STATEMENT

By Prof. Iskra Petrova Altunkova, MD, Dsc

About: Thesis for the acquisition of the educational and scientific degree "Doctor" in: Scientific specialty "Immunology", Professional field 4.3. Biological sciences; Field of higher education "Natural sciences, mathematics and informatics", code 01.06.23, under the doctoral program IMMUNOLOGY

Thesis topic: Characterization of potential immunoprophylactic and immunotherapeutic properties of human blood plasma

Doctoral student: biologist Vancho Donev

Scientific supervisor: Associate Professor Dr. Georgi Nikolov, MD

Professional and scientific development of the doctoral student

Biologist Vancho Donev was born in 1994 in the city of Kavadarci, Republic of North Macedonia. He graduated from the Faculty of Biology of Sofia University "St. Kliment Ohridski" in 2017 and 2019, respectively, with a Bachelor's and Master's degree in Molecular Biology. In the period 2020 – 2025, he worked as a biologist at Bul Bio National Center for Biological Sciences, Sofia. He is fluent in written and spoken English; he has 3 scientific publications (1 of them with Impact Factor), 4 participations in scientific meetings and congresses in our country and 1 participation in a scientific project.

Dissertation evaluation

The thesis was prepared in the Department of Immunology at the National Center for Biological Sciences, Sofia. It was presented and approved by an extended board of the Department of Immunology at the National Center for Biological Sciences.

The dissertation contains 130 pages, 23 figures and 7 tables. Bibliography includes 317 literary sources.

The literature review is extensive and comprehensive, describes the history and development of knowledge and the creation of the Bulgarian preparation Immunovenin Intact as well as the literature and practice of the use of IVIG as a therapeutic agent in immunodeficiency and autoimmune diseases. The literature review also discusses a number of global clinical studies on the therapeutic application.

Purpose The aim of the dissertation is to study the main immune components of human blood plasma used for the production of the final IVIG product Immunovenin Intact 5% and to characterize the pathogen-specific antibodies contained therein, with a view to possible immunoprophylactic and immunotherapeutic application. To achieve this goal, 6 main and targeted tasks have been formulated.

The following biological samples were examined:

A. Plasmas

- 90 units of COVID-19 convalescent donor plasma (01.2021-05.2021)
- 32 plasmas from clinically healthy individuals (age range 2-55)
- 10 plasma pools from ~3000 donations with a quantity of ~600 l. (donation period 01.2021-12.2021.

B. Intravenous immunoglobulin (Immunovenin-intact 5%)

- 90 regular production batches (2019-2024).
- 13 batches produced from plasma collected during the COVID-19 pandemic.

The following characteristics of the biological samples were studied: IgG isotypes, IgG subclasses, anti-streptococcal,SARS-CoV-2-specific RBD-IgG and –IgA, anti-Candida albicans, anti-staphylococcal, ANA, extended cytokine package. Classical and in-house developed and tested methodologies were used, which are described in detail.

The obtained results are statistically processed, described in detail and illustrated, discussed and analyzed. The conclusions and contributions of the dissertation are clearly formulated and arise from the obtained results. They relate to newly proven characteristics of the IgG subclasses,anti SARS-CoV-2 (IgG and IgA) and their neutralizing capacity, their cytokine profiles, the presence of other anti-infectious antibodies, ANA. I agree with the wording and classified contributions.

I have no significant critical remarks about the overall design of the work. However, it seems to me that the theoretical contribution No4, especially on the immunomodulatory capacity of IVIG in autoimmune diseases, does not arise directly from the experimental studies in the dissertation.

In conclusion, the presented dissertation work meets the requirements of the Act on the Development and Growth of Academic Staff and the Regulations of the National Council of the National Center for the Study of Biological Sciences - Sofia. The ongoing studies of the Bulgarian preparation/medication are important due to its expanding use as a medicine in our country, and likely abroad. This makes the topic of the dissertation work relevant. A significant amount of work with scientific and educational value has been carried out. Original and confirmatory results and contributions have been obtained, which have been made available to the scientific community. The personal role of the dissertation candidate is undeniable, but the influences of the scientific supervisor and the scientific environment in which the work was formed are clearly visible. These qualities of the work and of the doctoral student allow me to recommend to the esteemed members of the Scientific Jury to vote positively for awarding the ONS "Doctor" to biologist Vancho Donev.

15.08.2025
Sofia

Statement Prepared by:

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