Detection of HER2 in Urine to Diagnose Lupus Nephritis (LN)

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Technology description

Point-of-care biomarker for Systemic Lupus Nephritis
Market Need
Systemic Lupus Erythematosus (SLE) is an autoimmune disease that varies in severity in which the patient’ s immune system mistakenly attacks healthy tissues in the body. Lupus Nephritis (LN) is kidney inflammation, which is a complication of SLE that causes decreased kidney function. LN is often difficult to diagnose because the symptoms, which include painful swollen joints, fever, feeling tired, and swollen lymph nodes, can vary and be misdiagnosed for other diseases. Currently, diagnosing LN requires a non-definitive battery of non-specific tests, including blood tests, ultrasound, and even kidney biopsy, which often require further patient monitoring to determine diagnosis. In order to administer anti-inflammatory treatments sooner and to be able to monitor LN treatment, a more definitive biomarker for LN is needed.
Technology Overview
The inventors have shown that increased levels of HER2 protein are detectable in the urine of LN patients. Furthermore, they also show that HER2 levels are increased in LN patients undergoing active flares when compared to non-active LN, suggesting the possible utility of HER2 in the urine to predict or monitor LN flares and treatment regimens. Detection was performed using an ELISA assay, which is amenable to adaption to a point-of-care diagnostic test.

Application area

- Non-invasive diagnosis of LN
- Monitor LN flares and disease treatment

Advantages

- Non-invasive biomarker for LN that can be measured in urine
- Could be used to monitor LN treatment
- Can be adapted to point-of-care diagnostic format

Institution

The Children's Hospital of Philadelphia

联系我们

叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com