Novel Serum miRNA Biomarkers for Prostate Cancer Diagnosis

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Technology description

UCSF inventors have profiled the expression of 672 miRNAs in serum of candidates for active surveillance of prostate cancer and discovered novel miRNA biomarkers, whose serum levels differed between patient groups with significantly and indolent disease. Addition of validated miRNA markers to the current predictive model significantly improved its accuracy in predicting disease progression. Prostate cancer is the most commonly diagnosed cancer and the second leading cause of cancer mortality in adult American men, with an estimated 217,730 new cases diagnosed in the U.S. in 2010. Screening for prostate-specific antigen (PSA) has led to earlier detection of prostate cancer. However, elevated serum PSA can be present in other non-malignant conditions, such as benign prostatic hyperplasia and, therefore, PSA screening has a high false positives rate. Active surveillance (AS) of prostate cancer is a current strategy that is used to reduce overtreatment by monitoring of low-risk patients with physical exams, PSA assessments and repeat biopsies, and offering treatment to those with signs of progression. However, nomograms that utilize these predictors of disease progression demonstrate an accuracy of only 61-79% in the clinic. Given the limitations of PSA and significant disease that can be used to categorize patients with localized prostate cancer and assist in treatment decision-making. Several recent studies have shown that serum miRNA signatures have potential value as prognostic tools for prostate cancer.

Other Information

This technology is available for licensing. Investigators welcome the opportunity to collaborate with industry partners.

Inventor Information

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Application area

Diagnostic and prognostic tool for categorization of patients with localized prostate cancer
Optimization of active surveillance strategy for prediction of disease progression
Reduction in overtreatment and use of radical intervention for prostate cancer patients

Advantages

Less invasive, simpler and safer than biopsy/surgery
Not limited by biopsy sampling error, a serious problem with tissue-based tests
Validated in an independent patient cohort

Institution

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