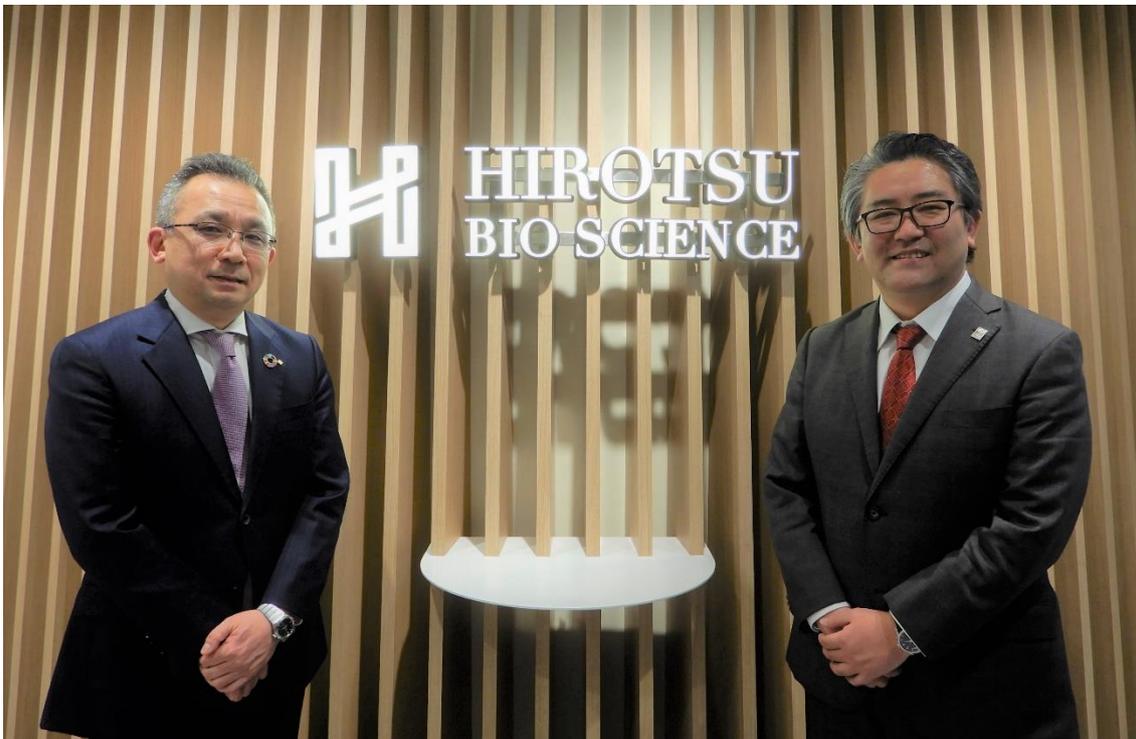


Tokyo, Japan – February 16, 2021

HIROTSU BIO SCIENCE and Yokogawa Sign Investment and Partnership Agreement

— Collaboration to widen use of N-NOSE cancer screening test —

HIROTSU BIO SCIENCE INC. (HBS) and Yokogawa Electric Corporation (TOKYO: 6841) announce that they have signed an investment and partnership agreement with the goal of expanding the use of HBS's N-NOSE[®] cancer screening test service, which utilizes the highly sensitive olfactory sensory functions of nematodes to detect cancer. Under this agreement, Yokogawa will invest in HBS, and be responsible for the manufacturing and maintenance of N-NOSE's automatic analysis equipment. The two companies are also aiming to develop new automatic analysis equipment and promote the global growth of the N-NOSE business.



From left: Hiroshi Nakao, a Yokogawa vice president and head of the Life Innovation Business Headquarters; Takaaki Hirotsu, HBS's president and CEO

Issues with cancer screening include the difficulty of detecting cancer at an early stage and the fact that not enough people are having these tests, and this can be attributed to the lack of a primary screening test method that can easily detect many kinds of cancer with high accuracy and at low cost. These issues have become particularly acute during the COVID-19 pandemic as many people with underlying diseases are reluctant to risk exposure to the virus by visiting medical institutions to undergo testing.

The N-NOSE service presents a solution to these issues, but to provide this service to a broader segment

of the market, HBS must now scale up the production of its automatic analysis equipment. With Yokogawa's manufacturing capacity and life science know-how, the two companies will be able to build a system for the mass production and maintenance of this automatic analysis equipment and meet the expected growth in demand for testing. They will also explore collaboration in the development of next-generation automatic analysis equipment and the global expansion of the N-NOSE business. For this business, HBS will provide nematode cancer screening technology and know-how, and Yokogawa will leverage its core measurement, control, and information technologies, and a global network that spans 62 countries.

To share the risks and returns of these collaboration activities, the two companies have agreed to adopt the same revenue sharing method used by many companies in the IT software and systems sectors.

The N-NOSE primary screening service uses nematodes, organisms that are about one millimeter long, have an excellent sense of smell, and are inexpensive to nurture, to detect cancer from trace amounts of odorants in urine samples. HBS research has found that nematodes are able to detect at a very early stage (0 or 1) 15 different cancers^{*1}, including gastric, colorectal, and lung cancer, with a probability of about 86%^{*2}. This comprehensive cancer test only requires the one-time submission of a urine sample and costs much less to administer than other currently available tests.

Having completed development of its own automatic analysis equipment, HBS launched the N-NOSE service in January 2020. In response to the COVID-19 pandemic, the company is now planning for the spring 2021 launch in Japan of an “N-NOSE at home” service that can be conducted at home.

Regarding the partnership, Hitoshi Nara, Yokogawa president and CEO, said, “For Yokogawa, this collaboration is an important co-innovation initiative for achieving well-being for all, which is one of our “Three goals” for sustainability, and we believe that this will make a significant contribution to society. We will use this agreement as a starting point to build a strong relationship with HIROTSU BIO SCIENCE, and work toward further value co-creation.”

Takaaki Hirotsu, HBS president and CEO, commented, “N-NOSE, a nematode cancer test, aims to become an annual test for all people in the world as a primary screening cancer test. In order to achieve this goal, high throughput, mass production, and global support of the automated analysis system are essential, and we consider the alliance with Yokogawa Electric Corporation to be of utmost importance in promoting the N-NOSE business. Another feature of this project is that we will be adopting a revenue sharing method for hardware technology, which is very rare. This is a new form of collaboration between a venture company and a large corporation, and we hope that new value that will change the world will be created from it.”

*1 Stomach, colorectal, lung, breast, pancreatic, liver, prostate, uterine, esophageal, gallbladder, bile duct, kidney, bladder, ovarian, oropharyngeal

*2 Based on data compiled by the Japanese Association for Cancer Prevention (June 2019), the Japan

Society of Ningen Dock (July 2019), and the Japanese Association for Cancer Detection and Diagnosis (August 2019)

Yokogawa Electric Corporation

Founded: September 1915

President and CEO: Hitoshi Nara

Business: Manufacture, sales, and maintenance services for industrial control and measurement equipment, etc.

Website: <https://www.yokogawa.com/>

HIROTSU BIO SCIENCE INC.

Founded: August 2007

President and CEO: Takaaki Hirotsu

Business: Research, development, and sale of a cancer screening test that utilizes the olfactory sensory functions of nematodes

Website: <https://hbio.jp/en/>

N-NOSE: <https://hbio.jp/en/srv/nnose1>

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