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Release Date	2020.03.25	

Professor Chin-Ju Park's research team is developing technology for COVID-19 serological diagnosis

- Gwangju Institute of Science and Technology (GIST, President Kiseon Kim) Department of Chemistry Professor Chin-Ju Park research team was selected as a priority project by the 2020 Academic R&D Service Project * for "2019 New Coronavirus Diagnosis Antigen, Anti-serum Production and Efficacy Evaluation."

* The Korea Centers for Disease Control and Prevention designated the 2019 novel coronavirus-related academic research and development project as an urgent issue and held an emergency contest on February 17 under seven categories.

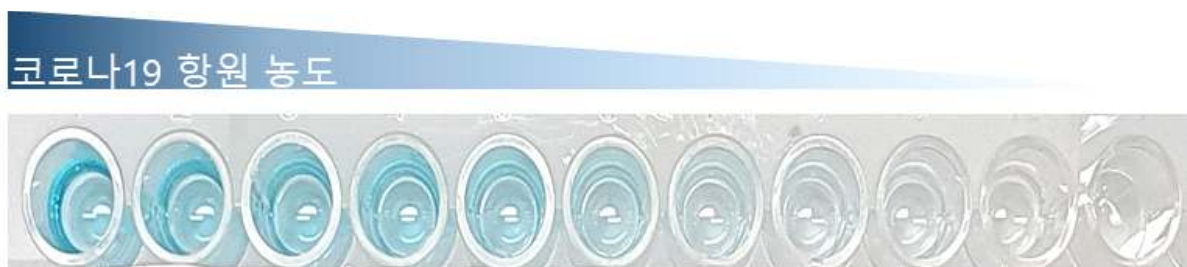
- On March 16, the Korea Centers for Disease Control and Prevention announced its selection of five research teams * including GIST Professor Chin-Ju Park's team as candidates for priority negotiation after two rounds of rigorous screening, including document and presentation evaluation.

* GIST (2019 new coronavirus diagnosis antigen, anti-serum production and efficacy evaluation), Celltrion (2019 monoclonal antibody non-clinical candidate discovery for new coronavirus treatment), SK Bioscience (development of candidates for synthetic antigen-based corona19 subunit vaccine), National Medical Center (2019 novel coronavirus infection domestic confirmatory immunological characteristics study), and Kyungpook National University Hospital (clinical epidemiological study of 19 patients in Corona).

- Although genetic testing is currently used as a laboratory diagnostic method for new coronavirus, the test may be limited depending on when the symptoms are expressed and when the virus disappears, and a hematological detection

method is necessary for investigating epidemiological findings, including infection history as well as evaluation of the efficacy of vaccines and treatments.

- Professor Chin-Ju Park's team has secured the genetic resources necessary for the expression and purification of N protein of the 2019 novel coronavirus and, under the direction of Dr. Gyuho Yeom, a post-doc in Professor Park's lab, plans to conduct research for the production of antigen proteins in various expression systems.
 - Also, they plan to produce antiserum (polyclonal antibody) through animal model experiments using the obtained antigen. In particular, in order to perform the application of the enzyme and immunoassay (ELISA) of the antigens and antibodies produced in this study, a joint research team was formed with GIST Chemistry Professor Min-Gon Kim (Ph.D. student Ju-young Kang), an authority in the field of diagnosis. The project will be carried out from the date of the contract to the end of this year.
- Professor Chin-Ju Park said, "The goal of the study is to secure the technology necessary for the serological diagnosis of the COVID-19 antigen by utilizing the know-how that we developed from a high-sensitivity assay for the severe fever thrombocytopenia syndrome (SFTS) virus spread by ticks."
- Previous research of Professor Chin-Ju Park and Min-Gon Kim related to this research topic have been published in professional journals such as *Analytical Chemistry*.



▲ The goal of this study is to develop a diagnostic technology that checks for the presence or absence of the COVID-19 antigen through color. (Figure shows preliminary experiment results)