

## GENERAL INFORMATION

### 1. NAME OF THE CENTER AND LOCATION

**University Multiprofile Hospital for Active Treatment” Saint Marina”  
Virology Laboratory  
1, “Christo Smirnenski” Bul.  
Varna  
Bulgaria**

### 2. TYPE OF THE RESEARCH INFRASTRUCTURE AND/OR SCIENTIFIC EXPERTISE

Identify the type of the RI, equipment/facilities/ specific research, and in particular linked to COVID-19:

- Automated System for viral nucleic acid isolation: SaMag12, Sacace, Italy
- Real Time PCR machine: SaCycler 12, Sacace
- ELISA Automated System: EUROIMMUN, Germany

#### **Scientific Expertise**

1. Serological and molecular diagnosis of viral infections
2. Diagnostics (practical and scientific experience) of CMV, EBV, BKV, HBV, HCV and HIV associated infections.
3. Expertise in diagnosis of viral infections in specific group of patients: immunocompromised, immunosuppressed and patients with hematological malignancies.
4. Experience in SARS CoV 2 diagnosis by RT PCR.

#### **KEY WORDS:**

Expertise in CMV, EBV and BKV associated infections in immunocompromised and transplanted patients (solid organ and hematopoietic stem cell transplantation).

### 3. TYPE OF THE RESEARCH

Provide information on the research carried on or planned in regard with COVID-19 and other viruses

#### **SARS CoV2: dynamics of the antibody response**

RT PCR is the reference method for COVID19 (SARS CoV2) confirmation. The single use of this method significantly reduces the possibility for testing on a mass scale which results in an inadequate identification of the healthy

asymptomatic carriers responsible for the viral dissemination in the human population.

Up to now there is no sufficient data about the dynamics of the antiviral patient's immune response to SARS CoV2 and information about the effectiveness of the newly introduced serologic tests.

**Aim:** to study the dynamics of the antibody response to SARS CoV2 and to define the capacity of ELISA Assay tests for COVID-19 mass screening.

**Studied groups:**

1. Patients with proven or probable COVID-19
2. Contact persons to proven COVID-19 patients

**Tasks:**

1. To detect the presence of specific IgM and IgG by ELISA in the serum samples of all patients, initially tested by RT-PCR.
2. ELISA follow up once a week of all RT-PCR positive for COVID-19 patients to determine the time of IgM and IgG appearance.
3. Serology testing of all health care professionals who have been in direct contact with COVID-19 positive patients to detect specific antibodies.
4. Testing a control group of 50 volunteers.
5. Comparative study of different ELISA Assay Kits.

#### 4. WEBSITE

Provide the internet address:

[www.mu-varna.bg/en](http://www.mu-varna.bg/en)

#### 5. BACKGROUND, PUBLICATIONS AND OPEN DATA REPOSITORY

leading research team AND Scientific publications of the research group on the topics of related to coronaviruses research results;

**link to open data repository**

1. Tsvetelina Kostadinova, Liliya Ivanova, Tatina Todorova, Zhivka Stoykova, Dobromir Staykov, Merlin Efraim, et al. (2019). Detection of EBV DNA in Non-Hodgkin Lymphoma Patients in Bulgaria. *Indian Journal of Hematology and Blood Transfusion* 35 (3), pp 465–470.
2. Ivanova L., Stoykova Z., Kostadinova Ts., Tsaneva D. (2018). HIV related laboratory and clinical manifestations. *Acta Microbiologica Bulgarica*, 33 (5). (ISSN 0204-8809).
3. Tsvetelina Kostadinova, Liliya Ivanova, Zhivka Stoykova, Tatina Todorova, Liana Gercheva, Dobromir Staykov, Denitsa Tsaneva (2018). Investigation of

immunosuppressed patients for the presence of EBV DNA in Real time PCR. *Journal of IMAB* 24(3) 2129-2132 (ISSN 1312-773X)

4. Tsvetelina Kostadinova, Liliya Ivanova, Ivaylo Hristov, Tatina Todorova, Zhivka Stoykova, Denitsa Tsaneva (2018). The role of anti-EBNA1 IgG determination in EBV diagnostics. *Journal of IMAB*, 24(3):2181-2185 (ISSN1312-773X)
5. Tsvetelina Kostadinova, Liliya Ivanova, Milena Bozhkova, Denitsa Tsaneva, Tatina Todorova, Zhivka Stoykova (2018). Use of Immunoblot IgM in patients with serological and clinical evidence of primary EBV infection and reactivation. *Journal of IMAB* (24(3):2186-2189 ISSN1312-773X).
6. Tsvetelina Kostadinova, Liliya Ivanova, Denitsa Tsaneva-Damyanova, Zhivka Stoykova. HBV and HCV Incidence among Non-Hodgkin's Lymphoma Patients in Varna Region (2013-2016) (2018). *Acta Microbiologica Bulgarica*, 34 (4). (ISSN 0204-8809).
7. Kostadinova Ts., Ivanova L., Stoykova Z Tsaneva D. (2018). Investigation of Anti-EA (D) IgG in Patients with Haematological Diseases *Acta Microbiologica Bulgarica*, 34(4). (ISSN 0204-8809).
8. Denitsa Tsaneva-Damyanova, Elitsa Golkocheva-Markova, Liliya Ivanova, Tsvetelina Kostadinova, Zhivka Stoykova (2018). Occult hepatitis B virus infection among patients with liver dysfunction in Varna, Bulgaria *Journal of IMAB*, 24(4):2196-2200.
9. Tsvetelina Kostadinova, Liliya Ivanova, Tatina Todorova Zhivka Stoykova, Denitsa Tsaneva, Gabriela Tsankova (2018). Role of anti-EA-(D) IgM and anti-EA-(D) IgG tests in patients with primary EBV infection, lymphomas and immunosuppression *J of IMAB*. 24(4):2267-2271.
10. Tsvetelina Kostadinova, Liliya Ivanova, Zhivka Stoykova, Tatina Todorova, Denitsa Tsaneva (2018). Relevance of Avidity Testing of VCA IgG in EBV Diagnostics *Acta Microbiologica Bulgarica*, 34(3)
11. Ц. Костадинова, Ж. Стойкова, Д. Цанева, и Л. Иванова (2018). Терапия на Епщайн-Бар-вирусна инфекция Медицински преглед, vol. LIV. (5) 12-19.
12. Ж. Стойкова, Л. Иванова, Цв. Костадинова, Д. Цанева-Дамянова и К. Калчев (2019). Подходи за специфична профилактика на цитомегаловирусната инфекция Медицински преглед, vol. LV. (2) 18-22.

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**6. COORDINATOR**

*Full name of the coordinator organization;*

**Medical University - Varna**

*Contact person;*

Prof. Dr. Temenuga Zhekova

*e-mail (up to 100 characters)*

temenuga.zhekova@mu-varna.bg

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**7. POSSIBLE PARTNERS**

Indicate the partner organizations

*Possible partners would be in the areas of:*

1. Monitoring the effect of treatment and viral clearance process in COVID-19 patients treated with various antiviral agents.
  2. In vitro activity of various antiviral preparations on SARS CoV-2
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**8. IMPLEMENTED AND RUNNING PROJECTS**

Projects related to virology, vaccines, infection diseases ...

1. Seroepidemiological and laboratory study of the occurrence and clinical significance of Epstein - Barr viral infection.
2. Study of Cytomegaloviral infection in risk - group patients and congenital Cytomegaloviral infection.
3. Invasive bacterial infections in patients after autologous and allogeneic stem cell transplantation: etiology and resistance to strategic beta-lactam and glycopeptide antimicrobial agents.