

**The report of launch joint clinical research on HIROTSU BIO SCIENCE's  
high accuracy "N-NOSE" cancer screening test using nematodes.**

We report here that HIROTSU BIO SCIENCE INC. (Head office: Minato-ku, Tokyo, President & CEO: Takaaki Hirotsu; hereafter referred to as HIROTSU BIO) and JA Hokkaido Kouseiren Engaru-Kosei General Hospital (Hospital Director: Hidehiko Yabuki/ hereafter referred to as Engaru-Kosei General Hospital) have launched joint clinical research for "N-NOSE" cancer screening test using nematodes.

"N-NOSE" is a highly accurate, comprehensive cancer screening method utilizing the amazing sensing capability of living organism. "N-NOSE" using urine sample is painless, and is simple and comprehensive screening test for detection of cancer.

At this time, we collaborate with Engaru-Kosei General Hospital which is engaged in community healthcare, advanced medical care, and emergency medical care as the central core hospital of eastern and northern Hokkaido. Therefore, it is expected that our collaboration provides clinical evidence of effectiveness of "N-NOSE" on digestive system cancer, lung cancer, breast cancer, and malignant lymphoma.

Current clinical research of "N-NOSE" shows high accuracy that the sensitivity is 93.8 % (HirotsuBio's press release on Dec. 13, 2016). We thus believe the social implementation of "N-NOSE" will lead to many advantages such as dramatic increase in a medical examination rate of the cancer screening test, increase of chance to detect the early-stage cancer, dramatic decrease in the number of deaths by cancer, and large reduction in medical costs.

**The aim and the content for this research**

Cancer has been the biggest single killer in Japan since 1981; one in two Japanese people have undergone cancer; one in three have died from cancer. It is reported that early detection is important for the treatment of cancer, however the medical examination rate of a cancer screening test remains in a low level. The reason of the low examination rate of a cancer test should be derived from the pain of traditional cancer screenings, much time for undergoing the tests, and high cost. A less expensive, highly accurate, and non-invasive cancer screening test is required, and many researchers aim to develop cancer biomarkers throughout the world. Our study tries to establish an improved cancer screening test by utilizing the olfaction of nematodes, namely "N-NOSE".

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**Inquiry Recipient**

HIROTSU BIO SCIENCE INC.

2F Forum Bldg., 2-24-11 Minamiaoyama, Minato-ku, Tokyo 107-0062, Japan

E-mail: [press@hbio.jp](mailto:press@hbio.jp)