

Press release 2017/06/17

## **N-NOSE evaluation for cancer treatment and recurrence**

Cancer Screening Using Nematodes "N-NOSE" cancer treatment evaluation,  
It is an interim report on the effectiveness of cancer recurrence monitoring evaluation.

We report on the effectiveness of cancer treatment evaluation, metastasis / recurrence monitoring on clinical research "N-NOSE" jointly conducted by HIROTSU BioScience and Nanfu Hospital.

Accurate and comprehensive Cancer Screening Using Nematodes "N-NOSE" making use of phenomenal sensor capabilities of living things, There are excellent features such as simple, inexpensive, high sensitivity, early detection, and as a primary cancer screening test, It is expected to be put into practical use at an early stage. By using urine, it can be inspected conveniently without pain or invasion to the body. In addition, it is also suitable for monitoring of metastasis / recurrence, as it is also possible to evaluate treatment before and after cancer treatment and frequent treatment at follow-up.

### <Cancer Treatment Evaluation>

41 cancer patients who showed positive in N-NOSE test before cancer treatment (Pancreatic cancer, colon cancer, stomach cancer, esophageal cancer, gall bladder, bile duct cancer) Negative conversion was observed in 29 cases (70.7%) by N-NOSE examination about 1 month after treatment. This suggests that N-NOSE may be effective for cancer treatment evaluation, Furthermore, due to the treatment of "cancer", the reaction of nematodes changed, so that nematodes "cancer" It was suggested that it responded to the smell.

### <Monitoring of metastasis / relapse>

Among the 41 subjects examined in this study, 3 cases of recurrence (metastasis) were observed during follow-up observation for 150 days,  
N-NOSE test showed positive in all three cases (2 cases changed positive after negative conversion once, One case showed positive from immediately after surgery). The N-NOSE inspection can be repeatedly used,

It is expected to be put to practical use as a transfer / recurrence monitoring technique.  
Detailed results of this exam will be announced in paper and conference.

#### <Method of this Test>

For cancer patients who agreed to cooperate in this study, N-NOSE test was conducted before treatment,

Targeted those who showed positive. Urine is collected one month after cancer treatment, three months after, six months after .

We conducted N-NOSE inspection. After analyzing N-NOSE test results, it compares it with medical information and summarized the results.

#### <Reference>

##### ●N-NOSE

A technique to distinguish the smell of cancer in urine due to the excellent olfactory sensation of *C. elegans*.

The nematode utilizes the running behavior shown against the odor (attracting behavior for favorite smells, repelling behavior for disgusting smells).

Nematodes show attractive behavior in urine of cancer patients and evasive behavior in urine of healthy volunteers.

##### ●Biological Diagnosis

Technology to diagnose illness by ability of living thing, not artificial equipment.

"N-NOSE" detects microscopic odor substances unique to cancer by the olfactory sensation of nematodes that exceeds the capacity of artificial instruments.

There is a possibility that the cancer tissue is small and effective for early cancer with a small amount of cancer marker.

##### ●On the practical application of N-NOSE

Currently there are many inquiries from those who wish N-NOSE inspection, but it is still in the research stage, we do not inspect the general public. Since we are promoting research and development aiming at practical use as soon as possible,

We appreciate your understanding.