### Introduction

- M184V and M184I are common NRTI resistance substitutions
  - Confers high-level resistance to lamivudine (3TC) and emtricitabine (FTC), and decrease susceptibility to abacavir (ABC) and dolutegravir, but increase susceptibility to tenofovir (TDF) and zidovudine
  - Occur in up to 67% of participants after treatment failure

- Proviral DNA genotype can help guide regimen switching

### Efficacy Analysis

- Virologic outcomes based on last available on-treatment GT, Genosure® MG, and PhenoSense®, Monogram

- Virologic outcomes after switching to B/F/TAF
  - Week 48, or last visit on study drugs
- V-1 RNA

- Occur in up to 67% of participants after treatment failure

- Bioinformatic filters removed APOBEC-mediated
- Confers high-level resistance to lamivudine (3TC)

### Objectives

- To determine the prevalence of preexisting M184V/I among 2034 virologically suppressed clinical trial participants in Studies 4030, 4580, 1844, 1878, 4449, and 1474, and evaluate the impact of preexisting M184V/I on virologic outcomes after switching to B/F/TAF

### Methods

#### Baseline Genotypic Analyses

- Historical HIV-1 genotype reports were collected if available on enrollment
  - HIV-1 proviral DNA genotype testing (GenSure Archive) was performed on all samples
    - Bioinformatic filters removed APOBEC-mediated hypermutated deep-sequence reads from GenSure Archive results
    - To prevent overestimation of E20K, M184V, and M200I in reverse transcriptase (RT) and G163R in IN
  - Participants with preexisting resistance detected after enrollment continued on study and were included in all analyses

#### HIV-1 Primary Drug Resistance Substitutions (based on IAS-USA)38

#### Resistance Analysis Population

- Resistance testing was performed in participants with HIV-1 RNA ≥200 copies/mL at confirmed virologic failure, Week 48, or last visit on study drugs
- Plasma HIV-1 RNA genotype and phenotype (PhenoSense® GT, Genosure® MG, and PhenoSense®, Monogram)

#### Efficacy Analysis

- Analysis included participants who switched to B/F/TAF during the study and did not exit on-treatment HIV-1 RNA measurement
- Virologic outcomes based on last available on-treatment HIV-1 RNA, using last observed value carried-forward (LOCF) imputation: <50 (success) or ≥50 (failure) copies/mL
  - All participants with data, including those with early discontinuation, had virologic outcomes determined

- A population size of 182 with 3 failures has a failure rate detection limit of 4.7%

- For comparison, a population size of 4 with 0 failures has a failure rate detection limit of 49%

### Results

#### Table 1. Overview of B/F/TAF Switch Studies in Virologically Suppressed PLWH

#### Table 2. Virologic Outcomes (LOC) of Participants Switched to B/F/TAF

#### Table 3. Frequency of Baseline Resistance-Associated Substitutions: Pooled B/F/TAF Group

#### Table 4. Frequency of Preexisting M184V/I by Study

#### Table 5. Baseline Characteristics by Preexisting M184V/I

#### Conclusions

- M184V/I was frequently detected with other resistance substitutions, but was the only resistance in 19% of participants

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