

Poster presentation

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## Development of a Simple and Affordable S/LS Assay to Distinguish Recent and Established HIV Infection

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from 2005 International Meeting of The Institute of Human Virology  
Baltimore, USA, 29 August – 2 September 2005

Published: 8 December 2005

*Retrovirology* 2005, **2**(Suppl 1):P41 doi:10.1186/1742-4690-2-S1-P41

### Background

Sensitive/less-sensitive (S/LS) serologic assays that differentiate recent from established HIV infection may not be suitable for use in resource-limited and financially challenged countries. A more simple and affordable method is needed to address these limitations. Methods: The Serodia HIV-1/HIV-2 particle agglutination assay (PA) was modified to act as a S/LS assay. Antigen-coated gelatin particles were diluted 1:68, and sera were diluted at intervals from 1:10 to 1:80,000; HIV antibody status was confirmed at the 1:10 dilution. 37 clade B seroconversion panels from Trinidad and BBI (n = 309) were tested at each sample dilution to calibrate the PA assay; the last positive reaction (>1+) was considered the endpoint dilution (ED). The greatest sensitivity for correctly classifying recent and established infection samples was determined by ROC analyses. A subset of these panels (n = 181) was also tested by the Vironostika S/LS (DV) as a reference for comparison.

### Results

At a dilution of 1:40,000 and a days post SC cutoff of 190 days the PA test gave 97% sensitivity for classifying both recent and established infection samples, as compared with 82% and 53% on a subset tested by the DV; this resulted in a poor concordance of 60% and 73%.

### Conclusion

A low cost, simple to perform PA test was modified as a S/LS test and exhibited excellence in distinguishing recent and established HIV infection. The PA S/LS performed

more accurately than the reference DV S/LS when testing samples with known times of seroconversion.