

## Nippon Gene Develops Viral RNA Extraction Kit "ISOSPIN Viral RNA"

An extraction kit compatible with COVID-19 tests and viral research

April 3, 2020 - Nippon Gene Co., Ltd. (President: Shinji Kanayama, Headquarters: Chiyoda-ku, Tokyo), a manufacturer of genetic engineering research reagents and diagnostic reagents for humans, animals, and plants, has successfully developed a new and improved RNA extraction kit that can be applied for testing and research of the COVID-19 coronavirus.

The diagnosis of the COVID-19 is performed by extracting and purifying viral RNA as a pretreatment (often requires 2-3 hours), followed by the conversion of the RNA to DNA and detection using nucleic acid amplification techniques such as PCR or LAMP. For COVID-19 coronavirus diagnosis, currently a bottleneck in the diagnostics of the COVID-19 coronavirus is time-consuming pretreatment before the amplification detection on device, since the test is largely automated and the device has also spread to some extent. The pretreatment process is performed manually by the examiner since they are complicated and cannot be automated. Because of this, the yield of the viral RNA varies widely, which may cause the test results to be significantly affected.

Currently, extraction kits from European reagent manufacturers are widely used for pretreatment, but shortage of the kit can be seen around the world due to excessive demand for extracting viral RNA. The company has been working on a development project aimed at simplifying the pretreatment process and improving extraction efficiency, and succeeded on the development, with the leadership of its chairperson and founder Dr. Yuko Yoneda. The company decided to start selling the kit from April 15.

This pretreatment kit has the same or higher extraction efficiency compared to competitors' products, while the processes are reduced and simplified. The kit is made in Japan, ensuring the stable supply of this kit to the inspection system at domestic universities and research laboratories, even in the case that the import of kits from overseas is delayed. The kit can be applied to diagnostic tests of all manufacturers regardless of the PCR method and LAMP method, offering the convenience to all laboratories.

There is a strong demand from the hospital for the higher testing sensitivity in order to confirm whether patients are in the very early stage of COVID-19 coronavirus infection, whether patients can be discharged from the hospital, whether the disease is completely cured and the recurrence after discharge. Nippon Gene will continue to develop the pretreatment kits with even higher extraction efficiency.

The development of this product is the result of collaborative research with Hideki Tani, Associate Professor of Virology, Faculty of Medicine, University of Toyama. The performance of the kit is currently being evaluated by public research institutions.

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