

POSTER 64

A SENSITIVE AND PRECISE ASSAY FOR INTEGRATED HIV DNA CAN BE USED TO MEASURE VIRAL RESERVOIR SIZE IN HIV-POSITIVE ELITE SUPPRESSORS

Liszewski MK¹, Graf EH¹, Mexas AM¹, Yu JJ¹, Migueles SA², and O'Doherty U¹

¹Department of Pathology and Laboratory Medicine, University of Pennsylvania, 265 John Morgan Building, 3620 Hamilton Walk, Philadelphia, PA; ²Laboratory of Immunoregulation, NIAID, NIH, Bethesda, MD

Introduction: One important goal in HIV is to eradicate treatment resistant reservoirs. One step toward this goal is to measure HIV reservoirs more robustly. In this manner, it would be possible to evaluate the effect of therapies that target reservoirs. We have further enhanced our assay to measure HIV integration such that we can detect less than 1 integration in 1 million cells.

Methods: To enhance our sensitivity, we changed our method of quantitation so that the percent of wells with detectable integration are used to determine the integration level. This approach allowed us to dramatically increase our sensitivity and simultaneously decrease the work required to measure low integration levels.

Results: We applied our new approach to measure integration in several patients including elite suppressors. We found the level of integration in the elite suppressors were lower than in other patients. One patient had an integration level as low as 1 in 1 million cells.

Conclusions: Our assay was sensitive enough to detect integration even in elite suppressors and demonstrates the level of integration is lower in this population. It is known that elite suppressors have lower levels of latently infected cells (in fact only a portion can be detected by the IUPM assay). Thus our data suggests that monitoring integration levels may serve as a surrogate measure of latent infection.