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## A robust HIV-1 viral load detection assay optimized for Indian sub type C specific strains and resource limiting setting

Parth Shah<sup>3</sup>, Arpan Acharya<sup>1</sup>, Salil Vaniawala<sup>2</sup>, Parth Shah<sup>3</sup>, Harsh Parekh<sup>4</sup>, Rabindra Nath Misra<sup>5</sup>, Minal Wani<sup>1</sup> and Pratap N Mukhopadhyaya<sup>4</sup>

<sup>1</sup>Dr. D. Y. Patil Biotechnology & Bioinformatics Institute, India

<sup>2</sup>SN Genelab, India

<sup>3</sup>Supratech Micropath Laboratory & Research Institute, India

<sup>4</sup>Interdisciplinary Science, Technology and Research Academy, India

<sup>5</sup>Padmashree Dr. D. Y. Patil Medical College & Research Centre, India

Human Immunodeficiency Virus Type 1 (HIV-1) viral load testing at regular intervals is an integral component of disease management in AIDS patients. The need in countries like India is an assay that is not only economical but efficient and highly specific for HIV-1 sub type C virus. This study reports a SYBR Green-based HIV-1 real time PCR assay for viral load testing and is designed for enhanced specificity towards HIV-1 sub type C viruses prevalent in India. Linear regression of the observed and reference concentration of standards used in this study generated a correlation coefficient of 0.998 ( $p < 0.001$ ). Lower limit of detection of the test protocol was 50 copies/ml of plasma. The assay demonstrated 100% specificity when tested with negative control sera. The Spearman coefficient of the reported assay with an US-FDA approved, kit was found to be 0.997. No significant difference in viral load was detected when the SYBR Green based assay was used to test infected plasma stored at -200C and room temperature for 7 days respectively (Wilcoxon signed rank test,  $p = 0.105$ ). The HIV-1 viral load assay reported in this study was found to be robust, reliable, economical and effective in resource limited settings such as those existing in India. PCR probes specially designed from HIV-1 Subtype C-specific nucleotide sequences originating from India imparted specificity towards such isolates and demonstrated superior results when compared to two similar commercial assays widely used in India.

### Biography

Parth Shah has completed his MBBS (Medicine) from the Gujarat University in India at the age of 24. He has trained at the Brigham and Womens hospital in Molecular Genetics and has been working as a Research Scientist for Infectious diseases and Oncogenic Markers on Next Generation Sequencing at Supratech Micropath Labs (CAP and NABL accredited) for the last 1 year.

[parth.shah@supratechlabs.com](mailto:parth.shah@supratechlabs.com)