



DISTINCT HIV-1 RESISTANCE PROFILES AGAINST BNAB IN INTACT VS DEFECTIVE VIRAL GENOMES

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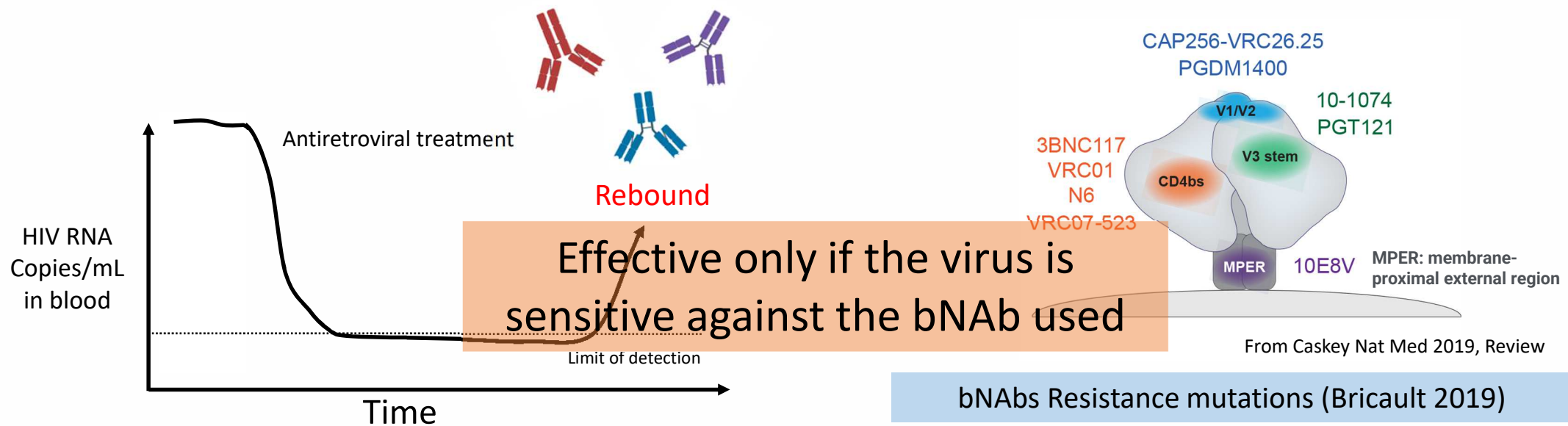
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I have no COI to declare.

Antibodies, Treatment Interruption, and Virologic Rebound

Broadly-neutralizing antibodies (bNAbs) maintain viral suppression and/or delay viral rebound

bNAbs targets HIV Env



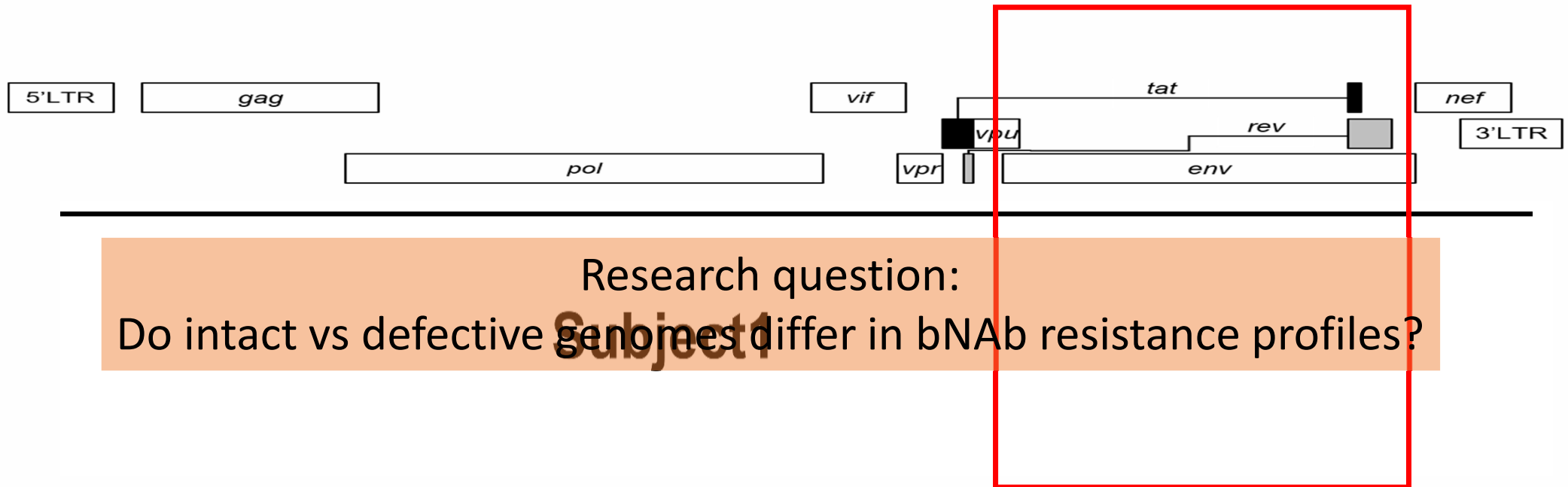
bNAbs Resistance mutations (Bricault 2019)

Mono	Duo	Triple
Caskey Nature 2015, 3BNC117	Mendoza Nature 2018	Julg Nat Med 2022
Bar NEJM 2016, VRC01	Bar-On Nat Med 2018	
Scheid Nature 2016, 3BNC117	Sneller Nature 2022	
Caskey Nat Med 2017, 10-1074	(all 3BNC117 and 10-1074)	

HIV-1 Neutralizing Antibody Signatures and Application to Epitope-Targeted Vaccine Design

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HIV Reservoir: Genome-Intact versus Defective Proviruses



■ Genome-Intact
■ psi deletion
■ Hypermuted

■ Premature Stop
■ Large deletion(s)

Lee GQ JCI 2017

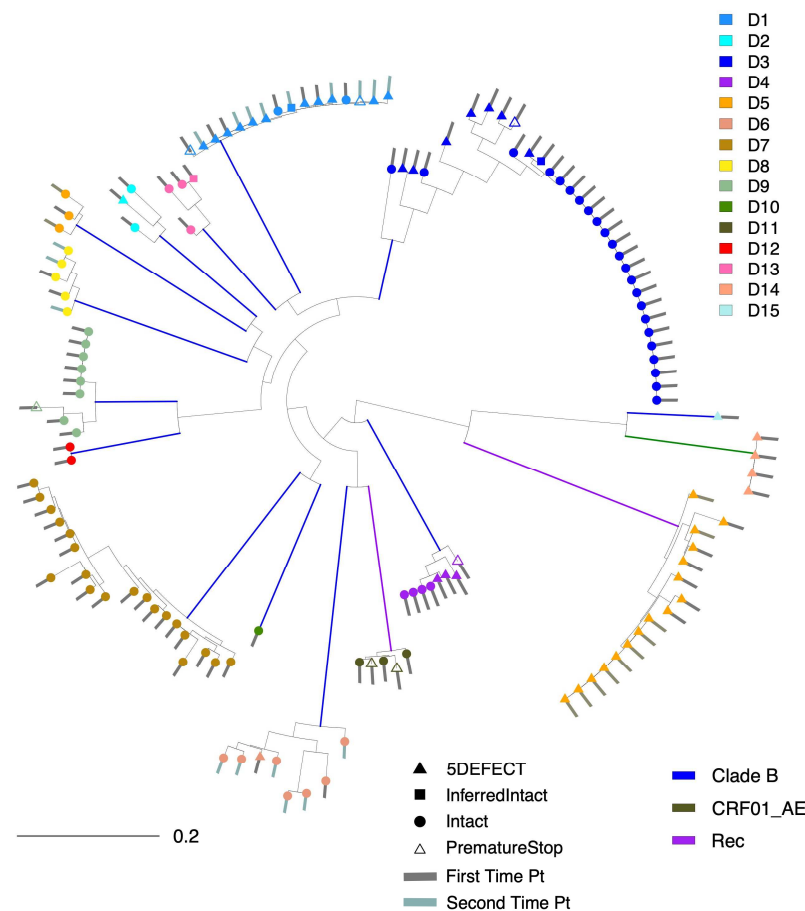
HIV reservoir genetic profiling: 15 donors

All *env* in intact genomes were genetically unique compared to *env* in defective genomes.

784 viral genomes
137 contained *env*
87 intact

Canada, US
All male

All-female HIV DNA genome landscape:
FRESH cohort poster: PP3.4
“HIV-1 clade C reservoir characteristics in early and chronic treated infections.”

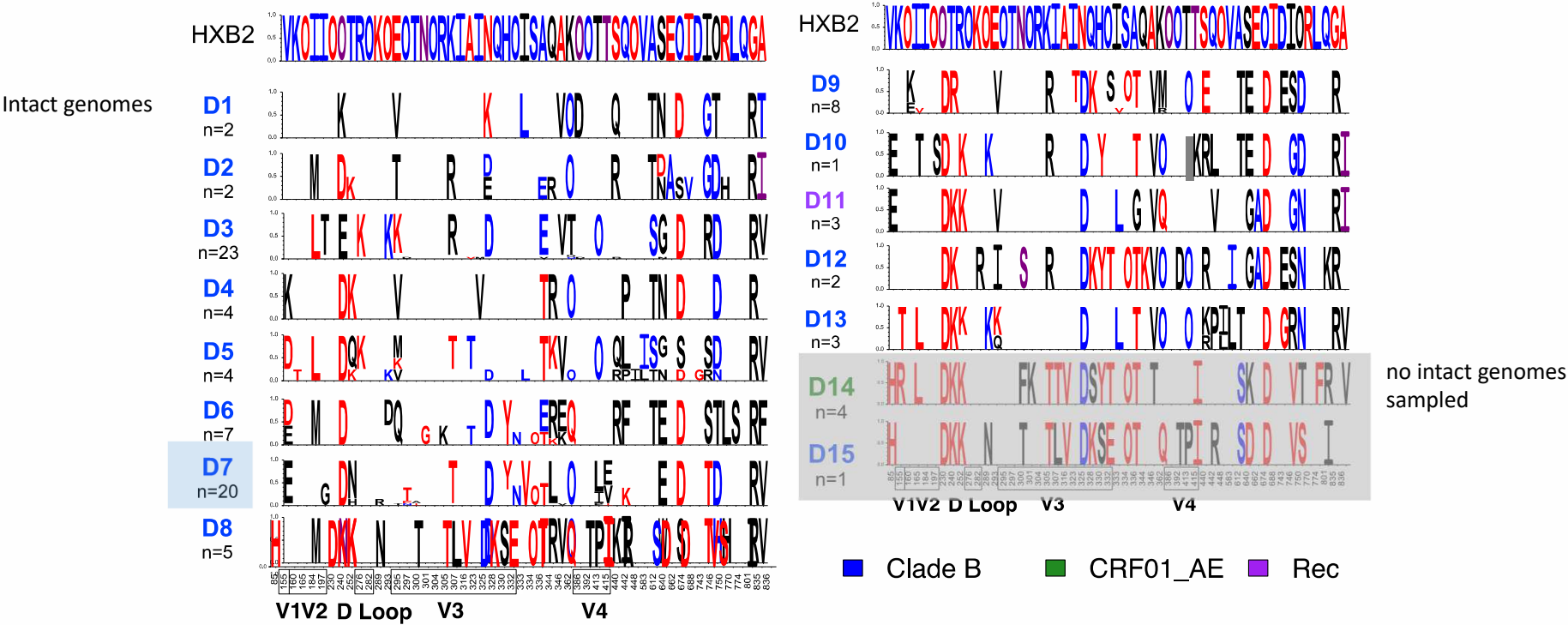


bNAb resistance profiles of genome-intact proviruses, across study donors

All donors have distinct bNAb resistance profiles

resistant

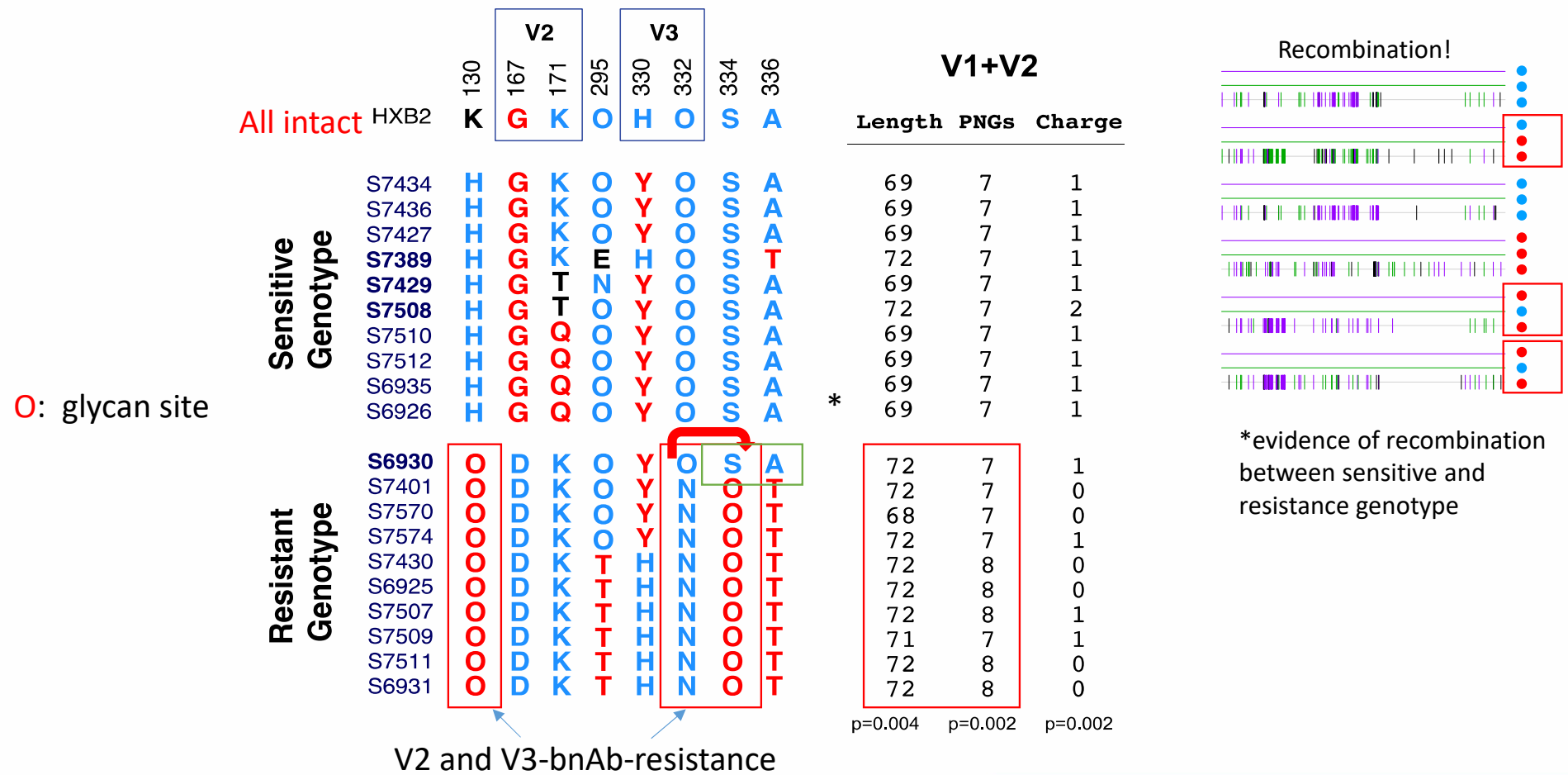
sensitive



V3-bNAb-resistance profile is shown as an example

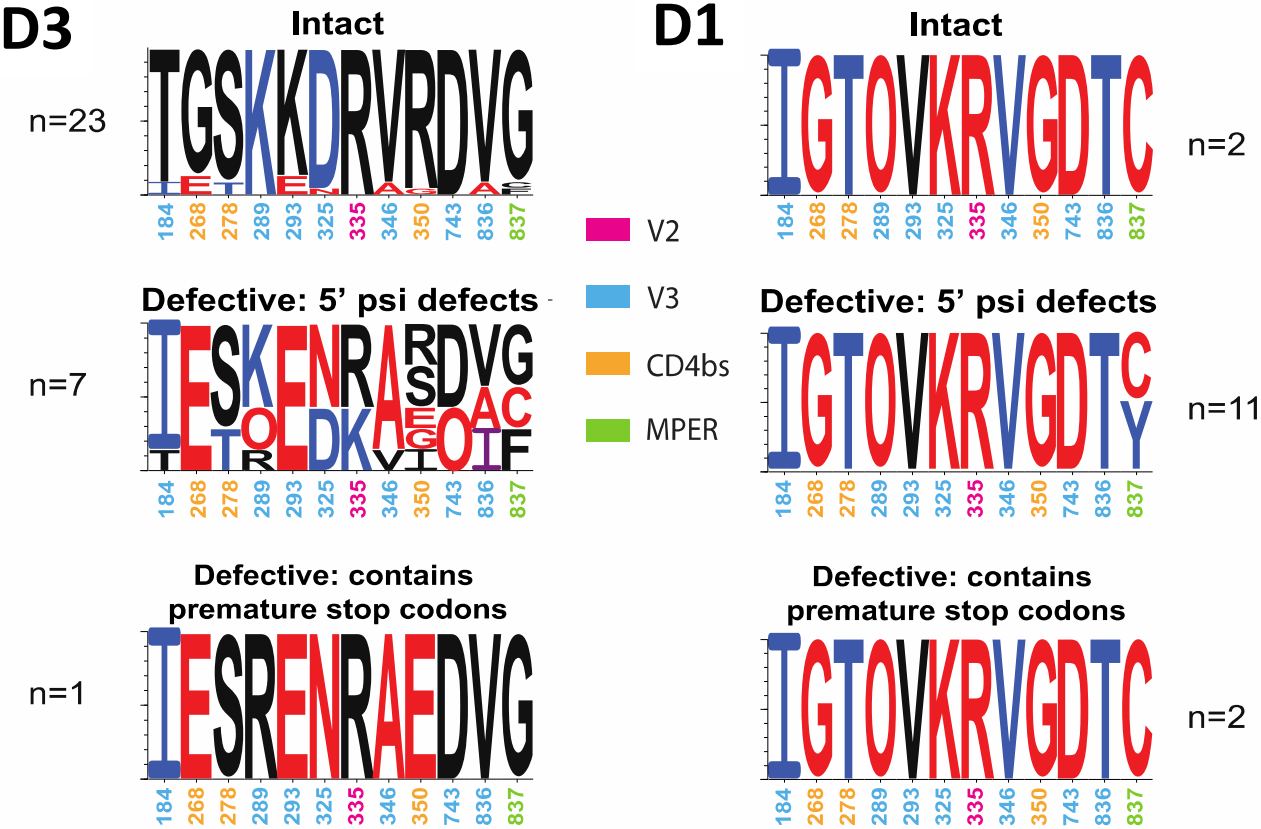
bNAb resistance profiles of genome-intact proviruses, within a study donor (D7)

Even within a single person: there were two bNAb resistance profiles among intact genomes.



Genome-intact versus defective proviruses

Intact-genomes may not share the same resistance profile as defective-genomes.





COMMUNITY SUMMARY

POSTER PP 3.12

- **Research question**

Do intact- versus defective- proviral genomes share bNAb-resistance profiles?

- **Key findings**

1. All study participants had different bNAb-resistance profiles.
2. Intact vs defective genomes did not always share similar profiles.

- **Implications**

Focus should be put on intact genomes when screening individuals for enrollment in bNAbs clinical trials.

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Lee lab



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Genevieve G. Fouda

All study participants



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REACH
For the Cure

Research Enterprise to Advance a Cure for HIV

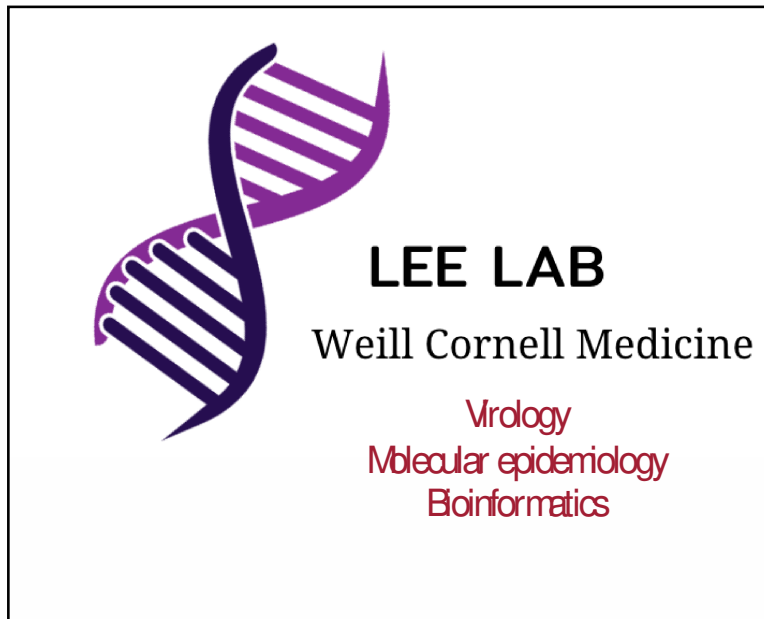


Weill Cornell Medicine

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The Lee lab is hiring at all levels!

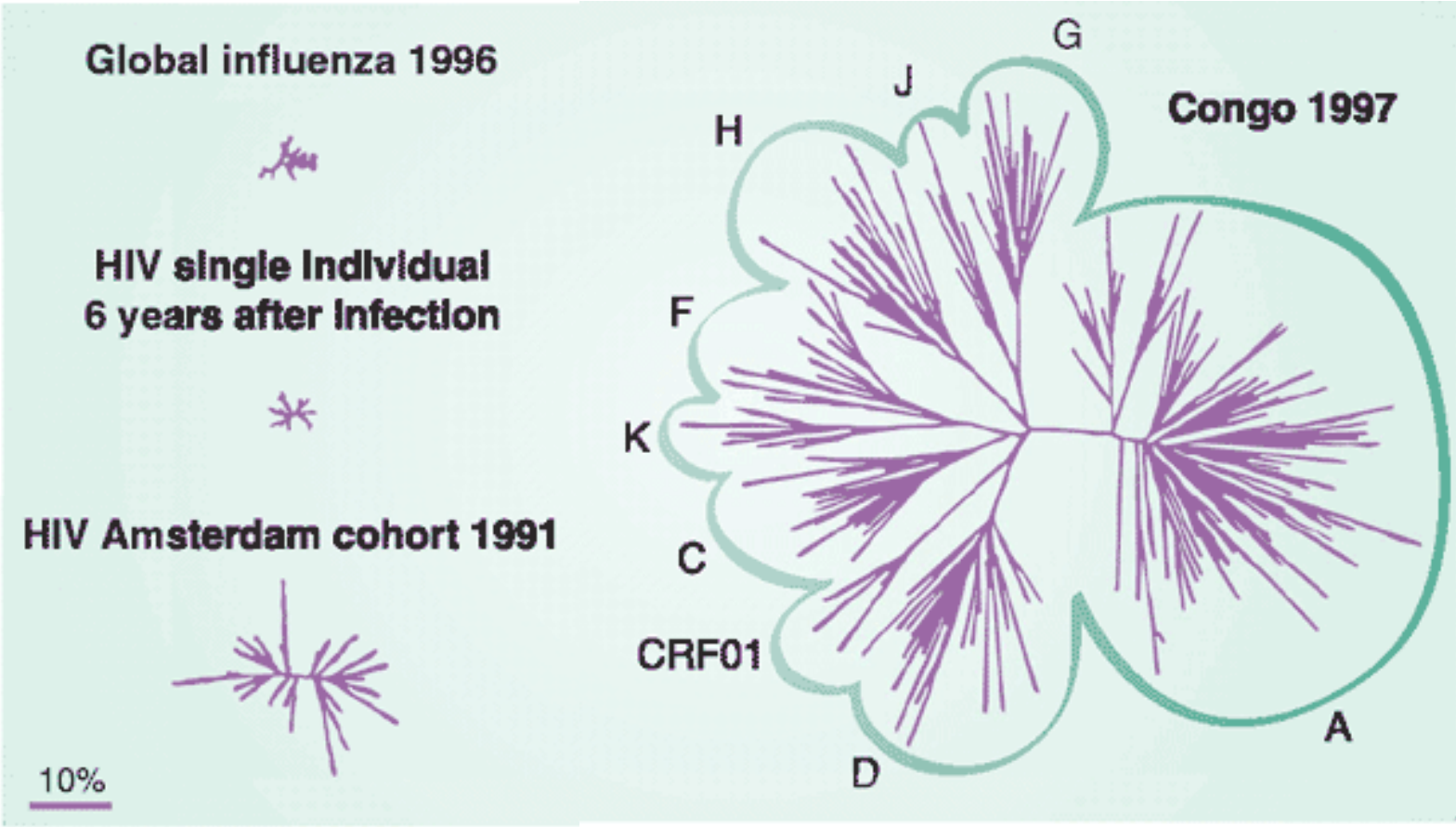
Manhattan, New York



- Research assistant I
BSc
- Postdoctoral fellow
Recent PhD graduate
- Staff scientist
PhD grad with postdoctoral experience

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HIV genetic diversity



Walker & Korber, Nat Immunology 2001; Modified by Brumme