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NOVEL DIAGNOSTIC MARKER FOR EARLY DETECTION OF BLADDER CANCER

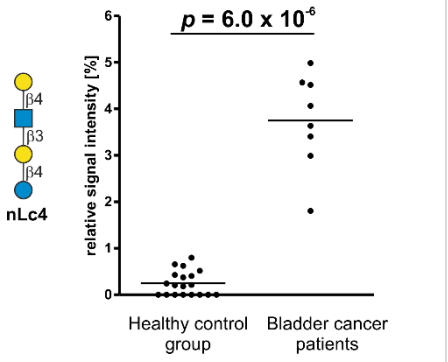
Keywords: Bladder cancer, glycan, diagnostic marker, tumor-specific antigen

INVENTION NOVELTY

Researchers from Hannover Medical School identified two distinct glycans with strong prognostic value for bladder cancer.

VALUE PROPOSITION

Bladder cancer is a life-threatening disease and the chances for curative treatment are strongly depending on the time-point of diagnosis. The identified tumor-specific glycans can be easily detected in patient's urine e.g. during preventive medical check-ups and allow for an early, non-invasive diagnosis of bladder cancer.



TECHNOLOGY DESCRIPTION

Glycosphingolipids have been shown to be suitable markers for different malignant diseases but identification and quantitative measurement of single glycosylation patterns is very complex and not suitable for standard diagnostic tests. Therefore, a novel analytic method was developed, allowing for quantitative detection of glycans after hydrolysis of the respective glycosphingolipids. Using the novel method two glycans, Lnc4 and Gb4, were identified to be significantly enriched in urine samples of bladder cancer patients compared to healthy individuals. Due to a significantly increase of this glycans between 5 to 10 times above normal, healthy values, the identified glycans represent novel markers for early and reliable detection of bladder cancer.

COMMERCIAL OPPORTUNITY

In-Licensing or collaboration for further development is possible.

DEVELOPMENT STATUS

The analytic method has been successfully tested to distinguish urine samples from human bladder cancer patients and healthy individuals. An antibody-based detection is currently in development.

PATENT SITUATION

PCT application (PCT/EP2020/071613) with priority of 2019 has been filed.

FURTHER READING

Rossdam et al., Analytical Chemistry, 2019: Approach for profiling of glycosphingolipid glycosylation by multiplexed capillary gel electrophoresis coupled to laser-induced fluorescence detection to identify cell-surface markers of human pluripotent stem cells and derived cardiomyocytes.

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