

Simplifying After a Decade of Suppression: Multidrug-Resistant HIV in the Bixlenvo Era

Case presentation · Monthly SDHIVC Science Update

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October 2026



Doctor,

I was at a recent national HIV conference, USCHA (the U.S. Conference on HIV/AIDS), and I met a rep who said Idvynso® might help me.

A different rep told me that Bixlenvo® might help me.

They both told me to talk to you. **What do you think?**

— *Our patient, age 82*

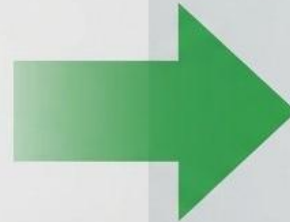
TRANSFORMING HIV CARE: FROM COMPLEXITY TO SIMPLICITY

PAST THERAPY



DAILY BURDEN:
4 PILLS (8 TOTAL DAILY)

CURRENT SIMPLIFIED THERAPY



DAILY EASE:
1 PILL



Forty years of living with HIV

82

years old

1985

year of HIV diagnosis

~10 yrs

virologically suppressed
(<20 copies)

4 drugs

current regimen, all twice
daily

- Diagnosed in 1985; early care in San Francisco, moved to San Diego in 1998
- Under new PCP care since 2022, previously with another community HIV provider
- Current regimen: darunavir (Prezista) + ritonavir (Norvir) + raltegravir (Isentress) + maraviroc (Selzentry)
- 4 pills twice a day (8 pills per day total)

Four decades of antiretroviral exposure

1987



AZT monotherapy

1996



Kaletra (lopinavir/r)

1998 →



Zerit, Sustiva, Fuzeon,
Viramune, Videx, Norvir

Later



Atripla, tenofovir

~2015 →



DRV/r + raltegravir +
maraviroc

Exposure to nearly every NRTI, NNRTI and PI available in the 1990s–2000s, with resistance accumulating along the way. Fuzeon (enfuvirtide) exposure also noted.

Archived genotype: three classes lost

2025 archived (proviral DNA) genotype confirms a 2008 Virco genotype recovered from the patient.



NRTIs

Resistant



NNRTIs

Resistant



Protease inhibitors

Resistant



INSTI (raltegravir)

Active; no INSTI mutations
on 2025 genotype



**CCR5 antagonist
(maraviroc)**

Active

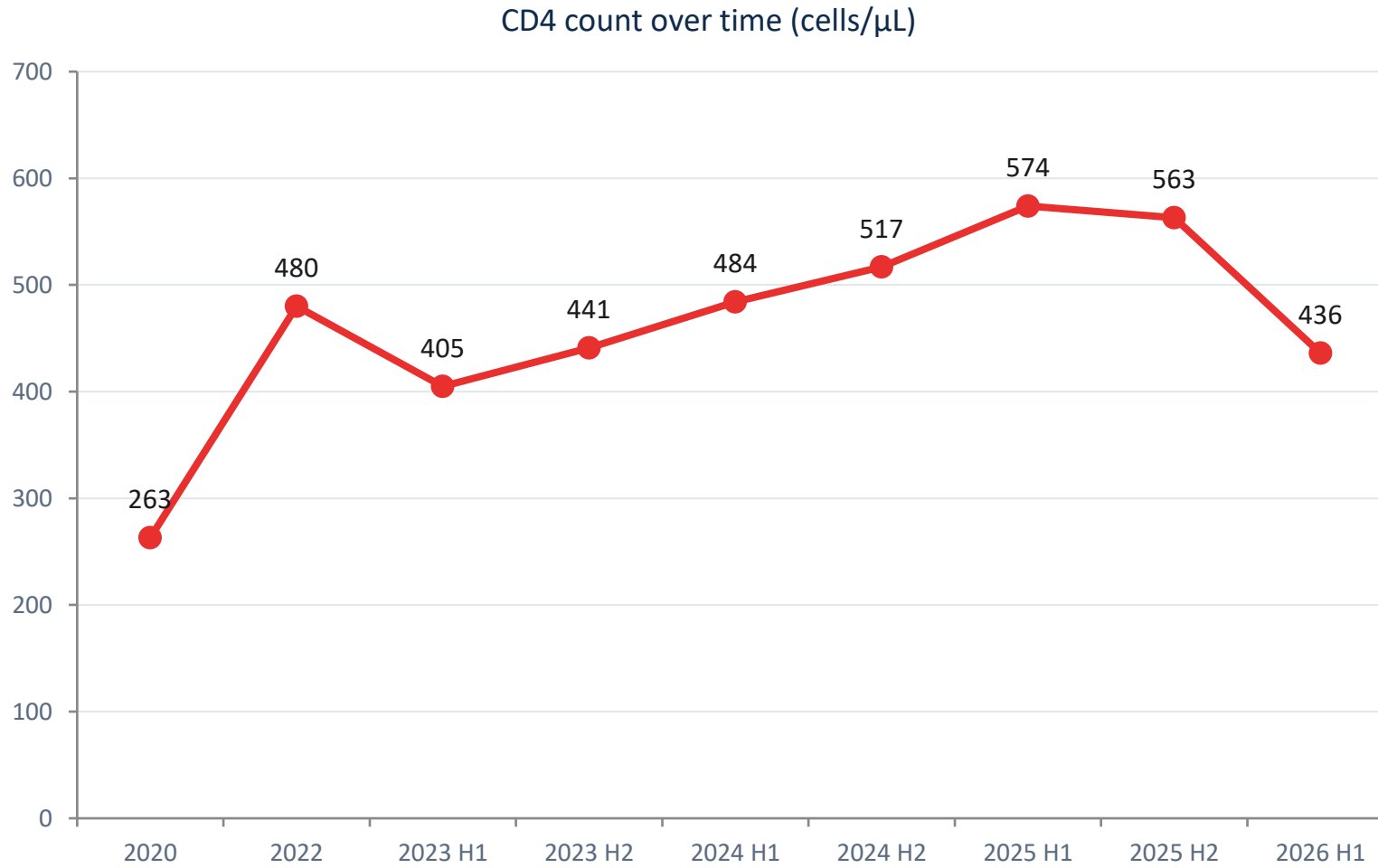


**Capsid inhibitor
(lenacapavir)**

Never exposed

Darunavir/ritonavir likely contributes little or no activity: suppression rests on two agents.

Durable suppression, stable immune recovery



<20

HIV RNA (copies/mL) at every check since 2020

CD4 in the 400s–500s since 2022 (20% in 2022). Most recent: 436, down from 563; worth watching.

Options weighed in 2025, with UCSD PharmD input

1

Lenacapavir SQ q6 months + Biktarvy

UCSD PharmD suggestion. New class plus INSTI; TAF may retain some activity.

2

Dolutegravir BID + fostemsavir

Two classes outside his resistance profile; keeps him on twice-daily dosing.

3

Wait for islatravir + lenacapavir

Newer agents anticipated; defers decision while he remains suppressed.

Aug 2025 decision: recheck labs in 6 months, revisit when the lenacapavir combination is approved.

What changed: Bixlenvo approved August 27, 2026

Bixlenvo

bictegravir 75 mg + lenacapavir 50 mg

- One tablet, once daily (2-day loading regimen first)
- INSTI + first-in-class capsid inhibitor; no injections
- For adults suppressed <50 copies/mL with no known or suspected resistance to either component

ARTISTRY-1 matches this patient

Switch study in people suppressed on complex, multi-pill regimens

96%

suppressed at week 48 on
Bixlenvo

94%

suppressed on baseline
regimen

557 participants randomized 2:1 to switch or stay. Long treatment histories and older adults were represented.

Why Bixlenvo: three FDA criteria, and how he fits

FDA criterion	What it means	What it is not	Our patient
1 Already undetectable	Suppressed on a stable regimen, HIV-1 RNA <50 copies/mL	Not for people starting HIV treatment for the first time	✓ <20 since 2020
2 Simplifies a complex regimen	Replaces multi-pill regimens kept because of past resistance or intolerance; one tablet, once daily	No efficacy gain shown for people doing well on Biktarvy	✓ 8 pills/day, BID, ritonavir
3 Both ingredients fully active	No known or suspected resistance to bictegravir or lenacapavir; NRTI, NNRTI or PI resistance is allowed	Not for bictegravir- or lenacapavir-resistant virus	✓ Integrase clean; never had LEN

Bottom line: resistance to 2 or 3 older classes does not rule Bixlenvo out; resistance to bictegravir or lenacapavir does.

Bixlenvo US Prescribing Information (DailyMed); Gilead press release, FDA approval Aug 27, 2026; Epocrates; Meissner EG et al. Lancet HIV 2026 (ARTISTRY-2).

ARTISTRY-1 enrolled people like him

60

median age (range 22–84)

28 yrs

median time on HIV treatment

75%

on a ritonavir- or cobicistat-boosted PI

39%

dosing antiretrovirals twice daily

Archived resistance at baseline, Phase 3

Historical + proviral DNA genotypes, 542 of 557 participants

84%

NRTI resistance

70%

NNRTI resistance

51%

PI resistance

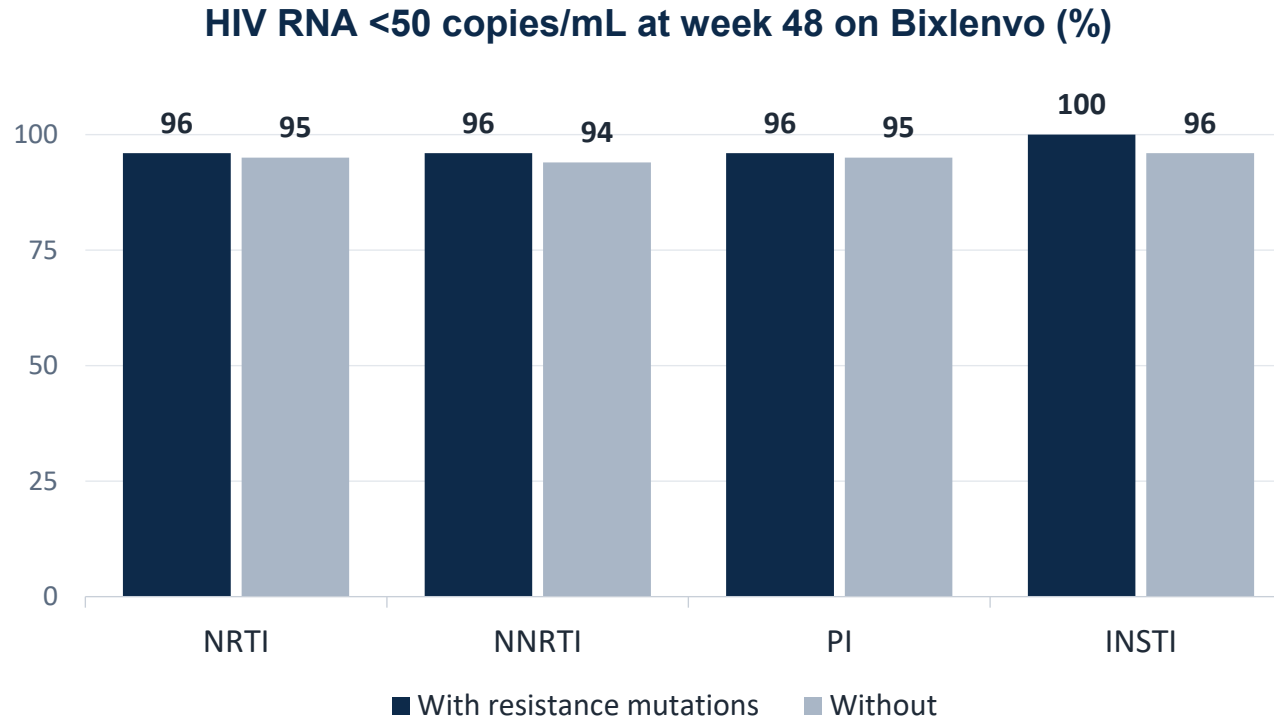
His profile: all three classes resistant, integrase clean, never on lenacapavir

ARTISTRY-2: a different population

- Switched from Biktarvy, not from a complex regimen
- Excluded INSTI or TAF resistance; median age 49
- 93% vs 91% suppressed at week 48: confirms Bixlenvo works, but not in his resistance profile

Orkin C et al. Lancet 2026;407:1249-58 (ARTISTRY-1); Margot N et al. AIDS 2026 poster THPEB101; Meissner EG et al. Lancet HIV 2026 (ARTISTRY-2).

Archived resistance did not change the outcome



No significant difference with vs without mutations in any class (all $P > 0.05$). INSTI-mutation group was small ($n = 15$).

96% vs 94%

suppressed at week 48: Bixlenvo vs staying on the complex regimen (noninferior)

0

participants with treatment-emergent resistance to bictegrovir or lenacapavir

~4%

were on a PI + INSTI + entry inhibitor regimen like his (e.g., DRV/r + DTG + MVC)

How many exactly like him? Not yet published. Outcomes are reported class by class, not for the triple-class subgroup.

Gilead Medical Information, Bixlenvo Clinical Study Overview (Aug 27, 2026), citing Margot N et al. AIDS 2026 THPEB101; Orkin C et al. CROI 2026 #181.

Supporting evidence beyond the Phase 3 result

1 ARTISTRY-1 Phase 2, week 96

96%

(45/47) still suppressed

- Baseline mutations: NRTI 81%, NNRTI 65%, PI 46%
- Both blips resuppressed with no regimen change

2 CAPELLA: lenacapavir, MDR HIV

82%

<50 copies/mL at week 104 (M=E)

- 72 people; 46% resistant to all four classes
- Capsid resistance arose only when the partner drugs were inactive



Trial participant: a caution

305

copies/mL at week 48

- Not our patient: Phase 2 participant on DRV/r BID + DTG BID + MVC with 3-class resistance
- Viral load already 90 at switch; no BIC or LEN resistance; resuppressed

Takeaway: the evidence supports switching when the patient is fully suppressed and bictegravir is fully active. He has been <20 since 2020, and his 2025 proviral integrase genotype is clean.

Hedgcock M et al. CROI 2026 #518; Pennetzdorfer N et al. AIDS 2026;40:1140-5; Ogbuagu O et al. IDWeek 2023 #1596 (CAPELLA W104); Margot N et al. J Infect Dis 2025;231:1239.

How many patients just like him have been studied?

No study has published an exact count. No trial reports how many patients with 3-class resistance (NRTI, NNRTI, PI) were switched from DRV/r + raltegravir + maraviroc to bictegravir/lenacapavir.

Pieced together trial by trial with AI assistance (Claude, Anthropic); figures checked against the sources below.

1 ARTISTRY-2

≈0 patients like him

- Everyone switched from Biktarvy; no INSTI or TAF resistance allowed
- Shows Bixlenvo is safe and effective, but not that it works for someone with his resistance

2 ARTISTRY-1 Phase 2 (n = 128)

≥1 documented, nearly identical to our case

- One trial participant (not our patient): 3-class resistance, on DRV/r BID + DTG BID + MVC
- Viral load 90 at switch, 305 at week 48; no BIC or LEN resistance; resuppressed
- Others reported by class only: NRTI 81%, NNRTI 65%, PI 46%; no effect on week 48 efficacy

Meissner EG et al. Lancet HIV 2026 (ARTISTRY-2); Pennetzdorfer N et al. AIDS 2026;40:1140-5, natap.org/2026/HIV/baseline_and_week_48_resistance_analysis_in.12.pdf

ARTISTRY-1 Phase 3: likely dozens of patients like him

The question: of 557 participants, how many had resistance to all three older classes (NRTI + NNRTI + PI), like our patient?

1 What the trial published

84% **70%** **51%**

NRTI NNRTI PI

of about 540 genotyped participants had resistance to each class. It did not report how many had all three.



2 What the math tells us

27–275 of ~540 tested

had resistance to all three classes, like him: at least 5%, no more than 51% (the share with PI resistance).



3 Closest to his regimen

~15 of 371 switched

switched to Bixlenvo from a PI + INSTI + entry-inhibitor regimen like his (e.g., DRV/r + DTG + MVC); about 22 of all 557 were on one.

Why it matters: Bixlenvo was tested in dozens of people with his resistance pattern, not a handful; 96% with resistance in each class stayed suppressed.

Exact count not published; request it from Gilead Medical Information, 1-866-633-4474. No real-world Bixlenvo data yet.

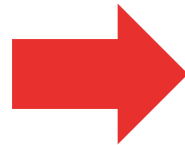
Gilead Medical Information, Bixlenvo Clinical Study Overview (Aug 27, 2026); Margot N et al. AIDS 2026 THPEB101; Orkin C et al. CROI 2026 #181.

Recommendation: switch to Bixlenvo once daily

TODAY

4 drugs · ritonavir boost · all BID

DRV + RTV + RAL + MVC



PROPOSED

1 tablet · once daily · no booster

Bixlenvo (bictegravir/lenacapavir)

Why

- Relies on no RTI or PI: the classes with archived pan-resistance
- INSTI and capsid classes not implicated in his resistance profile; lenacapavir has no cross-resistance to other classes
- Removes ritonavir boosting (fewer drug interactions) and twice-daily dosing

Caveats and monitoring plan



INSTI activity: supported, one limit

The 2025 archived genotype shows no integrase mutations, and he stayed suppressed on raltegravir. Proviral DNA testing can miss minor variants, so viral load follow-up still matters.



Optional safety net

If concerned, keep boosted darunavir alongside Bixlenvo as a bridge, then drop the PI once suppression is reconfirmed. Review interactions with PharmD first.

HIV RNA after switch



Week 4



Week 8



Week 12



Then routine

Fragile baseline: only two truly active agents have held suppression for a decade. Close follow-up for 6–12 months, as already planned in the chart.

If Bixlenvo is deferred or contraindicated



Reasonable

Dolutegravir BID + fostemsavir

- Attachment inhibitor adds a distinct mechanism and potency margin
- No reliance on RTIs or PIs
- Trade-off: remains a twice-daily regimen (4 pills per day)



Excluded

Idvynso (doravirine/islatravir)

- Approved April 2026 as a once-daily switch option
- Label requires no known doravirine resistance and no prior virologic failure
- His archived genotype shows pan-NNRTI resistance

Three takeaways: multiclass resistance is not a dead end

1 Common in survivors

1 in 7

of tested adults 60+ have archived NRTI + NNRTI resistance (14.1%); triple-class 3.9%

Long-term survivors often carry old resistance hidden in proviral DNA. We reviewed his cumulative genotype history: see slides 30–36.

2 There is hope

96%

stayed suppressed on one pill in ARTISTRY-1, with or without NRTI, NNRTI, or PI resistance

Resistance to the older classes no longer means a lifetime of complex, twice-daily regimens.

3 Switch carefully

4 · 8 · 12

weeks: viral load checks after the switch

Confirm full suppression and an intact integrase genotype first; one pill only works if both drugs are active.

For patients: if you take a complex regimen because of old resistance, ask your provider whether a simpler regimen could work for you.

Card 1: HIV-1 Drug Resistance Trends 2018-2024, Open Forum Infect Dis 2025;12(8):ofaf446 (proviral DNA, ages 60-90). Card 2: Margot N et al. AIDS 2026 THPEB101.

Questions for the group

- Clean switch, or keep boosted darunavir as a bridge?
- Is a clean proviral integrase genotype enough reassurance to switch?
- How should the recent CD4 dip factor into timing?
- Patients: what matters most to you in simplifying a regimen that works?



Thank You

This is a community consortium, and it is only possible because we come together as a community.

Thank you so much for joining us today and for participating so actively. We are proud to serve the San Diego HIV community!

With hopes and prayers for the end of the epidemic!



Addendum: Detailed History

Care and treatment history · Laboratory history · Chart notes · Plan · Decision-support review · Genotype report · Medication list



Care and treatment history

1 Care history

- Diagnosed with HIV in 1985
- Early care in San Francisco
- Moved to San Diego in 1998
- Followed by a prior PCP until 2022, then by current PCP

2 Antiretroviral history

1987: AZT monotherapy

1996: Kaletra

1998 on, San Diego: Zerit, Sustiva, Fuzeon, Viramune, Atripla, tenofovir, Videx, Norvir

By 2020: Prezista + Norvir + Isentress + Selzentry

3 Resistance testing

2007: Trofile assay, R5 homozygous

2008: Virco PhenoSense

2025: Archived genotype (sent July 2025), confirming the 2008 Virco results

Laboratory history

Date	HIV RNA (copies/mL)	CD4 (cells/ μ L)
Feb 2020	Not detected	263
Sep 2022	<20	480 (20%)
May 2023	—	405
Dec 2023	—	441
Jun 2024	—	484
Dec 2024	<20	517
Jun 2025	<20	574
Dec 2025	<20	563
Jun 2026	<20	436

— HIV RNA not listed in the chart summary for these dates

<20

HIV RNA (copies/mL) at every reported check since 2020

Regimen throughout

Prezista + Norvir + Isentress + Selzentry

Most recent CD4 (Jun 2026): 436, down from 563

Chart note, July 2025: options considered

1 Options discussed

- Lenacapavir + bictegravir, based on ARTISTRY trial data
- Dolutegravir + darunavir/ritonavir
- Dolutegravir + doravirine
- Dovato + doravirine
- Doravirine/islatravir single tablet, after anticipated islatravir approval in 2026
- Bictegravir + darunavir

2 Clinical reasoning

- Hesitant with dolutegravir/doravirine given his extensive treatment history
- Bictegravir/doravirine safer: TAF may retain activity; doravirine activity hard to predict, but likely some
- Darunavir BID was once automatic with any PI resistance, later only if darunavir resistance suspected; he may not need BID, or keep BID if concerned
- If switching: watch closely, with more frequent viral loads for 6–12 months

Chart notes, August 2025: archived genotype

Archived genotype (sent July 2025) confirms the 2008 Virco genotype received from the patient: **resistant to all RTIs and PIs**. Only two active drugs in the current regimen, yet fully suppressed for almost 10 years on maraviroc and raltegravir.

1

Lenacapavir SQ q6 months + Biktarvy

UCSD PharmD suggestion

2

Tivicay BID + fostemsavir

Two classes outside his resistance profile

3

Wait for islatravir (2026) + lenacapavir or other

Defers the decision while he remains suppressed

Plan: discuss with PharmD again; recheck HIV labs in 6 months; consider change when lenacapavir combination is approved.

Plan, October 2026

Bixlenvo FDA approved August 27, 2026, and now available in pharmacies

1

Change to Bixlenvo

One pill per day; no interactions with current medicines

2

Reviewed prescribing with patient

Two-day loading dose; OK with or without food; tell other medical providers he is taking Bixlenvo so they can check for drug interactions

3

Stop current antiretrovirals

Ritonavir, darunavir, maraviroc, and raltegravir

4

Follow-up labs

HIV RNA in one month

Decision-support review: assessment

AI-assisted review (OpenEvidence / NEJM), as recorded in the chart

Assessment

Multidrug-resistant HIV: archived 2008 Virco genotype shows resistance to all NRTIs, NNRTIs, and PIs

Suppressed (<20) for ~10 years on Prezista/ritonavir + Isentress + Selzentry

Darunavir/ritonavir likely adds minimal to no activity; raltegravir and maraviroc are the two truly active agents

CD4 stable in the 400s–500s

Recommendation: Bixlenvo once daily

bictegravir 75 mg / lenacapavir 50 mg, one tablet

- Turns the July 2025 option (Biktarvy + SQ lenacapavir) into one oral tablet, no injections
- ARTISTRY-1 enrolled patients like him: long treatment histories, complex regimens, older age
- Avoids the RTI and PI classes with archived pan-resistance; bictegravir and lenacapavir classes are outside his resistance profile
- Removes ritonavir boosting and BID dosing: 4 drugs to 1 pill daily

Decision-support review: caveats and alternatives



Caveats and monitoring

- The 2025 archived genotype shows no INSTI resistance mutations, and he stayed suppressed on raltegravir; proviral DNA can miss minor variants, so close viral load follow-up still matters
- Fragile baseline: HIV RNA at 4, 8, and 12 weeks after switch, then routine
- If concerned: keep boosted darunavir alongside Bixlenvo as a bridge, then drop the PI once suppression is reconfirmed



Reasonable: DTG BID + fostemsavir

Distinct attachment-inhibitor mechanism adds potency margin without RTI/PI reliance; keeps him on BID dosing



Excluded: Idvynso (DOR/ISL)

Archived pan-NNRTI resistance; label requires no known doravirine resistance substitutions

Genotype report: NRTI, NNRTI, and INSTI

Date Collected		Date Received	Date Reported	Mode	Report Status
JUL-2025		JUL-2025	AUG-2025	F,M	FINAL
Referring Physician				Reference Lab ID/Order #	
Joseph Caperna				[redacted]	
Comments				HIV-1 Subtype: B	
	Generic Name	Brand Name	Assessment	Drug Resistance Associated Mutations Detected	
NRTI	Abacavir	Ziagen	Resistant	M41M/L, D67H/N, K70K/R, L74L/I, V75V/I, M184M/V, T215F/Y	
	Didanosine	Videx	Resistant	M41M/L, D67H/N, T69T/A/G/S, L74L/I, V75V/I, M184M/V, T215F/Y	
	Emtricitabine	Emtriva	Resistant	M41M/L, D67H/N, K70K/R, V75V/I, M184M/V, T215F/Y, K219E/Q	
	Lamivudine	Epivir	Resistant	M41M/L, D67H/N, K70K/R, V75V/I, M184M/V, T215F/Y, K219E/Q	
	Stavudine	Zerit	Resistant	M41M/L, D67H/N, K70K/R, V75V/I, T215F/Y, K219E/Q	
	Tenofovir	Viread	Resistant	M41M/L, D67H/N, T69T/A/G/S, K70K/R, T215F/Y	
	Zidovudine	Retrovir	Resistant	M41M/L, D67H/N, T69T/A/G/S, K70K/R, V75V/I, T215F/Y, K219E/Q	
NNRTI	Doravirine	Pifeltro	Resistant	A98A/G, K103K/R, V108V/I, Y181Y/C, G190G/A, V245E/K	
	Efavirenz	Sustiva	Resistant	A98A/G, K101K/Q, K103K/R, V108V/I, Y181Y/C, G190G/A	
	Etravirine	Intelence	Resistant	A98A/G, Y181Y/C	
	Nevirapine	Viramune	Resistant	A98A/G, K101K/Q, K103K/R, V108V/I, Y181Y/C, G190G/A	
	Rilpivirine	Edurant	Resistant	K103K/R, Y181Y/C	
INI	Bictegravir	Bictegravir	Sensitive	None	
	Cabotegravir	Cabotegravir	Sensitive	None	
	Dolutegravir	Tivicay	Sensitive	None	
	Elvitegravir	Vitekta	Sensitive	None	
	Raltegravir	Isentress	Sensitive	None	

7

NRTI: all resistant

Abacavir through zidovudine

5

NNRTI: all resistant

Doravirine through rilpivirine

5

INSTI: all sensitive

No integrase resistance mutations

Genotype report: protease inhibitors

	Generic Name	Brand Name	Assessment	Drug Resistance Associated Mutations Detected	Comments
PI	Atazanavir	Reyataz / r [®]	Resistant	L10L/I, V32V/I, L33L/F, M46M/I, I54I/L, I62I/V, A71A/V, G73G/A/S/T, I84I/V, L90L/M	
	Darunavir	Prezista / r [®]	Resistant	L10L/I, V32V/I, L33L/F, M46M/I, I47I/V, I54I/L, G73G/A/S/T, I84I/V, L90L/M	
	Fosamprenavir	Lexiva / r [®]	Resistant	L10L/I, V32V/I, L33L/F, M46M/I, I47I/V, I54I/L, G73G/A/S/T, I84I/V, L90L/M	
	Indinavir	Crixivan / r [®]	Resistant	L10L/I, V32V/I, M46M/I, I47I/V, A71A/V, G73G/A/S/T, I84I/V, L90L/M	
	Lopinavir	Kaletra [®]	Resistant	L10L/I, V32V/I, L33L/F, M46M/I, I47I/V, I54I/L, A71A/V, G73G/A/S/T, I84I/V, L90L/M	
	Nelfinavir	Viracept	Resistant	L10L/I, V32V/I, M46M/I, I54I/L, A71A/V, G73G/A/S/T, I84I/V, L90L/M	
	Ritonavir	Norvir	Resistant	L10L/I, V32V/I, L33L/F, I47I/V, I54I/L, A71A/V, G73G/A/S/T, I84I/V, L90L/M	
	Saquinavir	Invirase / r [®]	Resistant	L10L/I, I54I/L, I62I/V, A71A/V, G73G/A/S/T, I84I/V, L90L/M	
	Tipranavir	Aptivus / r [®]	Resistant	I13I/V, V32V/I, L33L/F, I47I/V, A71A/V, I84I/V, L90L/M	3

* Assessment of drug susceptibility is based upon detected mutations and interpreted using an advanced proprietary algorithm (version 19).
 * Interpretation algorithms for ritonavir-boosted protease inhibitors appropriate for the following dosages: AMP/r 600mg/100mg BID; ATV/r 300mg/100mg QD; IDV/r 800mg/200mg BID; LPV/r 400mg/100mg BID; SQV/r 1000mg/100mg BID; TPV/r 500mg/200mg BID; and DRV/r 600mg/100mg BID.
 * Mixtures are indicated by amino acids separated by a slash. Deletions in the amino acid sequence are indicated by a ^ symbol.

Summary of Mutations Observed

RT K20K/R, K22K/R, M41M/L, D67H/N, T69T/A/G/S, K70K/R, L74L/I, V75V/I, A98A/G, K101K/Q, Q102K, K103K/R, K104K/N/R/S, V108V/I, K122K/E, C162S, Q174Q/R, Y181Y/C, M184M/V, G190G/A, D192D/N, G196E, T215F/Y, D218D/E, K219E/Q, P243P/S, V245E/K, R277K, V293V/I, M357T, K358R, A360A/V, T386T/I, A400T

IN S17S/N, V31V/I, V72V/I, L101L/I, T112V, V113I/L, T122I, T124N, A128A/T, K156N, V201V/I, T218S, V234L, D256D/E, D288D/N

PR Q2Q/R, L10L/I, I13I/V, V32V/I, L33L/F, M46M/I, I47I/V, I54I/L, K55K/R, I62I/V, L63L/P, I66I/F, A71A/V, G73G/A/S/T, V77V/I, P79P/S, I84I/V, L90L/M

Genotype Comments (clinical significance may vary)

1 Assessment for this drug was derived considering the sensitizing effect of mutation M184V.

2 Assessment for this drug was derived considering the sensitizing effect of mutations Y181C and M184V.

3 Assessment for this drug was derived considering the sensitizing effect of mutation I54L.

9

PI: all resistant

Including darunavir and tipranavir

Σ

Summary of mutations

Full RT, IN, and PR lists at bottom

3

Genotype comments

Sensitizing effects of M184V, Y181C, I54L

Genotype big picture: resistance by drug class



Reading the notation: a mutation like M184M/V means the lab found a mixture of the normal virus (M) and the mutant (V). Integrase showed no resistance mutations, only polymorphisms. Tiers on the next slides follow IAS-USA and Stanford HIVdb references.

Tier 1: major mutations in reverse transcriptase

Major resistance mutations drive the “Resistant” calls

1

NRTI

M184M/V: high-level resistance to lamivudine and emtricitabine; increases sensitivity to tenofovir and zidovudine (genotype comment #1)

TAMs: M41M/L, D67H/N, K70K/R, T215F/Y, K219E/Q: broad NRTI cross-resistance; T215F/Y and K219E/Q show no wild-type (fully established)

L74L/I: abacavir and didanosine

T69T/A/G/S: contributes to NRTI resistance

1

NNRTI

Y181Y/C: major mutation affecting all NNRTIs, including etravirine and rilpivirine

G190G/A: major for nevirapine and efavirenz

Tier 1: major mutations in protease

Major resistance mutations drive the “Resistant” calls

1

Protease inhibitors

I84I/V: major mutation affecting nearly all PIs

I47I/V, I54I/L, V32V/I: major darunavir-associated mutations

M46M/I: major for several PIs

L90L/M: major for saquinavir and nelfinavir

Tier 2: accessory mutations

Accessory mutations add to resistance alongside the major mutations

2

NRTI

V75V/I

D218D/E

A360A/V

2

NNRTI

A98A/G

K101K/Q

K103K/R

V108V/I

V245E/K

2

PI

L10L/I

I13I/V (tipranavir)

L33L/F

I62I/V

A71A/V

G73G/A/S/T

L63L/P

K55K/R

Tier 3: polymorphisms

Polymorphisms / minimal clinical significance

3

Reverse transcriptase

K20K/R, K22K/R, Q102K,
K104K/N/R/S, K122K/E, C162S,
Q174Q/R, D192D/N, G196E, P243P/S,
R277K, V293V/I, M357T, K358R,
T386T/I, A400T

3

Protease

Q2Q/R, I66I/F, V77V/L, P79P/S

3

Integrase

S17S/N, V31V/I, V72V/I, L101L/I,
T112V, V113I/L, T122I, T124N,
A128A/T, K156N, V201V/I, T218S,
V234L, D256D/E, D288D/N

All 15 are polymorphisms: none
affect INSTI drugs

Medication list at time of switch

18 Medications

Atorvastatin	Isentress (raltegravir)	Sildenafil
Creon (pancrelipase)	Lisinopril	Tamsulosin
Darunavir	Maraviroc	Testosterone cypionate
Doxycycline	Montelukast	Valacyclovir
Finasteride	Probiotic	Vitamin C
Flunisolide	Ritonavir	Vitamin D3

3 Supplies

BD Hypodermic Needle
BD Syringe/Needle
BD TB Syringe