BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Japanese research increases effectiveness of cancer detection tests using urine

12 July 2023 | News

Succeeded in isolating urinary cfDNA, which was exceptionally difficult with conventional methods

A group led by researchers at Nagoya University in Japan has developed a technology to capture and release cell-free DNA (cfDNA) on nanowire surfaces from urine.

By extracting this DNA, they were able to successfully detect IDH1 mutation, a characteristic genetic mutation of gliomas, a type of brain tumour. Their findings increase the effectiveness of cancer detection tests using urine.

Brain tumours are often examined only after the appearance of symptoms, such as paralysis of the limbs. But even when they are detected, they are often so advanced that it is difficult to remove them by surgery. Among these tumours, some of the deadliest are gliomas. These tumorus have an average survival time as low as 12-18 months. Therefore, for the patient to have a chance of survival, early detection is necessary.

This new research overcomes the shortcomings of currently used methods by using chemical, biological, medical and nanotechnological techniques to provide a state-of-the-art method for the clinical use of urinary cfDNA, especially as an analytical tool to facilitate the early diagnosis of cancer.