

Technology: Urine-based HIV Diagnostic Test

Morehouse School of Medicine (MSM) Case No.: IP-0012

Patent Applications: US 12/572,652, PCT/US2009/59500, ARIPO AP/P/2011/005665, AU 2009302612, CA 2,738,666, CN 200980139248.3, EP 2009819705

Abstract:

Investigators at Morehouse School of Medicine showed non-infectious HIV viral exosomes/vesicles (~100 nm) are shed by infected patients before antibodies to the virus appear. HIV particles, shed in urine express several antigens, can be directly detected by mass spectrometry, Western blot, ELISA, or immuno-blot. Analysis of 196 urine samples from HIV positive (human, M/F, 18-60 yrs of age) patients demonstrated successful detection of HIV antigens 100% of the time, without false positives. Findings from these immuno-blot studies can be quickly translated to a point of care device, e.g. pregnancy test, or high-throughput test in clinics.

Applications:

- Clinical diagnostic test for the identification of productive HIV infection
- Hospitals, commercial laboratories, blood banks, physician offices, public health labs, and ambulatory/home use settings

Value Proposition:

- Immunoblot prototype for rapid urine test to detect HIV antigen-containing exosomes.
 - Test confirmed to reliably (> 99.99% accurate) detect HIV-1 infection using clinical samples (N = 196).
 - A dominant patent position for methods and compositions to detect HIV-1 antigens in urine.
 - Current tests indirectly detect HIV through measuring host antibodies or amplifying viral RNA.
 - The current technology is inexpensive, presents no occupational health hazard, and detects HIV antigens in urine that can appear within the first week of infection.
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