Novel DNA Methylation Markers to Detect Cancer Recurrence

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Technology description

Market Opportunity

Bladder cancer is one of the ten most prevalent malignancies in the United States affecting 80,000 new people every year. Non-muscle invasive bladder cancer accounts for 80% of all bladder cancer cases and transurethral resection of bladder tumor (TURBT) is currently the first line of treatment. However, frequent monitoring with invasive procedures like cystoscopy is necessary after treatment, because tumors recur in half of the TURBT patients. The $3 billion market for bladder cancer diagnostics has very few non-invasive predictive biomarkers that can save patient management costs and improve their quality of life.

USC Solution

USC researchers have innovated a series of urine sediment-based biomarkers that can predict bladder tumor recurrence in TURBT patients non-invasively. They found that two tumor-specific hyper-methylated markers SOX1 and IRAK3 and one hypo-methylated marker L1-MET show significant correlation with cancer recurrence and can be detected prior to clinical evidence of recurrence.

Application area

Non-invasive diagnostic approach to detect bladder cancer recurrence

Advantages

Highly sensitive and specific technique compared to cytology or cytoscopy
Reliably predicts recurrence with a low false-positive prediction rate (7%)
Non-invasive and cost-effective approach to improve treatment strategies

Institution

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