NOVEL PLATFORM FOR RAPID DIAGNOSIS OF CYTOMEGALOVIRUS

DIAGNOSTICS

Lateral flow assay diagnostic test for rapid detection of cytomegalovirus in infants using urine or saliva samples.

TECHNOLOGY SUMMARY

Approximately 40,000 infants in the U.S. are born with congenital cytomegalovirus (CMV). Nearly four hundred infants die from the virus each year, and over 7,000 experience permanent hearing loss. Most CMV cases are diagnosed following two failed hearing tests. Many infants, however, are asymptomatic and their condition goes undiagnosed. Universal testing for CMV in infants could minimize missed diagnoses, but the high costs of PCR screening methods prevent widespread testing. The proposed technology utilizes a lateral flow assay (LFA) to detect CMV in saliva or urine rapidly. It involves placing a pad over anti-CMV antibodies. When the pad is saturated with either the urine or saliva of an infant, the anti-CMV gold nanoparticles will bind to any CMV present, showing as two red lines. This test is rapid, non-invasive, and inexpensive, which would allow universal testing. The device could be used either as a dip-stick style test or placed in the bottom of a diaper, eliminating labor and resource costs associated with conventional CMV testing.

FEATURES AND BENEFITS

- Improves accuracy of CMV diagnosis compared to hearing tests.
- Enables point-of-care testing.
- Provides rapid results (<10 minutes).
- Eliminates need for specialized equipment and training.
- Reduces costs.

RECENT PUBLICATIONS


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Proof of concept demonstrated through testing with clinical samples, positive controls, and other matrices.

INVENTOR PROFILE

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