationship between parasitism by *Ascarididae* (*Toxocara canis* and *Anisakis simplex*) and urticaria clinical expression. Results showed significant differences in IgG and IgE antibodies against *Anisakis simplex* larvae and *Toxocara canis*. Tropomyosin and Ani s 1 were identified as the most relevant markers for urticaria association with *Ascarididae* parasites in a region.
- **Country:** Spain
- **Citation:** Viñas, M., Postigo, I., Suñén, E., & Martínez, J. (2020). Urticaria and silent parasitism by *Ascaridoidea*: Component-resolved diagnosis reinforces the significance of this association. *PLoS Neglected Tropical Diseases*, 14(4), e0008177. <https://doi.org/10.1371/journal.pntd.0008177>

Toxoplasma

2024

Cognitive Effects of *Toxoplasma* and CMV Infections: A Cross-Sectional Study of 557 Young Adults Considering Modulation by Sex and Rh Factor

- **Summary:** The study reveals cognitive impairments in *Toxoplasma gondii* and human cytomegalovirus in 557 students, with lower IQ in men and worse performance in women. The findings suggest pathological changes in the brain are responsible.
- **Country:** Czech Republic
- **Citation:** Flegr, J., Chvátalová, V., Příplatová, L., Tureček, P., Kodým, P., Šebánková, B., & Kaňková, Š. (2024). Cognitive effects of toxoplasma and CMV infections: A Cross-Sectional study of 557 young adults considering modulation by sex and RH factor. *Pathogens*, 13(5), 363. <https://doi.org/10.3390/pathogens13050363>

Oral Sex as a Potential Route for *Toxoplasma Gondii* Transmission: Experiment with Human Semen and Laboratory Mice Model

- **Summary:** The study aimed to experimentally test the hypothesis of *Toxoplasma gondii* transmission through oral sex. Semen samples from men with latent toxoplasmosis were orally administered to laboratory mice, but parasite transmission was not observed. While this does not definitively dismiss the possibility of transmission in humans, the results suggest that if it occurs, it is likely infrequent.
- **Country:** Czech Republic
- **Citation:** Ullmann, J., Kodym, P., Flegr, J., Berenová, D., Jirsová, S., & Kaňková, Š. (2024). Oral Sex as a Potential Route for *Toxoplasma Gondii* Transmission: Experiment with Human Semen and Laboratory Mice Model. *Acta Parasitologica*. <https://doi.org/10.1007/s11686-024-00848-5>

2022

Detection of persistent low IgG avidity—an interpretative problem in the diagnosis of acute toxoplasmosis

- **Summary:** A study examining 717 serum samples from 442 patients found that 42.1% of patients had initially low avidity in acute toxoplasmosis, while 13.0% in non-acute groups. The study suggests high avidity can rule out acute toxoplasmosis, but moderate sensitivity complicates confirmation. Results should be interpreted in context with other methods.
- **Country:** Czech Republic
- **Citation:** Kodym, P., Kurzová, Z., Berenová, D., & Malý, M. (2023). Detection of persistent low IgG avidity—an interpretative problem in the diagnosis of acute toxoplasmosis. *PloS One*, 18(4), e0284499. <https://doi.org/10.1371/journal.pone.0284499>

2021

Parasitic and Vector-Borne Infections in HIV-Positive Patients in Slovakia—Evidence of an Unexpectedly High Occurrence of *Anaplasma phagocytophilum*

- **Summary:** This study examined IgG seropositivity to *Toxoplasma gondii* and other pathogens in HIV-infected patients. Out of 89 patients, 19.1% were seropositive for *T. gondii*, and 13.5% for *Borrelia* spp. Molecular analysis detected *T. gondii* in 2.2% and *Anaplasma phagocytophilum* in 12.4% of patients, emphasizing the risk of opportunistic infections in immunocompromised individuals.
- **Country:** Slovakia
- **Citation:** Šimeková, K., Soják, L., Víchová, B., Balogová, L., Jarošová, J., & Antolová, D. (2021). Parasitic and Vector-Borne Infections in HIV-Positive Patients in Slovakia—Evidence of an Unexpectedly High Occurrence of *Anaplasma phagocytophilum*. *Pathogens*, 10(12), 1557. <https://doi.org/10.3390/pathogens10121557>

2018

Exposure to *Toxoplasma gondii* in the Roma and Non-Roma Inhabitants of Slovakia: A Cross-Sectional Seroprevalence Study

- **Summary:** The study found that the seropositivity to *Toxoplasma gondii* (*T. gondii*) in Roma living in segregated settlements was significantly higher than in non-Roma inhabitants, with poverty and higher age being significant risk factors. Insufficient hygiene, education, and household equipment increase the risk of infectious diseases.
- **Country:** Slovakia
- **Citation:** Antolová, D., Janičko, M., Halánová, M., Jarčuška, P., Gecková, A. M., Babinská, I., Kalinová, Z., Pella, D., Mareková, M., Veseliny, E., & Team, H. (2018). Exposure to *Toxoplasma gondii* in the Roma and Non-Roma Inhabitants of Slovakia: A Cross-Sectional Seroprevalence Study. *International Journal of Environmental Research and Public Health/International Journal of Environmental Research and Public Health*, 15(3), 408. <https://doi.org/10.3390/ijerph15030408>

2014

Survey of *Toxoplasma gondii* antibodies in meat juice of wild boar (*Sus scrofa*) in several districts of the Czech Republic

- **Summary:** The study aimed to detect antibodies against *Toxoplasma gondii* from wild boar meat, establish seroprevalence of toxoplasmosis in the wild boar population, identify risk factors, and estimate the usefulness of meat juice for detection. Results showed that consumption of raw or undercooked meat from wild boars increases the risk of toxoplasma infection.
- **Country:** Czech Republic
- **Citation:** Račka, K., Bártová, E., Budíková, M., & Vodrážka, P. (2015). Survey of *Toxoplasma gondii* antibodies in meat juice of wild boar in several districts of the Czech Republic. AAEM. Annals of Agricultural and Environmental Medicine/Annals of Agricultural and Environmental Medicine, 22(2), 231–235. <https://doi.org/10.5604/12321966.1152071>

2013

Incidence and clinical and immunological characteristics of primary *Toxoplasma gondii* infection in HIV-infected patients

- **Summary:** The study analyzed the incidence and laboratory characteristics of primary *Toxoplasma gondii* infection in HIV-infected individuals. Results showed 14 infections, with most asymptomatic. Patients with primary toxoplasmosis had higher initial immunoglobulin levels and CD8+ T lymphocyte counts.
- **Country:** Czech Republic
- **Citation:** Machala, L., Malý, M., Beran, O., Jilich, D., & Kodym, P. (2013). Incidence and clinical and immunological characteristics of primary *Toxoplasma gondii* infection in HIV-infected patients. International Journal of Infectious Diseases, 17(10), e892–e896. <https://doi.org/10.1016/j.ijid.2013.03.017>

2007

Evaluation of a commercial IgE ELISA in comparison with IgA and IgM ELISAs, IgG avidity assay and complement fixation for the diagnosis of acute toxoplasmosis

- **Summary:** A study assessed five serological tests to differentiate between acute and latent toxoplasmosis. IgM ELISA and CFT were the most sensitive but with low specificity. IgG avidity assay and IgE ELISA showed high specificity and positive predictive values. IgE ELISA had the best association with clinical findings and proved highly specific for confirming acute *Toxoplasma* infections.
- **Country:** Czech Republic
- **Citation:** Kodym, P., Machala, L., Roháčová, H., Širocká, B., & Malý, M. (2007). Evaluation of a commercial IgE ELISA in comparison with IgA and IgM ELISAs, IgG avidity assay and complement fixation for the diagnosis of acute toxoplasmosis. Clinical Microbiology and Infection, 13(1), 40–47. <https://doi.org/10.1111/j.1469-0691.2006.01564.x>

CLIA

Borrelia

2023

Comparison of methods for determining antibodies against *Borrelia* spp. in early and late forms of Lyme disease

- **Summary:** The comparison shows that the new generation of CLIA serological methods has the same sensitivity and specificity as ELISA, and the results also agree with the latest MBA confirmation method. The results of the development of antibodies in various manifestations of LB can be helpful in the diagnosis of the disease and the subsequent treatment of the patient.
- **Country:** Czech Republic
- **Poster link:** https://www.testlinecd.com/dmsdownload/5297743/POSTER_MBA,-CLIA,-EIA-Borrelia_Comparison-of-methods-for-determining-Borrelia-antibodies.pdf

MxA

2023

Acute Viral and Bacterial Infection Differentiation: Comparison of Novel Analytical Methods of Myxovirus Resistance Protein A (MxA) Quantitative Determination

- **Summary:** Differentiating viral from bacterial infections early is challenging, often resulting in unnecessary antibiotic use and resistance. Myxovirus resistance protein A (MxA) emerges as a promising marker, with studies demonstrating elevated levels in viral infections. The newly developed sensitive CLIA method shows strong correlation with ELISA, as does the innovative LFT Bi-VirTest®. The study concludes that CLIA is well-suited for meeting the clinical laboratory's requirements.
- **Country:** Czech Republic
- **Poster link:** https://www.researchgate.net/profile/MartinaHlozankova/publication/377438485_Acute_Viral_and_Bacterial_Infection_Differentiation_Comparison_of_Novel_Analytical_Methods_of_Myxovirus_Resistance_Protein_A_MxA_Quantitative_Determination/links/65a6ecb5cc780a4b19bf3d14/Acute-Viral-and-Bacterial-Infection-Differentiation-Comparison-of-Novel-Analytical-Methods-of-Myxovirus-Resistance-Protein-A-MxA-Quantitative-Determination.pdf

Microblot-Array

ANA

2025

Immunological imprinting by seasonal coronaviruses and previous herpesvirus infections in patients with long COVID

- **Summary:** This study explores whether immunological imprinting from endemic coronaviruses, prior herpesvirus infections and reactivations, and autoimmunity contribute to long covid (LC). Conclusion for MBA:
 - i. Lower CMV p65 IgG levels correlate with increased fatigue severity, highlighting a potential link between herpesvirus-specific immunity and LC symptoms.
 - ii. LC patients do not express specific ANA
- **Country:** Netherlands
- **Poster link:** [https://www.testlinecd.com/dmsdownload/6397922/POSTER_Immunological-imprinting-by-seasonal-coronaviruses-and-previous-herpesvirus-infections-in-long-covid-patients-\(Netherlands,-2024\).pdf](https://www.testlinecd.com/dmsdownload/6397922/POSTER_Immunological-imprinting-by-seasonal-coronaviruses-and-previous-herpesvirus-infections-in-long-covid-patients-(Netherlands,-2024).pdf)

2024

A comparative study of Microblot-Array with conventional routine methods for the detection of antibodies associated with SLE and Scl in Czech population

- **Summary:** The comparison shows that MBA is a reliable method for diagnosing AIDs, aligning well with traditional tests like BLOT and IFA. This signals a new era in ANA testing, with MBA offering precision and efficiency. It can detect multiple disorders in one test, speeding up diagnostics, promising quicker, personalized treatment, and improved patient lives.
- **Country:** Czech Republic
- **Poster link:** [https://www.testlinecd.com/dmsdownload/5846017/POSTER_MBA-ANA_A-comparative-study-of-MBA-with-conventional-routine-methods-for-the-detection-of-antibodies-associated-with-SLE-and-Scl-in-Czech-population-\(Czech-Republic,-2024\).pdf](https://www.testlinecd.com/dmsdownload/5846017/POSTER_MBA-ANA_A-comparative-study-of-MBA-with-conventional-routine-methods-for-the-detection-of-antibodies-associated-with-SLE-and-Scl-in-Czech-population-(Czech-Republic,-2024).pdf)

Assessment of the possible role of Microblot-Array in the diagnostic flow-chart of a specialist referral laboratory for autoimmune diseases

- **Summary:** These preliminary findings suggest that the new Microblot-Array could serve as a complementary or confirmatory tool rather than a primary screening test. Its utilization of multiple antigen mixes may reduce the need for different blots. However, its role requires prospective validation in a clinically diverse population. MBA appears promising as an IFI or CTD support tool.
- **Country:** Italy
- **Poster link:** [https://www.testlinecd.com/dmsdownload/5846259/POSTER_MBA-ANA_Assessment-of-the-possible-role-of-Micro-Array-testing-in-the-diagnostics-flow-chart-of-a-specialist-referral-laboratory-for-autoimmune-diseases-\(Italy,-2024\).pdf](https://www.testlinecd.com/dmsdownload/5846259/POSTER_MBA-ANA_Assessment-of-the-possible-role-of-Micro-Array-testing-in-the-diagnostics-flow-chart-of-a-specialist-referral-laboratory-for-autoimmune-diseases-(Italy,-2024).pdf)

Clinical relevance and frequency of cytoplasmic patterns observed in ANA-Hep-2: experience of Cairo University Hospitals

- **Summary:** This study examines the clinical value of cytoplasmic ANA patterns in autoimmune diseases, analyzing 2,741 samples. Of these, 92 cases with positive cytoplasmic staining were further tested with Microblot-Array ANA plus for 44 autoantibodies. Reticular patterns, often linked to primary biliary cholangitis, and dense fine speckled patterns, related to systemic lupus erythematosus, were common.

The findings highlight the diagnostic importance of cytoplasmic staining in autoimmune assessments, suggesting that larger studies on treatment-naïve patients are warranted.

- **Country:** Egypt
- **Citation:** Abdelraouf, F. H., Soliman, O. D., Khateeb, E. M. E., & Mostafa, A. E. (2024). Clinical relevance and frequency of cytoplasmic patterns observed in ANA-Hep-2: experience of Cairo University Hospitals. Immunologic Research. <https://doi.org/10.1007/s12026-024-09551-z>

ICAP classification patterns under magnifying glass of multiplex antibodies detections

- **Summary:** The conclusion from the study is that negative results from the MBA for weak positive IIF titers (1/80 and 1/160) suggest the presence of ANA in healthy individuals or in different pathologies. This highlights the importance of considering these factors when interpreting IIF ANA Hep-2 results. Additionally, the new generation immunoblot array confirmed antigens associated with different ICAP patterns starting from 1/320. However, further studies are required for AC-2 (DFS-70).
- **Country:** Romania
- **Poster link:** [https://www.testlinecd.com/dmsdownload/5846260/POSTER_MBA-ANA_ICAP-classification-patterns-under-magnifying-glass-of-multiplex-antibodies-detections-\(Romania,2024\).pdf](https://www.testlinecd.com/dmsdownload/5846260/POSTER_MBA-ANA_ICAP-classification-patterns-under-magnifying-glass-of-multiplex-antibodies-detections-(Romania,2024).pdf)

2023

Analysis of the clinical features of antisynthetase syndrome: a retrospective cohort study in China

- **Summary:** The study summarizes the clinical, serological, and radiological characteristics of anti-synthetase syndrome.
- **Country:** China
- **Citation:** Wang, R., Zhao, Y., Qi, F., Wu, X., Wang, Y., Xu, Y., Wu, Y., Zhang, N., Hou, H., Sun, W., Li, X., & Wei, W. (2022). Analysis of the clinical features of antisynthetase syndrome: a retrospective cohort study in China. Clinical Rheumatology, 42(3), 703–709. <https://doi.org/10.1007/s10067-022-06404-8>

Borrelia

2025

Prevalence of Borrelia burgdorferi sensu lato infection in the Czech Republic

- **Summary:** The study investigates the prevalence of Borrelia burgdorferi sensu lato (Bbsl) infection, responsible for Lyme borreliosis (LB), in the Czech Republic. It found a 9.5% prevalence of anti-Bbsl IgM/IgG antibodies among adults, indicating frequent exposure to Bbsl-infected ticks. The prevalence and infection rates were higher in Moravia than in Bohemia. In 2012, an estimated 30,563 symptomatic Bbsl infections occurred, corresponding to an incidence rate of 352.2 per 100,000 adults annually. However, public health surveillance significantly underreported cases, identifying only one LB case for every 11 symptomatic infections. The study underscores the high burden of Lyme disease in the Czech Republic and calls for improved surveillance and prevention strategies.
- **Notes:** This study was supported and jointly funded by Valneva and Pfizer as part of their co-development of a Lyme disease vaccine. The target antigen OspA, which plays a central role in this vaccine, is included in TestLine Borrelia kits.
- **Country:** Czech Republic
- **Citation:** Chlibek, R., Smetana, K. J., Kybicová, K. K., Malikova, M., Angulo, F. J., Loew-Baselli, A., Tan, Y., Ondřejíček, O., Brestrich, G., Pilz, A., Moisi, M. C., & Stark, J. H. (2025). Prevalence of Borrelia burgdorferi sensu lato infection in the Czech Republic. *International Journal of Medical Microbiology*, 151644. <https://doi.org/10.1016/j.ijmm.2024.151644>

2024

Granulocytic Anaplasmosis – an underdiagnosed disease in veterinary and human medicine in Romania

- **Summary:** Vector-borne diseases are widespread in Europe and impact both health and the economy. From Oct 2022 to Sept 2023, 25 dog and 21 human samples were tested for Anaplasma and Borrelia. In dogs, 32% showed morulae, 44% had antibodies, and 16% were PCR-positive. In humans, 38.1% were positive for both pathogens, and 33.4% for Borrelia alone. The study assessed the prevalence and co-infections of granulocytic anaplasmosis.
- **Country:** Romania
- **Link:** [Granulocytic anaplasmosis - a underdiagnosed disease in veterinary and human medicine in Romania](#)

2023

Comparison of methods for determining antibodies against Borrelia spp. in early and late forms of Lyme disease

- **Summary:** The comparison shows that the new generation of CLIA serological methods has the same sensitivity and specificity as ELISA, and the results also agree with the latest MBA confirmation method. The results of the development of antibodies in various manifestations of LB can be helpful in the diagnosis of the disease and the subsequent treatment of the patient.
- **Country:** Czech Republic
- **Poster link:** [https://www.testlinecd.com/dmsdownload/5297743/POSTER MBA,-CLIA,-EIA-Borrelia Comparison-of-methods-for-determining-Borrelia-antibodies.pdf](https://www.testlinecd.com/dmsdownload/5297743/POSTER_MBA,-CLIA,-EIA-Borrelia_Comparison-of-methods-for-determining-Borrelia-antibodies.pdf)

2022

Correlation between COVID-19 severity and previous exposure of patients to Borrelia spp

- **Summary:** The study found a strong link between COVID-19 severity and Lyme disease, suggesting a history of tick bites may increase risks. Screening for Borrelia antibodies could help assess hospitalization odds for COVID-19 patients, supporting disease control efforts.
- **Country:** Poland
- **Citation:** Szewczyk-Dąbrowska, A., Budziar, W., Harhala, M., Baniecki, K., Pikies, A., Jędruchiewicz, N., Kaźmierczak, Z., Gembara, K., Klimek, T., Witkiewicz, W., Nahorecki, A., Barczyk, K., Kłak, M., Grata-Borkowska, U., & Dąbrowska, K. (2022). Correlation between COVID-19 severity and previous exposure of patients to Borrelia spp. Scientific Reports (Nature Publishing Group), 12(1). <https://doi.org/10.1038/s41598-022-20202-x>

2015

Microarray immunoblot in the diagnosis of paediatric Lyme neuroborreliosis

- **Summary:** The microarray, with 19 Borrelia antigens, boosts specificity, detecting crucial antibodies for early infection like VlsE and OspC. It improves CSF antibody detection sensitivity compared to immunoblots. Though highly sensitive, one case with erythema migrans and meningoneuritis went undiagnosed from CSF. Both tests show comparable statistical significance, favoring the microarray immunoblot assay as confirmation of EIA screening.
- **Country:** Czech Republic
- **Poster link:** [https://www.testlinecd.com/dmsdownload/4646482/POSTER MBA-Borrelia Microarray-immunoblot-in-the-diagnosis-of-pediatric-Lyme-neuroborreliosis-\(Czech-Republic\).pdf](https://www.testlinecd.com/dmsdownload/4646482/POSTER_MBA-Borrelia_Microarray-immunoblot-in-the-diagnosis-of-pediatric-Lyme-neuroborreliosis-(Czech-Republic).pdf)

COVID

2025

Dynamics of the level anti-SARS antibodies within a year after three vaccinations of patients with prostate cancer

- **Summary:** A study assessing anti-SARS-CoV-2 antibody levels in Polish men with prostate cancer found a significant decrease in antibody titer after three doses of the Pfizer-BioNTech vaccine. The study suggests that PCa patients should be vaccinated more frequently than once a year to increase protection.
- **Country:** Poland
- **Citation:** Michalski, A., Kis, J., Drop, K., Jarosz, M., & Polz-Dacewicz, M. (2025). Dynamics of the level of anti-SARS antibodies within a year after three vaccinations of patients with prostate cancer. *Current Issues in Pharmacy and Medical Sciences*, 38(1), 45–49. <https://doi.org/10.12923/cipms-2025-0007>

Immunological imprinting by seasonal coronaviruses and previous herpesvirus infections in patients with long COVID

- **Summary:** This study explores whether immunological imprinting from endemic coronaviruses, prior herpesvirus infections and reactivations, and autoimmunity contribute to long covid (LC). Conclusion for MBA:
 - i. Lower CMV p65 IgG levels correlate with increased fatigue severity, highlighting a potential link between herpesvirus-specific immunity and LC symptoms.
 - ii. LC patients do not express specific ANA
- **Country:** Netherlands
- **Poster link:** [https://www.testlinecd.com/dmsdownload/6397922/POSTER_Immunological-imprinting-by-seasonal-coronaviruses-and-previous-herpesvirus-infections-in-long-covid-patients-\(Netherlands.-2024\).pdf](https://www.testlinecd.com/dmsdownload/6397922/POSTER_Immunological-imprinting-by-seasonal-coronaviruses-and-previous-herpesvirus-infections-in-long-covid-patients-(Netherlands.-2024).pdf)

2024

Humoral anti-SARS-CoV-2 response in patients with different long COVID phenotypes

- **Summary:** This study examined humoral responses in individuals with Long COVID (LC). LC patients showed decreased seroprevalence of IgG antibodies against NP and lower levels of S1, S2, and RBD antibodies compared to those without LC. These findings suggest a diminished humoral response to SARS-CoV-2 in LC patients, with potential implications for post-acute viral sequelae.
- **Country:** Poland
- **Citation:** Rzymiski, P., Niedziela, J., Poniedziałek, B., Rosińska, J., Zarębska-Michaluk, D., Sobala-Szczygieł, B., Flisiak, R., Gąsior, M., & Jaroszewicz, J. (2024). Humoral anti-SARS-CoV-2 response in patients with different long COVID phenotypes. *Virology*, 110118. <https://doi.org/10.1016/j.virol.2024.110118>

Influenza vaccination as a prognostic factor of humoral IgA responses to SARS-CoV-2 infection

- **Summary:** Influenza vaccination may enhance immune responses to SARS-CoV-2. This study compared COVID-19 patients' IgA responses, finding higher levels in those vaccinated against influenza. Further research is needed to understand the underlying mechanisms.
- **Country:** Poland
- **Citation:** Poniedziałek, B., Sikora, D., Hallmann, E., Brydak, L., & Rzymiski, P. (2024). Influenza vaccination as a prognostic factor of humoral IgA responses to SARS-CoV-2 infection. *Central-European Journal of Immunology/Central European Journal of Immunology*. <https://doi.org/10.5114/ceji.2024.135462>

SARS CoV-2 in tumor tissue in glioblastoma patients – preliminary study

- **Summary:** The study explores the relationship between SARS-CoV-2 and glioblastoma, a highly aggressive brain tumor. Researchers detected SARS-CoV-2 RNA in the tumor tissue of 20% of glioblastoma patients, suggesting the virus may have a tropism for glial cells. Patients with SARS-CoV-2 RNA in tumor tissue exhibited higher levels of anti-SARS-CoV-2 antibodies compared to those without viral RNA, indicating potential asymptomatic infections.
- The findings underscore the need for further research into how SARS-CoV-2 crosses the blood-brain barrier and its implications for glioblastoma progression. This preliminary study highlights the interplay between viral infections and brain tumors, opening avenues for future investigations.
- **Country:** Poland
- **Citation:** Brzozowski, M., Kolesnik, M., Michalski, A., Drop, K., & Polz-Dacewicz, M. (2024). SARS CoV-2 in tumor tissue in glioblastoma patients – preliminary study. *Current Issues in Pharmacy and Medical Sciences*, 37(4), 216–220. <https://doi.org/10.2478/cipms-2024-0035>

2023

Association between the Seroprevalence of Antibodies against Seasonal Alphacoronaviruses and SARS-CoV-2 Humoral Immune Response, COVID-19 Severity, and Influenza Vaccination

- **Summary:** The study examines the seroprevalence of antibodies against seasonal human alphacoronaviruses 229E and NL63 in Polish adult patients infected with SARS-CoV-2. It suggests that exposure to these viruses may improve humoral responses and decrease the clinical significance of the infection, supporting influenza vaccination.
- **Country:** Poland
- **Citation:** Brydak, L., Sikora, D., Poniedziałek, B., Hallmann, E., Szymański, K., Kondratiuk, K., & Rzymiski, P. (2023). Association between the Seroprevalence of Antibodies against Seasonal Alphacoronaviruses and SARS-CoV-2 Humoral Immune Response, COVID-19 Severity, and Influenza Vaccination. *Journal of Clinical Medicine*, 12(5), 1733. <https://doi.org/10.3390/jcm12051733>

Clinical outcomes, immunogenicity, and safety of BNT162b22 Vaccine in Primary Antibody Deficiency

- **Summary:** The study evaluated the clinical outcomes, safety, and dynamics of humoral and T-cell immune responses in 21 patients with CVID after administering the mRNA vaccine BNT162b2. Results showed a measurable antibody response in a high proportion of patients but limited by low titer of virus-neutralizing antibodies.
- **Country:** Czech Republic
- **Citation:** Milota, T., Smetanova, J., Skotnicova, A., Rataj, M., Lastovicka, J., Zelena, H., Parackova, Z., Fejtikova, M., Kanderova, V., Fronkova, E., Rejlova, K., Sediva, A., & Kalina, T. (2023). Clinical outcomes, immunogenicity, and safety of BNT162B2 vaccine in primary antibody deficiency. *Journal of Allergy and Clinical Immunology. In Practice/theJournal of Allergy and Clinical Immunology. In Practice*, 11(1), 306-314.e2. <https://doi.org/10.1016/j.jaip.2022.10.046>

Comparison of methods for determining antibodies against *Borrelia* spp. in early and late forms of Lyme disease

- **Summary:** The comparison shows that the new generation of CLIA serological methods has the same sensitivity and specificity as ELISA, and the results also agree with the latest MBA confirmation method. The results of the development of antibodies in various manifestations of LB can be helpful in the diagnosis of the disease and the subsequent treatment of the patient.
- **Country:** Czech Republic
- **Poster link:** https://www.testlinecd.com/dmsdownload/5297743/POSTER_MBA,-CLIA,-EIA-Borrelia_Comparison-of-methods-for-determining-Borrelia-antibodies.pdf

Humoral response after breakthrough SARS-CoV-2 infection in type 2 diabetes mellitus patients

- **Summary:** The COVID-19 pandemic has increased the risk of Type 2 diabetes mellitus, affecting the immune response to the SARS-CoV-2 virus. A study found lower anti-SARS antibody prevalence in diabetic patients, with antibody titers negatively related to disease duration and comorbidities.
- **Country:** Poland
- **Citation:** Michalski, A., Goralczyk, M., Brzozowski, M., Dworzanski, J., Drop, B., Stepień, E., & Polz-Dacewicz, M. (2023). Humoral response after breakthrough SARS-CoV-2 infection in type 2 diabetes mellitus patients. *Current Issues in Pharmacy and Medical Sciences*, 36(4), 221–226. <https://doi.org/10.2478/cipms-2023-0038>

Humoral Response after SARS-CoV-2 Vaccination in Prostate Cancer Patients

- **Summary:** A study in Poland found that prostate cancer patients had significantly lower levels of anti-SARS-CoV-2 IgG antibodies compared to controls, and age also affected the decrease. The study highlights the importance of vaccination for oncology patients, including prostate cancer patients.
- **Country:** Poland
- **Citation:** Błaszczuk, A., Sikora, D., Kiś, J., Stępień, E., Drop, B., & Polz-Dacewicz, M. (2023). Humoral Response after SARS-CoV-2 Vaccination in Prostate Cancer Patients. *Vaccines*, 11(4), 770. <https://doi.org/10.3390/vaccines11040770>

IgG autoantibodies against ACE2 in SARS-CoV-2 infected patients

- **Summary:** The study found that 1.5% of patients infected with SARS-CoV-2 had anti-ACE IgG antibodies, with higher prevalence in those with ACE2 autoantibodies. However, further research is needed to understand the potential spectrum and duration of these effects.
- **Country:** Poland
- **Citation:** Hallmann, E., Sikora, D., Poniedziałek, B., Szymański, K., Kondratiuk, K., Żurawski, J., Brydak, L., & Rzymiski, P. (2022). IgG autoantibodies against ACE2 in SARS-CoV-2 infected patients. *Journal of Medical Virology*, 95(1). <https://doi.org/10.1002/jmv.28273>

Postvaccination immunogenicity of BNT162b2 SARS-COV-2 vaccine and its predictors in paediatric inflammatory bowel disease

- **Summary:** The study compared postvaccination immunity in pediatric patients with inflammatory bowel disease (IBD) to healthy controls. Results showed higher levels of anti-receptor binding domain and anti-spike S2 antibodies in IBD patients, with time since vaccination, history of SARS-CoV-2 positivity, and anti-tumor necrosis factor treatment being associated with their robustness.
- **Country:** Czech Republic
- **Citation:** Bronsky, J., Copova, I., Durilova, M., Kazeka, D., Kubat, M., Lerchova, T., Vlckova, E., Mitrova, K., Rataj, M., Klocperk, A., Sediva, A., & Hradsky, O. (2022). Postvaccination immunogenicity of BNT162b2 SARS-COV-2 vaccine and its predictors in pediatric inflammatory bowel disease. *Journal of Pediatric Gastroenterology and Nutrition*, 76(2), e36–e44. <https://doi.org/10.1097/mpg.0000000000003661>

2022

Antibodies to NCP, RBD and S2 SARS-COV-2 in vaccinated and unvaccinated healthcare workers

- **Summary:** The study reveals that healthcare workers are at a higher risk of COVID-19, with higher seroprevalence and antibody titer in the vaccinated group, suggesting the need for multiple vaccinations and continuous testing.
- **Country:** Poland

- **Citation:** Błaszczuk, A., Michalski, A., Malm, M., Drop, B., & Polz-Dacewicz, M. (2022). Antibodies to NCP, RBD and S2 SARS-CoV-2 in vaccinated and unvaccinated healthcare workers. *Vaccines*, 10(8), 1169. <https://doi.org/10.3390/vaccines10081169>

Antibody Response after SARS-CoV-2 Infection with the Delta and Omicron Variant

- **Summary:** A study comparing Delta and Omicron variants of COVID-19 found lower antibody levels in Omicron patients, indicating risk of reinfection. Booster vaccinations and further studies are needed.
- **Country:** Poland
- **Citation:** Błaszczuk, A., Michalski, A., Sikora, D., Malm, M., Drop, B., & Polz-Dacewicz, M. (2022). Antibody Response after SARS-CoV-2 Infection with the Delta and Omicron Variant. *Vaccines*, 10(10), 1728. <https://doi.org/10.3390/vaccines10101728>

COVID-19 in a patient with neuroendocrine pancreatic cancer – Case Report

- **Summary:** COVID-19 pandemic impacts cancer diagnosis, prognosis, and therapeutic effects, with some studies showing worse trends in cancer patients, while others show mild recovery in some cases.
- **Country:** Poland
- **Citation:** Polz-Dacewicz, M., Stępień, E., Dworżańska, A., & Malm, M. (2022). COVID-19 in a patient with neuroendocrine pancreatic cancer – Case Report. *Journal of Pre-Clinical and Clinical Research*, 16(1), 13–15. <https://doi.org/10.26444/jpcrr/147709>

COVID-19 vaccines and public anxiety: antibody tests may be widely accepted

- **Summary:** This study investigates the impact of COVID-19 vaccination on public anxiety and the association between anxiety and antibody testing intention. Chinese adults aged 18 and over were surveyed, finding a significant difference in anxiety levels. Vaccinated respondents were more likely to accept antibody testing, and improving accessibility could ease public anxiety and enhance confidence in social activities.
- **Country:** China
- **Citation:** Liu, L., Wang, X., Li, X., & Li, N. (2022). COVID-19 vaccines and public anxiety: antibody tests may be widely accepted. *Frontiers in Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.819062>

Dynamics of anti-SARS-CoV-2 seroconversion in individual patients and at the population level

- **Summary:** A follow-up study on population screening for hidden herd immunity to SARS-CoV-2 found that 26% of participants were positive for anti-SARS-CoV-2 IgG after the fourth wave of the pandemic. Vaccinated participants showed higher levels of antibodies, highlighting the importance of vaccinations in suppressing pandemics.
- **Country:** Poland
- **Citation:** Szewczyk-Dąbrowska, A., Budziar, W., Baniecki, K., Pikies, A., Harhala, M., Jędruchniewicz, N., Kaźmierczak, Z., Gembara, K., Klimek, T., Witkiewicz, W., Nahorecki, A., Barczyk, K., Grata-Borkowska, U., & Dąbrowska, K. (2022). Dynamics of anti-SARS-CoV-2 seroconversion in individual patients and at the population level. *PloS One*, 17(9), e0274095. <https://doi.org/10.1371/journal.pone.0274095>

Hidden fraction of Polish population immune to SARS-CoV-2 in May 2021

- **Summary:** A population screening of Polish citizens found that 35.5% were positive for SARS-CoV-2-specific IgG and 52.3% were positive for IgA. However, 21.2% developed virus-specific IgG or IgA while asymptomatic. Anti-RBD IgG protection was found in 25.6% of individuals. The majority lacked anti-RBD IgG protection, highlighting the importance of vaccination in controlling the pandemic.
- **Country, year:** Poland
- **Citation:** Budziar, W., Gembara, K., Harhala, M., Szymczak, A., Jędruchniewicz, N., Baniecki, K., Pikies, A., Nahorecki, A., Hoffmann, A., Kardaś, A., Szewczyk-Dąbrowska, A., Klimek, T., Kaźmierczak, Z.,

Witkiewicz, W., Barczyk, K., & Dąbrowska, K. (2022). Hidden fraction of Polish population immune to SARS-CoV-2 in May 2021. PloS One, 17(2), e0253638. <https://doi.org/10.1371/journal.pone.0253638>

Immunogenicity and safety of COVID-19 mRNA vaccine in STAT1 GOF patients

- **Summary:** STAT1 mutations are linked to immune issues like chronic mucocutaneous candidiasis (CMC). In severe COVID-19, interferon signalling disruption occurs, but early treatment may help. While STAT1 GOF patients might be somewhat protected, excessive interferon activity could worsen inflammation. COVID-19 vaccines may trigger symptoms, especially in those on JAK inhibitors. Seven STAT1 GOF patients had uneventful COVID-19 vaccination or infection.
- **Country:** Czech Republic
- **Citation:** Bloomfield, M., Parackova, Z., Hanzlikova, J., Lastovicka, J., & Sediva, A. (2021). Immunogenicity and safety of COVID-19 mRNA vaccine in STAT1 GOF patients. Journal of Clinical Immunology, 42(2), 266–269. <https://doi.org/10.1007/s10875-021-01163-8>

Impaired Humoral Response to Third Dose of BNT162b2 mRNA COVID-19 Vaccine Despite Detectable Spike Protein-specific T cells in Lung Transplant Recipients

- **Summary:** The BNT162b2 mRNA COVID-19 vaccine is poorly effective in lung transplant recipients (LTRs). Among 15 LTRs without prior SARS-CoV-2 infection, only 47% showed a low cellular response after the third dose. While a third dose is recommended, caution is needed as protection may be partial. Maintenance immunosuppression, including calcineurin inhibitors, mycophenolate, and corticosteroids, might reduce antibody response.
- **Country:** Czech Republic
- **Citation:** Havlin, J., Skotnicova, A., Dvorackova, E., Hubacek, P., Svorcova, M., Lastovicka, J., Sediva, A., Kalina, T., & Lischke, R. (2021). Impaired Humoral Response to Third Dose of BNT162b2 mRNA COVID-19 Vaccine Despite Detectable Spike Protein-specific T cells in Lung Transplant Recipients. Transplantation, 106(3), e183–e184. <https://doi.org/10.1097/tp.0000000000004021>

Relationship between Humoral Response in COVID-19 and Seasonal Influenza Vaccination

- **Summary:** The study compared SARS-CoV-2 humoral responses between unvaccinated, vaccinated, and convalescent patients. Results showed influenza vaccination improved innate immune responses and decreased disease severity, with higher frequency and titers of anti-N and anti-RBD antibodies.
- **Country:** Poland
- **Citation:** Poniedziałek, B., Hallmann, E., Sikora, D., Szymański, K., Kondratiuk, K., Żurawski, J., Rzymiski, P., & Brydak, L. (2022a). Relationship between Humoral Response in COVID-19 and Seasonal Influenza Vaccination. Vaccines, 10(10), 1621. <https://doi.org/10.3390/vaccines10101621>

SARS Antibodies NCP, RBD and S2 in Women Vaccinated with Booster Pfizer Vaccine and Infected in Meantime with SARS-CoV-2

- **Summary:** The effective immunization plays a key role in preventing the spread of SARS-CoV-2 infection. The study describes the serum titer of antibodies against NPC, RBD and S2 in 69 old women, who developed hybrid immunity. She was vaccinated with booster dose of Pfizer vaccine and was twice infected with SARS-CoV-2. Despite vaccination and booster dose, she was re-infected. Five months after the booster dose of the vaccine, levels of antibodies to RBD (806 U/mL) and S2 (452 U/mL) were detected.
- **Country:** Poland

SARS-CoV-2-specific humoral and cellular immune responses to BNT162b2 vaccine in Fibrodysplasia ossificans progressiva patients

- **Summary:** A case series of two patients with Fibrodysplasia ossificans progressiva found that the BNT162b2 vaccine induced high humoral and cellular response levels, without severe adverse events or disease relapse, compared to healthy controls.
- **Country:** Czech Republic

- **Citation:** Smetanova, J., Milota, T., Rataj, M., Hurnakova, J., Zelena, H., & Horvath, R. (2022). SARS-CoV-2-specific humoral and cellular immune responses to BNT162b2 vaccine in Fibrodysplasia ossificans progressiva patients. *Frontiers in Immunology*, 13. <https://doi.org/10.3389/fimmu.2022.1017232>

SARS-CoV-2 Viral Load Assessment in Lung Transplantation

- **Summary:** The COVID-19 pandemic has posed significant challenges to organ transplantation programs, particularly in lung transplantation. SARS-CoV-2 viral load assessment is crucial for optimal donor selection, and new methods like IgA antibodies may aid diagnosis.
- **Country:** Czech Republic
- **Citation:** Novysedlak, R., Vachtenheim, J., Striz, I., Viklicky, O., Lischke, R., & Strizova, Z. (2021). SARS-CoV-2 viral load assessment in lung transplantation. *Physiological Research*, S253–S258. <https://doi.org/10.33549/physiolres.934760>

2021

Immunogenicity of BNT162b2 mRNA COVID-19 vaccine and SARS-CoV-2 infection in lung transplant recipients

- **Summary:** The mRNA COVID-19 vaccine's effectiveness in lung transplant recipients is unclear. While some show no antibody response, there's evidence of a T-cell response. This highlights the need for better vaccination strategies for immunocompromised patients, including potential early revaccination with different types.
- **Country:** Czech Republic
- **Citation:** Havlin, J., Svorcova, M., Dvorackova, E., Lastovicka, J., Lischke, R., Kalina, T., & Hubacek, P. (2021). Immunogenicity of BNT162b2 mRNA COVID-19 vaccine and SARS-CoV-2 infection in lung transplant recipients. *the Journal of Heart and Lung Transplantation/the Journal of Heart and Lung Transplantation*, 40(8), 754–758. <https://doi.org/10.1016/j.healun.2021.05.004>

Neutralizing antibody responses following natural SARS-CoV-2 infection: Dynamics and correlation with commercial serologic tests

- **Summary:** Commercial serologic tests are key for predicting SARS-CoV-2 immunity post-vaccination. VIDAS SARS-CoV-2 IgG and Euroimmun QuantiVac IgG are effective in detecting neutralizing antibodies. Antibody levels decline over time, with some becoming seronegative. The Microblot-Array assay shows minimal cross-reactivity and could be useful for monitoring antibody response post-infection. These findings aid in assessing post-vaccine protection and guiding booster dose allocation.
- **Country:** Belgium
- **Citation:** Montesinos, I., Dahma, H., Wolff, F., Dauby, N., Delaunoy, S., Wuyts, M., Detemmerman, C., Duterme, C., Vandenberg, O., Martin, C., & Hallin, M. (2021). Neutralizing antibody responses following natural SARS-CoV-2 infection: Dynamics and correlation with commercial serologic tests. *Journal of Clinical Virology*, 144, 104988. <https://doi.org/10.1016/j.jcv.2021.104988>

SARS-CoV-2 spike glycoprotein-reactive T cells can be readily expanded from COVID-19 vaccinated donors.

- **Summary:** The COVID-19 vaccine, designed to protect against SARS-CoV-2 and COVID-19, can be compromised in immunodeficient patients or those with suppressed immunity. Researchers have investigated combining vaccination with ex vivo enrichment and large-scale expansion of SARS-CoV-2 spike glycoprotein-reactive CD4+ and CD8+ T cells, showing potential for T cell-based immunotherapy.
- **Country:** Czech Republic
- **Citation:** Taborska, P., Lašůvička, J., Stakheev, D., Střížová, Z., Bartůňková, J., & Smrž, D. (2021). SARS-CoV-2 spike glycoprotein-reactive T cells can be readily expanded from COVID-19 vaccinated donors. *Immunity, Inflammation and Disease*, 9(4), 1452–1467. <https://doi.org/10.1002/iid3.496>

EBV

2025

JC Polyomavirus in Prostate Cancer—Friend or Foe?

- **Summary:** The study investigates the link between EBV and prostate cancer. They found higher frequencies and levels of EBV antibodies (EBNA-1 and VCA) in EBV-positive prostate cancer patients, particularly in advanced stages. This suggests a potential role for EBV in prostate cancer development and progression.
- **Country:** Poland
- **Citation:** Kiś, J., Góralczyk, M., Sikora, D., Stępień, E., Drop, B., & Polz-Dacewicz, M. (2024). Can the Epstein–Barr Virus Play a Role in the Development of Prostate Cancer? *Cancers*, 16(2), 328. <https://doi.org/10.3390/cancers16020328>

The impact of type 2 diabetes on selected clinical parameters and serological markers in patients with EBV-related oropharyngeal cancer

- **Summary:** This study investigated the impact of type 2 diabetes on the clinical progression of Epstein-Barr virus (EBV)-related oropharyngeal squamous cell carcinoma (OPSCC). Among 115 patients, those with diabetes had more advanced tumors (G3, T3–T4), greater lymph node involvement, and lower levels of anti-EBV antibodies (IgA and IgG). These effects were more pronounced in patients with diabetes lasting over six years. The findings suggest that diabetes may worsen the clinical course of EBV-related OPSCC and suppress immune response, warranting further research.
- **Country:** Poland
- **Citation:** Paradowski, K., Koleśnik, M., Jarosz, M. J., & Polz-Dacewicz, M. (2025). The impact of type 2 diabetes on selected clinical parameters and serological markers in patients with EBV-related oropharyngeal cancer. *Annals of Agricultural and Environmental Medicine*. <https://doi.org/10.26444/aaem/203027>

2024

Can the Epstein–Barr Virus Play a Role in the Development of Prostate Cancer?

- **Summary:** The study investigates the link between EBV and prostate cancer. They found higher frequencies and levels of EBV antibodies (EBNA-1 and VCA) in EBV-positive prostate cancer patients, particularly in advanced stages. This suggests a potential role for EBV in prostate cancer development and progression.
- **Country:** Poland
- **Citation:** Kiś, J., Góralczyk, M., Sikora, D., Stępień, E., Drop, B., & Polz-Dacewicz, M. (2024). Can the Epstein–Barr Virus Play a Role in the Development of Prostate Cancer? *Cancers*, 16(2), 328. <https://doi.org/10.3390/cancers16020328>

Could MMP3 and MMP9 Serve as Biomarkers in EBV-Related Oropharyngeal Cancer

- **Summary:** This study explores the role of MMP3 and MMP9 (tissue remodeling, inflammation, cancer metastasis) in EBV-positive oropharyngeal squamous cell carcinoma (OPSCC), revealing elevated levels compared to EBV-negative cases. MMPs correlate with OPSCC progression, anti-EBV antibodies, and viral load. MMPs, alongside with EBNA1 IgA, IgG, EBVCA IgA, and viral load exhibit diagnostic accuracy. Strong associations were also noted between MMPs and anti-Zta and anti-LMP1 antibodies, suggesting EBV's influence on MMP expression and cancer progression. MMPs were confirmed as reliable markers in EBV-positive OPSCC diagnosis, emphasizing the importance of early EBV detection through serology.
- **Country:** Poland
- **Citation:** Polz, A., Morshed, K., Drop, B., & Polz-Dacewicz, M. (2024). Could MMP3 and MMP9 serve as biomarkers in EBV-Related oropharyngeal cancer. *International Journal of Molecular Sciences*, 25(5), 2561. <https://doi.org/10.3390/ijms25052561>

Serum Anti-Zta and Anti-LMP1 Antibodies in Oropharyngeal Cancer Related to Epstein-Barr Virus-Diagnostic Usefulness

- **Summary:** The aim of the study was to determine the usefulness of anti-Zta (ZEBRA) and anti-LMP1 antibodies as diagnostic and prognostic markers in EBV positive oropharynx cancer patients. Results indicate elevated antibody levels in advanced stages, suggesting diagnostic utility. Anti-Zta antibodies demonstrate diagnostic accuracy, while anti-LMP1 may serve as both diagnostic and prognostic marker.
- **Country:** Poland
- **Citation:** Polz, A., Morshed, K., Drop, B., Drop, A., & Polz-Dacewicz, M. (2024). Serum Anti-ZTA and Anti-LMP1 antibodies in oropharyngeal cancer Related to Epstein–Barr Virus—Diagnostic Usefulness. *Cancers*, 16(2), 341. <https://doi.org/10.3390/cancers16020341>

Serum TLR2 and TLR9 in Prostate Cancer Patients in Relation to EBV Status

- **Summary:** The study investigates the complex link between Toll-like receptors (TLRs) and prostate cancer, revealing higher levels in advanced PCa, potentially impacting EBV infection and future cancer treatment strategies
- **Country:** Poland
- **Citation:** Sikora, D., Kiś, J., Stępień, E., Drop, B., & Polz-Dacewicz, M. (2024). Serum TLR2 and TLR9 in prostate cancer patients in relation to EBV status. *International Journal of Molecular Sciences*, 25(16), 9053. <https://doi.org/10.3390/ijms25169053>

BLOT-LINE

ANA

2025

A case report of Lupus cerebritis in Female with preceding Kikuchi-Fujimoto disease

- **Summary:** Kikuchi-Fujimoto disease, a rare, self-limiting illness in young females, is often associated with Systemic Lupus Erythematosus (SLE), requiring comprehensive evaluation and treatment with steroids and immunological therapy.
- **Country:** Iraq
- **Citation:** Barazanji, H. a. A., Alabdullah, A. R., Shabbir, A., AlMalchi, M. Q. R., & Hussein, A. F. (2025). A case report of lupus cerebritis in a female with preceding Kikuchi-Fujimoto disease. *Cureus*. <https://doi.org/10.7759/cureus.82594>

2024

Digital gangrene without sclerodactyly in the presence of anticentromere antibodies: A unique presentation of scleroderma

- **Summary:** This study describes a rare case of digital gangrene without sclerodactyly in a 60-year-old woman positive for anticentromere antibodies (ACA). Unlike typical cases linked to scleroderma, the patient showed no signs of Raynaud's phenomenon, vascular risk factors, or systemic sclerosis. Diagnostic tests confirmed ACA positivity (CENP-A and CENP-B) and mild pulmonary hypertension, without evidence of CREST syndrome. The findings suggest ACA-associated digital gangrene can occur independently of other CTD markers, highlighting the need for ACA testing in isolated digital ischemia. This is the first such case reported from India.
- **Country:** India
- **Citation:** Suman, U., Sheoran, L., Manchanda, V., & Saxena, S. (2024). Digital gangrene without sclerodactyly in the presence of anticentromere antibodies: A unique presentation of scleroderma. *Indian Journal of Medical Microbiology*, 53, 100769. <https://doi.org/10.1016/j.ijmmb.2024.100769>

Anaplasma

2024

Epidemiological, clinical, and laboratory characteristics of human granulocytic anaplasmosis in North India

- **Summary:** Human granulocytic anaplasmosis (HGA) is an emerging tick-borne disease caused by *Anaplasma phagocytophilum*, with a worldwide distribution. A study in North India found 6 confirmed cases and 43 probable cases, with one patient developing a fatal infection. The study highlights the need for active tick surveillance.
- **Country:** India
- **Citation:** Vinayaraj, E. V., Thakur, C. K., Negi, P., Sreenath, K., Upadhyay, P., Verma, N., Das, B. K., Kabra, S. K., Wig, N., & Chaudhry, R. (2024). Epidemiological, clinical, and laboratory characteristics of human granulocytic anaplasmosis in North India. *Journal of Clinical Microbiology*, 62(3). <https://doi.org/10.1128/jcm.01048-23>

2021

Seroprevalence of Antibodies against Tick-Borne Pathogens in Czech Patients with Suspected Post-Treatment Lyme Disease Syndrome

- **Summary:** A study of 103 patients with suspected Lyme disease syndrome found that autoantibodies, mostly antinuclear, were present in 11.6% of the patients, but not in the majority of cases, suggesting a potential influence of co-infections on PTLDS development.
- **Country:** Czech Republic
- **Citation:** Sloupenska, K., Dolezilkova, J., Koubkova, B., Hutyrova, B., Racansky, M., Horak, P., Golovchenko, M., Raska, M., Rudenko, N., & Krupka, M. (2021). Seroprevalence of Antibodies against Tick-Borne Pathogens in Czech Patients with Suspected Post-Treatment Lyme Disease Syndrome. *Microorganisms*, 9(11), 2217. <https://doi.org/10.3390/microorganisms9112217>

2016

Assessment of antibodies against surface and outer membrane proteins of *Anaplasma phagocytophilum* in Lyme borreliosis and tick-borne encephalitis paediatric patients

- **Summary:** A study tested 412 serum specimens for positive antibodies against *Anaplasma phagocytophilum* in children with tick-borne infections. Results showed borderline reactivity in 30 samples, but no case of human granulocytic anaplasmosis was demonstrated. The study provides new information on antibody positivity in tick-borne infections.
- **Country:** Czech Republic
- **Citation:** Krbková, L., Homola, L., Hlaváčová, A., Mikolášek, P., Bednářová, J., & Čermáková, Z. (2016). Assessment of antibodies against surface and outer membrane proteins of *Anaplasma phagocytophilum* in Lyme borreliosis and tick-borne encephalitis paediatric patients. *Epidemiology and Infection*, 144(12), 2597–2604. <https://doi.org/10.1017/s0950268816000972>

Borrelia

2023

Comparison of methods for determining antibodies against *Borrelia* spp. in early and late forms of Lyme disease

- **Summary:** The comparison shows that the new generation of CLIA serological methods has the same sensitivity and specificity as ELISA, and the results also agree with the latest MBA confirmation method. The results of the development of antibodies in various manifestations of LB can be helpful in the diagnosis of the disease and the subsequent treatment of the patient.
- **Country:** Czech Republic
- **Poster link:** https://www.testlinecd.com/dmsdownload/5297743/POSTER_MBA,-CLIA,-EIA-Borrelia_Comparison-of-methods-for-determining-Borrelia-antibodies.pdf

2021

Clinical and laboratory evidence of Lyme disease in North India, 2016-2019

- **Summary:** This study evaluates Lyme disease clinical and epidemiological features in North India, revealing endemic cases in the region. Results show neurological involvement in 77% of cases, joint and heart involvement in 27% and 16% respectively. The study emphasizes the need for travel medicine practitioners to evaluate patients with similar symptoms.

- **Country:** India
- **Citation:** Vinayaraj, E., Gupta, N., Sreenath, K., Thakur, C. K., Gulati, S., Anand, V., Tripathi, M., Bhatia, R., Vibha, D., Dash, D., Soneja, M., Kumar, U., Padma, M., & Chaudhry, R. (2021). Clinical and laboratory evidence of Lyme disease in North India, 2016–2019. *Travel Medicine and Infectious Disease*, 43, 102134. <https://doi.org/10.1016/j.tmaid.2021.102134>

2018

Serological Diagnostics of Lyme Borreliosis: Comparison of Universal and Borrelia Species-Specific Tests Based on Whole-Cell and Recombinant Antigens

- **Summary:** The study compares diagnostic parameters of commercial serological kits based on three antigen types and correlates test results with Borrelia infection status. It found that ELISA has superior sensitivity and negative predictive value, while species-specific tests have volatile parameters. Correlation with clinical state is limited.
- **Country:** Czech Republic
- **Citation:** Kodym, P., Kurzová, Z., Berenová, D., Pícha, D., Smíšková, D., Moravcová, L., & Malý, M. (2018). Serological Diagnostics of Lyme Borreliosis: Comparison of universal and Borrelia Species-Specific tests based on Whole-Cell and recombinant antigens. *Journal of Clinical Microbiology*, 56(11). <https://doi.org/10.1128/jcm.00601-18>

2016

Prospective study on the chemokine CXCL13 in neuroborreliosis and other aseptic neuroinfections

- **Summary:** The study examines the clinical significance of CXCL13 in Lyme neuroborreliosis and other aseptic CNS infections. It found that CXCL13 concentrations were highest in patients with positive antibodies and CSF pleocytosis, while AI positivity was the lowest.
- **Country:** Czech Republic
- **Citation:** Pícha, D., Moravcová, L., & Smíšková, D. (2016). Prospective study on the chemokine CXCL13 in neuroborreliosis and other aseptic neuroinfections. *Journal of the Neurological Sciences*, 368, 214–220. <https://doi.org/10.1016/j.jns.2016.05.059>

2015

Antigenicity of borrelial protein OppA2 and NapA fragments in pediatric Lyme arthritis

- **Summary:** Recombinant EIA enriched with OppA2 and NapA shows potential to outperform standard screening tests for Lyme arthritis (LA). OppA2, a surface-localized lipoprotein, appears as a significant indicator for LA diagnosis, with specific IgG antibodies detectable early and persisting for years post-treatment. However, anti-NapA IgG levels do not significantly increase in LA children and decline with antibiotic treatment, suggesting limited diagnostic value.
- **Country:** Czech Republic
- **Poster link:** https://www.testlinecd.com/dmsdownload/4688474/POTER_BLOT-Borrelia_Antigenicity-of-borrelial-protein-OppA2-and-NapA-fragments.pdf

Helicobacter

2024

- **Summary:** This study analyzed the link between H. pylori antibody levels, pathogenicity, and changes post-eradication therapy in 324 Japanese subjects. Higher antibody levels were associated with

increased pathogenic proteins (CagA) and gastric atrophy, indicating higher infection severity. Successful eradication significantly reduced antibody levels, pathogenicity, and improved gastric health. Antibody testing proved effective for assessing eradication success, with a 46% reduction in levels at six months being a reliable marker. The findings suggest *H. pylori* antibody levels can help evaluate infection risk, eradication success, and potentially stratify gastric cancer risk.

- **Country:** Japan
- **Citation:** Yamasaki, S., Murata, M., Ohta, A., Matsumoto, Y., Ikezaki, H., & Furusyo, N. (2024). Analyses of the association between *Helicobacter pylori* antibody titre and pathogenicity before and after eradication: results of the Kyushu and Okinawa population study, a retrospective observational cohort study. *BMJ Open*, 14(8), e083157. <https://doi.org/10.1136/bmjopen-2023-083157>

Toxocara

2020

Urticaria and silent parasitism by Ascaridoidea: Component-resolved diagnosis reinforces the significance of this association

- **Summary:** This study aimed to analyze the relationship between parasitism by Ascarididae (*Toxocara canis* and *Anisakis simplex*) and urticaria clinical expression. Results showed significant differences in IgG and IgE antibodies against *Anisakis simplex* larvae and *Toxocara canis*. Tropomyosin and Anis 1 were identified as the most relevant markers for urticaria association with Ascarididae parasites in a region.
- **Country:** Spain
- **Citation:** Viñas, M., Postigo, I., Suñén, E., & Martínez, J. (2020). Urticaria and silent parasitism by Ascaridoidea: Component-resolved diagnosis reinforces the significance of this association. *PLoS Neglected Tropical Diseases*, 14(4), e0008177. <https://doi.org/10.1371/journal.pntd.0008177>

2008

rTES-30USM: cloning via assembly PCR, expression, and evaluation of usefulness in the detection of toxocariasis

- **Summary:** Toxocariasis diagnosis relies on serological tests, but commercial tests have low specificities, causing problems in tropical countries. A new IgG4-ELISA, based on a recombinant version of the 30-kDa *Toxocara* excretory–secretory antigen, demonstrated high sensitivity and specificity, making it a suitable choice for tropical countries.
- **Country:** Malaysia
- **Citation:** Norhaida, A., Suharni, M., Sharmini, A. T. L., Tuda, J., & Rahmah, N. (2008). rTES-30USM: cloning via assembly PCR, expression, and evaluation of usefulness in the detection of toxocariasis. *Annals of Tropical Medicine and Parasitology*, 102(2), 151–160. <https://doi.org/10.1179/136485908x252250>

Treponema

2020

A retrospective study on nested PCR detection of syphilis treponemes in clinical samples: PCR detection contributes to the diagnosis of syphilis in patients with seronegative and serodiscrepant results

- **Summary:** This study analyzed the relationship between serology and PCR in syphilis diagnostics, analyzing 941 samples from 833 patients in the Czech Republic. Results showed PCR detection rates were highest in primary syphilis, with lower rates in secondary and undetermined stages.
- **Country:** Czech Republic
- **Citation:** Vrbová, E., Mikalová, L., Grillová, L., Pospíšilová, P., Strnadel, R., Dastychová, E., Kojanová, M., Kreidlová, M., Vaňousová, D., Rob, F., Procházka, P., Krchňáková, A., Vašků, V., Woznicová, V., Heroldová, M. D., Kuklová, I., Zákoucká, H., & Šmajš, D. (2020). A retrospective study on nested PCR detection of syphilis treponemes in clinical samples: PCR detection contributes to the diagnosis of syphilis in patients with seronegative and serodiscrepant results. PloS One, 15(8), e0237949. <https://doi.org/10.1371/journal.pone.0237949>