



**Fig. S1 Systems biology markup language (SBML) compliant network of interactions between HIV ( $V$ ) and HPV ( $W$ ) created using CellDesigner.** The left side of the figure represents the HIV dynamics wherein the interaction between target CD4+ T cells ( $T$ ), productively infected CD4+ T cells ( $I$ ) and HIV ( $V$ ) are shown. The figure also includes the effect of reverse transcriptase ( $RT$ ) and protein inhibitor ( $PI$ ) (shown by red line - inhibition). The right side of the figure represents the HPV dynamics wherein the interaction between infected basal cells ( $Y_1$ ), suprabasal transit-amplifying cells ( $Y_2$ ), HPV specific ( $E$ ) cells and HPV ( $W$ ) are shown.