

**Title: Distinct Biomarker Signatures in HIV Acute Infection Associate with
Viral Dynamics and Reservoir Size**

Supplemental Material

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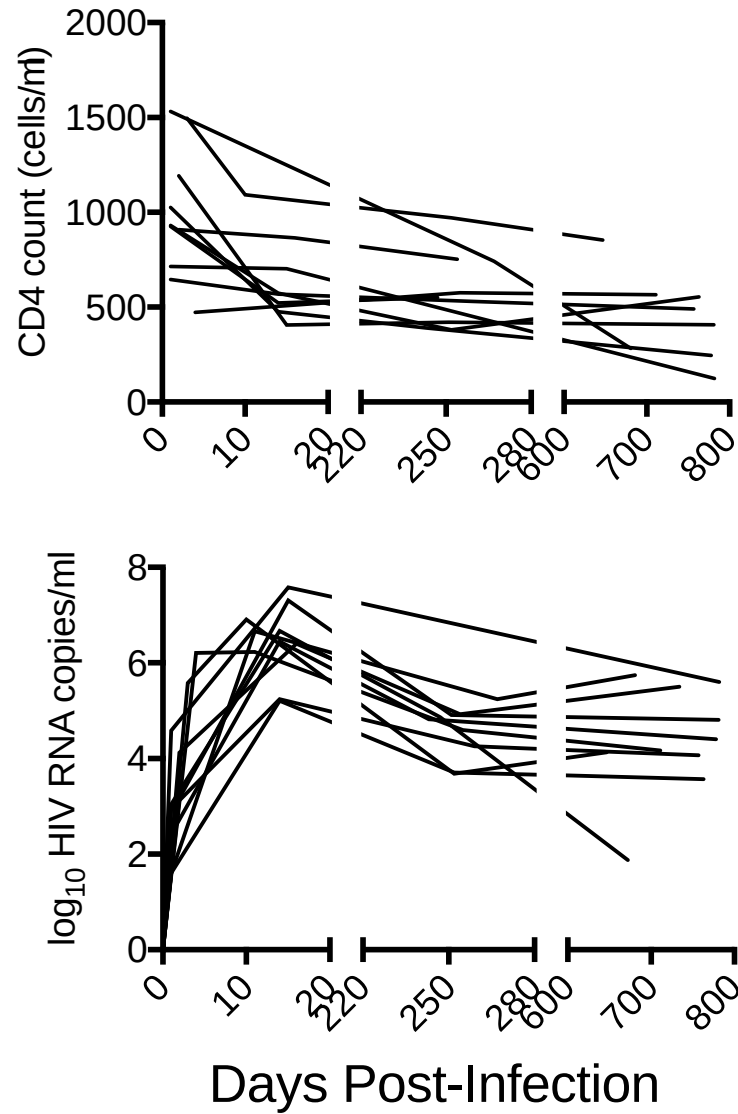
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Figure S1. Clinical parameters of treatment naïve individuals (n=10) assessed for biomarker fluctuations during the course of HIV infection. Longitudinal (A) CD4 counts and (B) HIV viral load were measured from the first RNA positive sample in acute infection to 96 weeks into chronic infection.

	RV217	RV254
N	10	40
Age	23 (18-48)	28.5 (18-46)
Male:Female:TG	7:0:3	35:5:0
Peak (RV217) or Enroll (RV254) LogVL (copies/mL)	6.58 (5.81-7.77)	5.60 (3.04-7.49)
Nadir (RV217) or Enroll (RV254) CD4 Abs (cell/μL)	348 (81-589)	410.5 (132-1127)
Ethnicity	Thai	Thai

Table S1. Characteristics of RV217 and RV254 acute infection cohorts. Median values (range) are provided. TG= transgender, VL= viral load, Abs= Absolute Count

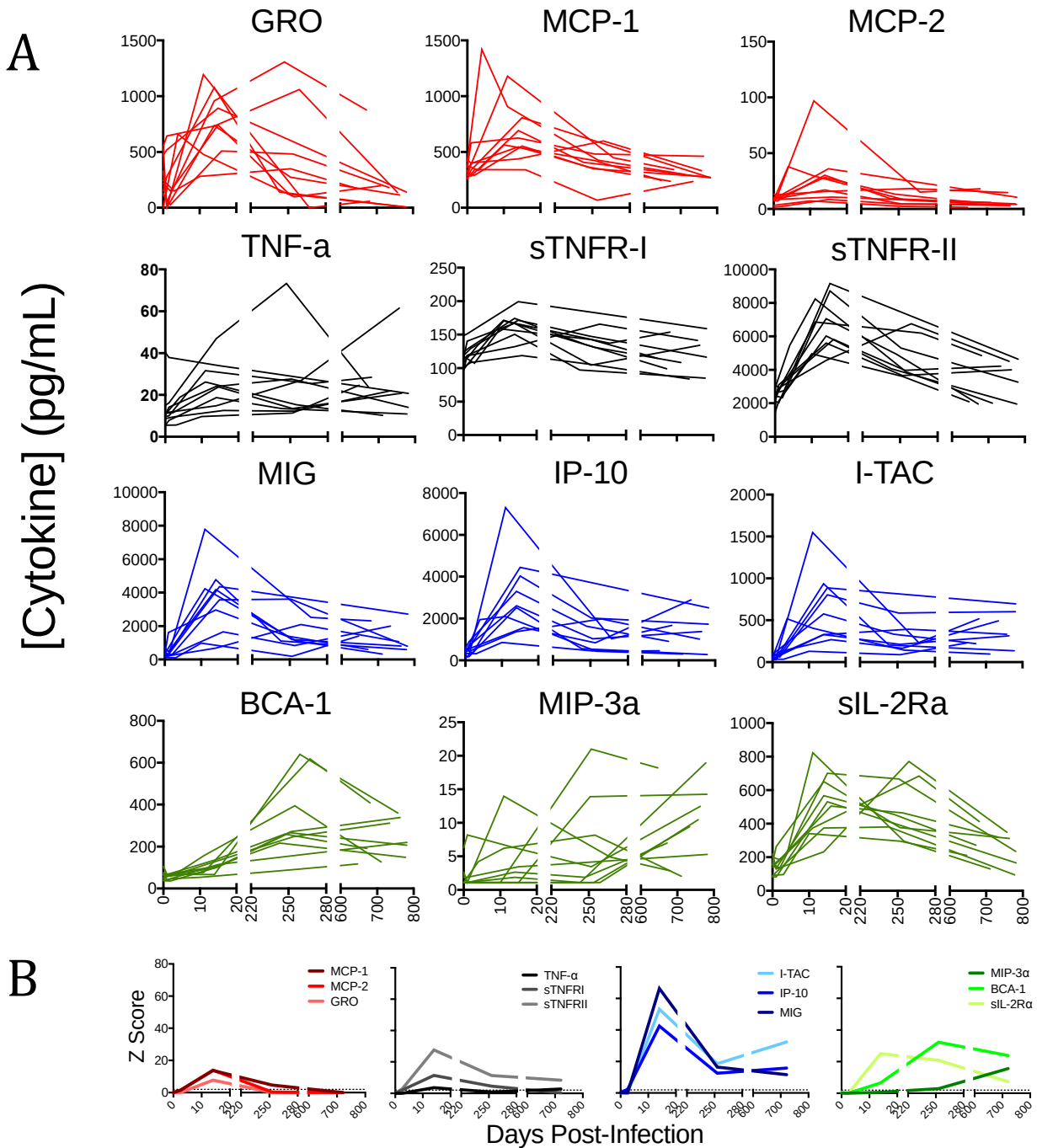


Figure S2. Representative biomarker pathways are induced in temporally distinct patterns following HIV infection. Selected biomarkers were measured in plasma from HIV infected individuals (n=10) at uninfected (“Day 0”), Early Acute (Day 1-4), Peak Acute (Day10-16), Early Chronic (Day 240-267), and Late Chronic (Day 647-782) time points by Luminex assays. (A) Longitudinal levels of individual biomarkers representative of different biological pathways

such as inflammation, TNF- α signaling, IFN- γ signaling, and lymphocyte activation (top to bottom, respectively) per individual. (B) Normalized Z score expression of biomarkers from Figure S2A that display differences in expression kinetics. Dashed line at Z=1.96 included for visual reference to indicate the statistical threshold of significance.

	rho	p-value
IP-10	0.7526	<0.0001
MIP-3 β	0.6881	<0.0001
I-TAC	0.63	<0.0001
sTNFR-II	0.5814	0.0001
IL-10	0.5526	0.0003
MIG	0.5221	0.0007
sIL-6R	0.416	0.0084
TNF α	0.4048	0.0106
MCP-1	0.3947	0.0129
GRO	0.3684	0.021

48 **Table S2.** Statistics of the soluble biomarkers present in acute HIV infection that significantly
49 correlate with contemporaneous viral loads prior to treatment initiation.

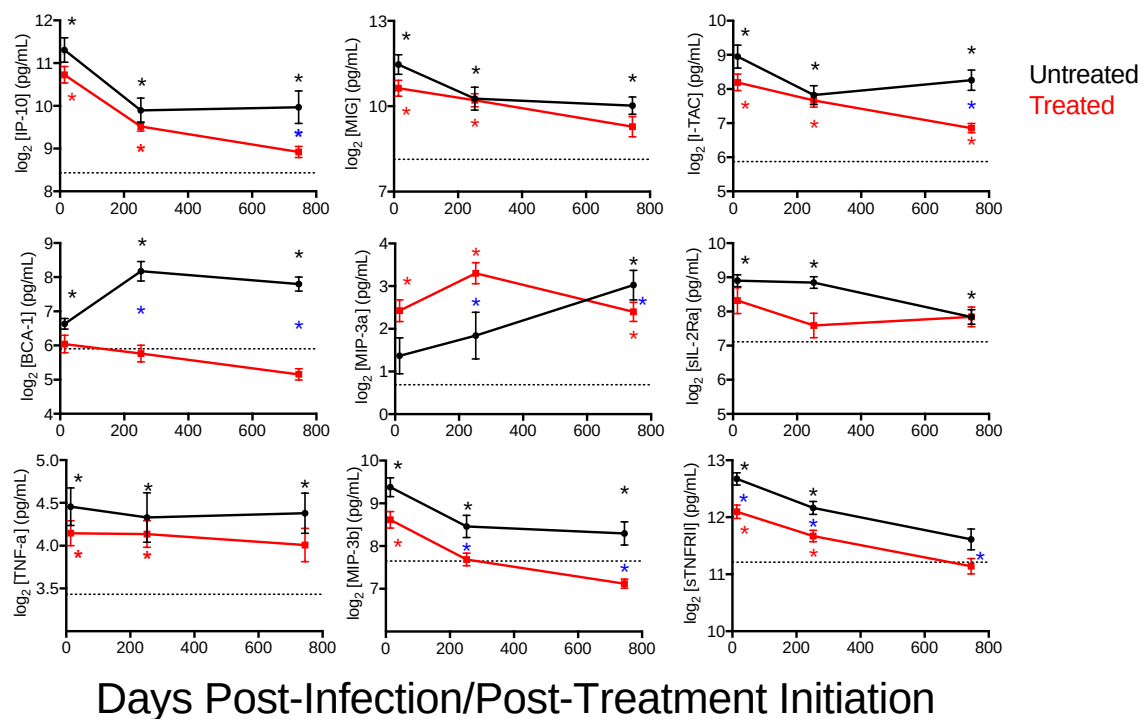


Figure S3. Soluble biomarker dynamics following HIV infection with and without ART initiation. Biomarkers were measured in treatment naïve (n=10, RV217) and in individuals who began ART upon enrollment in acute HIV infection (n=40, RV254). Levels are shown as median with interquartile ranges. Dashed line indicates the median biomarker level in uninfected individuals (n=10). Significant elevation versus uninfected individuals are shown with black asterisks (RV217) or red asterisks (RV254). Differences between treated and untreated individuals are indicated by blue asterisks. Asterisks indicate $p < 0.05$ by Mann-Whitney U tests.

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