

POSTER 20**CHARACTERIZATION OF HIV-2 Q151M MUTATION**

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HAART individuals infected with HIV-2 develop the Q151M MDR mutation faster than those infected with HIV-1. Frequently, HIV-2 clinical isolates containing the Q151M also contain the V111I mutation. Analysis of clinical HIV-2 isolates, virus with both 151M and 111I showed increased resistance to NRTI over samples with 151M alone. *In vitro* assays using MAGIC-5A cells concluded that Q151M alone is sufficient to produce high-level AZT resistance in HIV-2 and the V111I substitution is not required for broad spectrum NRTI resistance. Our study using infectious HIV-2 (ROD) generated by SDM containing Q151M alone or together with V111I mutation was tested in a heteropolymeric DNA colorimetric RT assay to determine the efficiency of different NRTI-TP. This study demonstrated the impact of Q151M and V111I mutations on the HIV-2 resistance profile using human PBM cells. The enzymatic assays of HIV-2_{151M} RT showed that HIV-2_{151M} independently contributes high resistance to AZT-TP, DOT-TP, and DXG-TP, while CBV-TP and TFV-DP were effective. These results are consistent with the outcome of a recent study showing the HIV-2 resistance profile in a different cell system. Fitness/competition assay between HIV-2 WT and Q151M mutant virus showed for the first time that 151M alone is very unfit in HIV-2 genome in absence of drug by week 14. In contrast to HIV-1, a single Q151M replacement in the HIV-2 genome makes the virus unfit. Probably Q151M virus needs the V111I mutation to persist in the genome. Further studies will be performed to uncover the relationship between these two mutations. Our finding shows that Q151M alone in the HIV-2 genome is sufficient to produce high level resistance against many NRTI and confers a significant replicative disadvantage in the wild type virus.