GENERAL INFORMATION

1. NAME OF THE CENTER AND LOCATION	
	Institute of Organic Chemistry with Centre of Phyrochemistry, BAS
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:	• The most modern equipment for isolation and characterization of biologically active substances with antiviral effect. • Scientific equipment for virological research & development & testing of antiviral products and personal protection equipment. • The most up-to-date equipment for the analysis of active substances with antiviral effect for their inclusion in antiviral preparations.KEY WORDS: Expertise in bioactive compounds with antiviral effects, in virology, Testing of personal protection equipment, Antiviral testing
3. TYPE OF THE RESEARCH	
Provide information on the research carried on or planned in regard with COVID-19 and other viruses	The coronavirus outbreak showed that we should consider our personal protective equipment very carefully and to innovate in them. The use of activated carbon is not a new in the field, but some our research results show that when it is made from apricot pyrene the absorbtion capacity is very high. Our proposal is to use a waste product - apricot pyrene as a base for the production of activated carbon. It can be the main element in the filter of face masks that have the capability to filter a virus model with similar characteristics as SARS-CoV-2 this can become a tool for our fight against the virus and a valuable protection method especially for the first line of defense – our medical staff. The team has experience in isolating and demonstrating the antiviral effect of various natural products. We can engage in the isolation of active substances with antiviral effect for inclusion in antiviral preparations.
4. WEBSITE	
Provide the internet address:	http://www.orgchm.bas.bg/index_en.html
5. BACKGROUND, PUBLICATIONS AND OPEN DATA REPOSITORY	
leading research team AND Scientific publications of the	Biochemistry : Prof. DCs Pavlina Dolashka, Prof. Narzyslav Petrov, Asoc. Prof. Lyudmila Velkova, Asoc. Prof. Aleksander Dolashki, Assoc. Prof. Ivanka Stoyanova, 6 Assist. professors and 6 PhD students.

research group on the topics of related to coronaviruses research results**;** **link to open data repository**	Virology: Prof. Stoyan Shishkov, PhD; Assist. Prof. Kalina Shishkova, PhD Assist. Prof. Anton Hinkov, PhD; Assist. Prof. Daniel Todorov, PhD; Venelin Tsvetkov – PhD student Publications : 1. Dolashka-Angelova P, Lieb B, Velkova L, Heilen N, Sandra K, Nikolaeva-Glomb L, Dolashki A, Galabov AS, Beeumen JV, Stevanovic S, Voelter W, Devreese B. Identification of glycosylated sites in Rapana hemocyanin by mass spectrometry and gene sequence, and their antiviral effect. Bioconj. Chem. 20, 7, 1315-1322 (2009) 2. Velkova L., Todorov D., Dimitrov I, Shishkov S., Van Beeumen J. and Dolashka-Angelova P. *Rapana venosa* hemocyanin with antiviral activity, Biotech. Biotech. Equip. 23, 2, 606-610 (2009). 3. Nesterova, N. , Dolashka-Angelova, P. , Zagorodnya, S., Moshtanska, V., Baranova, G., Golovan, A., Kurova, A., In Vitro Investigation of Cytotoxic Action of Hemocyanins on Cell Cultures. *Antiviral Research*, 86 (1), A63-A63 (2010). 4. P. Dolashka, L. Velkova, S. Shishkov, K. Kostova, A. Dolashki, I. Dimitrov, B. Atanasov, B. Devreese, W. Voelter and J. Van Beeumen. Glycan structures and antiviral effect of the structural subunit RvH2 of Rapana hemocyanin. *Carbohydrate research* 345,16, 2361-7 (2010). 5. Velkova Lyudmila, Nikolaeva-Glomb Lubomira, Mukova Lucia, Dolashki Aleksander, Dolashka, Pavlina, Galabov Angel. S., Antiviral Effect of Molluscan Haemocyanines. Antiviral Research, 90 (2), A47, May 2011 6. Zagorodnya, Svitlana, Dolashka, Pavlina, Baranova, Galina Golovan, Anna Kurova, Nesterova, Nadiya, Anti-EBV Activity of Hemocyanin Isolated from *Helix lucorum*. Antiviral Research, 90, 2, A66, May 2011 7. Nesterova Nadiya, Zagorodnya, Svitlana, Moshtanska, Vesela, Dolashka, Pavlina, Baranova, Galina, Golovan, Anna Kurova, Anna, Antiviral Activity of Hemocyanin Isolated from Marine Snail *Rapana venosa*. Antiviral Research, 90, 2, A38, May 2011

8. **P. Dolashka and W. Voelter.** Antiviral activity of hemocyanins. Review, Invertibrate Survival J. 10, 120-127 (2013)

P. Dolashka, N. Nesterova, S. Zagorodnya, A. Dolashki, G. Baranova, A. Golovan and W. Voelter. Antiviral activity of hemocyanins Rapana venosa and Its Isoforms Against Epstein-Barr Virus. Global J. of Pharmac. 8, 2, 206-212, (2014)

6. COORDINATOR

Full name of the coordinator organization;

Institute of Organic Chemistry with Centre of Phyrochemistry, BAS and

Contact person;

Prof. DSc Pavlina Dolashka dolashka@orgchm.bas.bg and pda54@abv.bg

Full name of the coordinator organization;

Institute of Organic Chemistry with Centre of Phyrochemistry, BAS and

7. POSSIBLE PARTNERS

Indicate the partner organizations

Full name of the partner

Sofia University St. Kliment Ohridski, Laboratory of Virology

https://www.uni-sofia.bg/index.php/eng/the_university/faculties/faculty_of_biology2/structures/laboratories/laboratory_of_virology

8. IMPLEMENTED AND RUNNING PROJECTS

Projects related to virology, vaccines, infection diseases …

1. *973968/2003-2005 NATO, "Production and characterization of novel materials (hemocyanins) for prevention of virus infection'*
2. *NSI No. DN 01/14 of 12/19/2016, "Proteomic analysis of novel natural peptides with antibacterial and antifungal activity isolated from snail Cornu aspersum".*
3. *D01-2017 / 30.11.2018, National scientific program "Innovative low-toxic biologically active agents for precision medicine" (BioActMed).*
4. *NSI KP-06-OPR-03/10 of 12/20/2018 (2018-2021), "Development and validation of an in silico method for the identification of biotherapeutics in peptide mixtures of natural origin".*
5. *NSF KP-06-21 / 13 of 12/18/2018 (2018-2021), "New enzymes from the sialidase group in filamentous fungi".*

6. *VS.076.18N, with FWO Belgium (2018-2021), "Proteomics investigation of the antibacterial effect of molluscan bio-active peptides".*
7. *VU-L-310 (2007-2010), Hemocyanins as immunostimulants and antiviral agents. Determination of the gene and carbohydrate structure of hemocyanin H.vulgaris*