

Verification of N-NOSE cancer screening test technology and reproducibility by third-party research institutes in Japan and overseas

N-NOSE, the world's first biological diagnosis method, is a technology owned by HIROTSU BIO SCIENCE INC. (headquartered in Chiyoda-ku, Tokyo; President & CEO: Takaaki Hirotsu). The National Institutes for Quantum Science and Technology (QST) and several overseas research institutes conducted "replication studies" to verify the effectiveness and reproducibility of our cancer screening technology, which utilizes the odor-detection abilities of nematodes. These third-party research institutes confirmed the effectiveness and reproducibility of the technology in which nematodes are able to identify cancer with great accuracy, and have already documented the results in published unexamined patent applications and academic journals.

We are pleased to announce that the effectiveness of our nematode cancer screening technique was assessed objectively through publication of work by these third-party research institutes, demonstrating the scientific reliability of our method.

【Additional information】

International application number: PCT/JP2020/017674

International publication number: WO2020/218501

Applicant: National Institutes for Quantum Science and Technology (QST)

(The following two studies were reported in a press release on November 8, 2021.)

***C. elegans*-based chemosensation strategy for the early detection of cancer metabolites in urine samples**

Lanza, et al., Scientific Reports, 2021

A *Caenorhabditis elegans* Behavioral Assay Distinguishes Early Stage Prostate Cancer Patient Urine from Controls

Thompson, et al., Biology Open, 2021

As we continue to lead the world in the invention of biological screening technology, we will actively collaborate with partner research organizations to expand N-NOSE globally.

■ About N-NOSE nematode cancer screening

N-NOSE is the world's first primary cancer screening test that utilizes "nematodes," microorganisms that are highly sensitive to the odor of cancer in human urine. Clinical research has shown that nematodes even respond to early-stage cancer (stages 0 and I), which is difficult to detect with conventional screening methods.

The fact that cancer risk can be assessed in one test, regardless of the location in the body,* is another strength that sets N-NOSE apart from other tests.

* Types of cancer that nematodes are known to respond to: stomach, colorectal, lung, breast, pancreatic, liver, prostate, uterine, esophageal, gall bladder, bile duct, kidney, bladder, ovarian, oral/pharyngeal—15 types of cancer (as of September 2019)

Note: This press release is an expanded and revised version of the press release issued on November 8.

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Incorporated August 2016

Business Overview Biological Diagnostics Research:
Research, development, and sale of cancer diagnostic test utilizing *C. elegans* and *C. elegans* olfactory sensors

URL <https://hbio.jp>