GENERAL INFORMATION

1. NAME OF THE CENTER AND LOCATION

Medical University - Pleven
1, St. Kliment Ohridski, str.
5800 Pleven, 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:

Scientific equipment for biomedical and pharmaceutical research & development:
The Virology Laboratory at Medical University - Pleven is equipped with all essential equipment required for RNA isolation, reverse transcription and PCR amplification. Class II Microbiological Safety Cabinet (SafeFAST Elite, Italy) provides a protected working environment for handling patient specimens and isolating viral nucleic acids. The laboratory has a -30°C laboratory freezer for RNA storage until further processing for PCR amplification. The real-time PCR instrument which is used for target gene amplification – CFX96 Real-Time PCR Detection System (BioRad, USA) – is compatible with a number of *in vitro* diagnostic kits which are CE marked and have also been validated for use with the CFX96 PCR instrument.

Medical University - Pleven also has:

- NextSeq 550 - a new generation sequencing of the next generation and scanning the microarray chips with the possibility of sequencing of the human, bacterial and viral genome, transcriptome and targeted resequencing and scanning the microarray chips for the detection of genetic and structural variations.
- BaseSpace HT Onsite Sequence Hub - computer system for storing, processing, sharing and embedded applications for analysis of data from NGS sequencing.
- Mithras² LB 943 (Monochromator & Filter Multimode Microplate Reader) for measurement of: UV/VIS Absorbance; Fluorescence, FRET, Fluorescence Polarisation, Time-Resolved Fluorescence, Time-Resolved FRET, Luminescence, BRET, BRET, AlphaScreen, AlphaLISA

KEY WORDS:

Expertise in Infection Diseases, Molecular Biology, Microbiology, Immunology and Genetics.

3. TYPE OF THE RESEARCH	
Provide information on the research carried on or planned in regard with COVID-19 and other viruses	Direct RNA sequencing of novel SARS-CoV-2 from patient specimens in regions encoding structural viral proteins, such as E-protein and S-protein, will allow for the identification of genetic differences between viral isolates. The results will be compared with the existing genomic database to investigate whether new mutations occur in viral genes which are current targets of *in vitro* diagnostic kits for SARS-CoV-2. Viral detection by real-time PCR is the current standard for COVID-19 diagnosis. The clinical information from patient samples positive for SARS-CoV-2 by real-time PCR will be used to carry out epidemiological studies about distribution of viral disease in different age groups and identify co-morbidities which are frequently associated with viral infection.
4. WEBSITE	
Provide the internet address:	*http://www.mu-pleven.bg/*
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**	**Research team:** Professor Katya Kovacheva, MD, PhD Professor Tsetsa Dojchinova, MD, PhD Professor Savelina Popovska, MD, DSc Assoc. Professor Hristina Hitkova, MD, PhD Assoc. Professor Milena Karcheva, MD, PhD Assoc. Professor Milena Atanasova, MD, PhD Vladislav Nankov, MSc Petyo Trifonov, MSc Georgi Golemanov, MSc, PhD student Publications in the area of Genetics, Infection Diseases, Molecular Biology, Microbiology and Epidemiology y in the last three years: 1. Kovacheva KS, Kamburova ZB, Popovska SL, Dimitrov DD, Ivanov IN, Simeonova MN, Deliyski TS. Prevalence of five brca1/2 mutations in Bulgarian breast cancer patients. J Biomed Clin Res. 2018;11 (2):122-7. 2. Kovacheva K, Kotsev R, Konova E, Rilcheva V, Kamburova Z, Simeonova M. Chromosomal abnormalities and Y chromosome microdeletions in bulgarian

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6. COORDINATOR

Full name of the coordinators organization:

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7. POSIBLE PARTNERS

Indicate the partner organizations

Full name of the partner

Medical University of Plovdiv

15-A „Vasil Aprilov“ blvd.

4002, Plovdiv

8. IMPLEMENTED AND RUNNING PROJECTS

Projects related to virology, vaccines, infection diseases …

Laboratory equipment necessary for RNA sequencing (NextSeq 550 and BaseSpace HT Onsite Sequence Hub) is contributed in line with Project: BG05M2OP001-1.002-0010-C01, Center for Competence in Personalized Medicine, 3D and Telemedicine, Robotic and Minimally Invasive Surgery.