Table S4. Biological characterization of viral outgrowth and rebound isolates

Type[1]	Isolate ID[2]	Study number	Replicative capacity (ng p24/ml)[3]	Isolate tropism[4]	IFNα2 IC50 (pg/ml)[5]	IFNβ IC50 (pg/ml)[5]	sCD4 IC50 (ug/ml)[6]	CD4-Ig IC50 (ug/ml)[7]	Infectivity (IU/pg RT)[8]	p24 Particle release (%)[9]
VOA	B199.2.C.BF.1		80		0.04	0.12				
VOA	B106.1.C.3.8[11]	MNU-0628	100		0.18	3.12				
VOA	B106.2.C.D6.S8[11]		195		0.16	1.96				
VOA - week 12[10]	9242.VOA.12F23		386	R5	0.02	0.04	>20	>20	39.33	
VOA - week 12[10]	9242.VOA.12M6		641	R5	0.01	0.01	>20	17.43	79.48	
VOA - week 12[10]	9243.VOA.12Y10		679	R5	0.02	0.04	>20	17.03	76.88	
VOA - week 12[10]	9244.VOA.12I10		492	R5	0.02	0.04	>20	1.73	14.14	
VOA - week 12[10]	9244.VOA.12J17		483	Dual	0.02	0.09	>20	>20	30.82	
VOA - week -2[10]	9244.VOA.G12		694	R5	0.01	0.10	>20	>20	17.29	
VOA - week -2[10]	9244.VOA.H1		496	R5	0.02	0.06			45.21	
VOA - week -2[10]	9244.VOA.K2		404	Dual	0.02	0.15	>20	>20	46.79	48%
VOA - week -2[10]	9244.VOA.P11		423	R5	0.02	0.11	>20	10.97	139.08	
VOA - week 12[10]	9241.VOA.12AU7		360	Dual	0.03	0.25			174.31	56%
VOA - week -2[10]	9241.VOA.D2		445	R5	0.02	0.09			2.54	42%
VOA - week -2[10]	9241.VOA.A10		315		0.04	0.13				
VOA - week -2[10]	9241.VOA.C19		282		0.04	0.09				
VOA - week -2[10]	9241.VOA.C8	NCT02825797	278		0.04	0.10				
Rebound	9242.REB.6B8		299	R5	1.13	45.04			4.59	
Rebound	9242.REB.6A7[12]		309	R5	1.05	21.99			5.63	53%
Rebound	9242.REB.6B2[12]		286	R5	1.93	30.49			15.69	
Rebound	9242.REB.13B1[12]		547	R5	1.26	61.88			9.93	
Rebound	9242.REB.13B8[12]		418	R5	1.70	58.24			9.68	
IMC	9242.REB.r1[12]		108	R5	2.08	46.67			3.54	
Rebound	9243.REB.13F7		554	R5	1.56	49.26			10.58	
Rebound	9244.REB.7A8		499	R5	1.53	54.25			6.41	81%
Rebound	9244.REB.7A1		459	R5	1.59	31.67			6.05	
Rebound	9244.REB.7C1		567	R5	1.72	34.43			4.14	
Rebound	9244.REB.9D3		578	R5	1.35	48.06	>20	10.21	27.08	61%
Rebound	9244.REB.9E6		535	R5	1.70	77.03	>20	>20	136.72	81%
Rebound	9241.REB.7D4		626	R5	1.62	82.64	>20	>20	4.82	91%
VOA - Pre ATI	A06.VOA.M5		139	R5	0.15	1.70	>20	>20	71.20	52%
VOA - Pre ATI	A06.VOA.M10		144	R5	0.11	1.57	>20	>20	42.78	22%
VOA - Pre ATI	A06.VOA.M30		158	R5	0.09	1.81	>20	>20	62.60	28%
VOA - Pre ATI	A06.VOA.M28		97	R5	0.09	1.17			83.36	
VOA - Pre ATI	A06.VOA.M19		150	R5	0.08	1.40			54.54	38%
VOA - Pre ATI	A06.VOA.M29		124	R5	0.07	2.99			128.33	
VOA - Post ATI	A06.VOA.2B		143	R5	0.07	0.85			128.52	51%
VOA - Post ATI	A06.VOA.M20		126	R5	0.09	1.67			121.20	48%
VOA - Post ATI	A06.VOA.M3		117		0.09	1.10				
VOA - Pre ATI	A08.VOA.1E2		99	X4	0.04	0.32			75.20	
VOA - Pre ATI	A08.VOA.M1		1548	Dual	0.02	0.01	>20	>20	14.96	
VOA - Pre ATI	A08.VOA.M4		965	X4	0.01	0.04			43.40	49%
VOA - Pre ATI	A08.VOA.M5		665	X4	0.01	0.10			16.78	24%
VOA - Post ATI	A08.VOA.M17		977	Dual	0.01	0.60			20.23	
VOA - Post ATI	A08.VOA.M20		620	X4	0.01	0.08			8.64	31%
VOA - Post ATI	A08.VOA.1B5		122	X4	0.03	0.90	>20	>20	8.29	
VOA - Post ATI	A08.VOA.1C8		152	X4	0.03	0.08			4.35	
VOA - Post ATI	A08.VOA.1F8		163	Dual	0.03	0.07			4.44	
VOA - Post ATI	A08.VOA.3D8		65	R5	1.47	5.17			6.04	
VOA - Post ATI	A08.VOA.4A1		103	X4	0.02	0.15	>20	>20	13.91	
VOA - Post ATI	A08.VOA.4E4		120	X4	0.02	0.09	>20	>20	15.37	
VOA - Post ATI	A08.VOA.5C3		83	X4	0.03	0.39			2.93	
VOA - Post ATI	A08.VOA.5E2		142	X4	0.02	0.03	>20	>20	13.11	
VOA - Post ATI	A08.VOA.5E4		119	Dual	0.04	0.49			1.83	
VOA - Post ATI	A08.VOA.6D3		120	X4	0.03	0.04			11.00	
VOA - Post ATI	A08.VOA.6E2		86	X4	0.02	0.08			3.13	
VOA - Post ATI	A08.VOA.6F6		66	R5	1.23	8.24			8.84	
VOA - Post ATI	A08.VOA.7F8		150	Dual	0.04	0.14			3.36	
VOA - Post ATI	A08.VOA.8E8		50	Dual	0.03	0.03			2.65	
Rebound	A08.REB.1A3		451	Dual	1.06	83.13			2.50	94%
Rebound	A08.REB.1D1		496	Dual	1.45	51.37			5.98	87%
Rebound	A08.REB.5C2	NCT02463227	125	R5	1.22	80.62			47.47	
Rebound	A08.REB.5D2		250	X4	1.44	45.44			29.40	
Rebound	A08.REB.6B3		125	R5	0.85	55.84			59.56	
Rebound	A08.REB.6D6		728	X4	1.22	46.83	>20	>20	40.83	
Rebound	A08.REB.7A3		504	X4	1.51	75.85			24.00	
Rebound	A08.REB.7C1		707	X4	1.43	68.06			24.61	
Rebound	A08.REB.7C2		176	R5	2.07	44.85			24.26	
Rebound	A08.REB.7D3		309	X4	1.65	38.78	>20	>20	25.16	
Rebound	A08.REB.8A5		768	X4	1.59	41.98	>20	>20	39.00	
Rebound	A08.REB.8B3		763	X4	1.61	41.17			46.30	
Rebound	A08.REB.8D1		425	X4	1.33	31.24	>20	>20	29.05	
Rebound	A08.REB.6B5		510	X4	2.28	64.49			142.66	
Rebound	A08.REB.8B5		510	X4	1.94	69.78			224.92	
Rebound	A08.REB.2F4		420		3.01	92.25				77%
IMC	A08.REB.2F4		66	R5	2.01	117.61			3.82	
Rebound	A08.REB.1A5		506	X4	1.69	42.34			1.31	84%
IMC	A08.REB.1A5		106	X4	2.70	49.23				
VOA - Pre ATI	A09.VOA.M25		194	R5	0.26	1.29			82.33	
VOA - Pre ATI	A09.VOA.M22		206	R5	0.05	0.19			115.31	
VOA - Pre ATI	A09.VOA.M2		254	R5	0.05	0.46			82.42	23%
VOA - Pre ATI	A09.VOA.M6		171	R5	0.06	0.70			110.34	49%
VOA - Post ATI	A09.VOA.M9		171	R5	0.21	0.06			45.72	
VOA - Post ATI	A09.VOA.M16		285	R5	0.05	0.69			74.11	
Rebound	A09.REB.1B5		275		3.16	58.67				
Rebound	A09.REB.1D5		101		2.19	51.20				
Rebound	A09.REB.2B2		171	R5	2.79	26.36			1.05	
Rebound	A09.REB.1A1		376	R5	2.40	46.03			7.73	73%
Rebound	A09.REB.1A3		227	R5	1.78	58.57			3.04	79%
Rebound	A09.REB.1A4		239	R5	2.48	70.36			3.01	
Rebound	A09.REB.1A5		249	R5	2.55	61.27	>20	>20	11.68	
Rebound	A09.REB.1A2		221	R5	2.54	83.45			5.30	74%
IMC	A09.REB.1A2		104	R5	1.63	142.15				
Rebound	S22.REB.24C4		399	R5	1.64	90.59			5.50	74%
Rebound	S22.REB.1E2		389	R5	1.03	61.14			8.59	
Rebound	S22.REB.1F5		374	R5	1.62	93.32	>20	>20	12.95	
Rebound	S22.REB.3A6		487	R5	1.45	97.27	>20	9.977	21.40	74%
Rebound	S22.REB.3B6		378	R5	1.00	75.65	>20	>20	13.32	65%
Rebound	S23.REB.3D1	NCT00051818	358	R5	1.70	66.56	>20	11.63	21.68	
Rebound	S23.REB.24A5		475	R5	1.25	76.30			29.05	
Rebound	S30.REB.8D1		407		1.21	84.20				
Rebound	S30.REB.2D1		303		2.14	87.20				
Rebound	S30.REB.2D2		350	R5	1.54	70.82			18.95	71%
Rebound	S30.REB.7D1		336	R5	1.72	72.69			3.42	85%
Rebound	004.REB.4D4		413	R5	2.58	93.58	>20	>20	18.74	85%
Rebound	004.REB.4E6		263	R5	2.54	63.21	>20	>20	15.19	88%
Rebound	004.REB.4D1		259	R5	2.65	97.87	>20	>20	32.26	80%
Rebound	004.REB.4E3		252	R5	5.55	111.80	>20	>20	8.66	
Rebound	030.REB.3E1		371	R5	2.99	56.49			24.35	68%
Rebound	030.REB.2E1	NCT02227277	396	R5	2.84	47.24			30.22	93%
Rebound	030.REB.4E1		427	R5	3.48	70.43			30.93	74%
Rebound	030.REB.8E1		308	R5	2.84	69.21			32.36	87%
Rebound	044.REB.6F1		283	R5	3.42	79.99			39.42	74%
Rebound	044.REB.5F1		348	R5	2.75	69.41			30.89	86%
Rebound	044.REB.7F1		329	R5	2.80	72.71			16.85	81%
Rebound	044.REB.8F1		355	R5	2.48	91.45			37.08	92%
Rebound	601.REB.4B7		497	R5	2.15	64.85			28.56	
Rebound	601.REB.4C3		483	R5	2.03	33.29	>20	>20	30.56	73%
Rebound	601.REB.4B4[12]		468	R5	2.17	65.81			13.49	74%
Rebound	601.REB.4A8[12]	NCT02588586	546	R5	1.81	42.24			11.98	71%
Rebound	601.REB.4A7[12]		562	R5	2.25	60.84			12.89	64%
Rebound	601.REB.4C1[12]		536	R5	2.02	54.66	>20	>20	20.30	72%
IMC	601.REB.r1[12]		96	R5	1.68	91.79			3.58	

[1]Isolates were obtained by expanding viral outgrowth assay (VOA) supernatants as previously reported (Lorenzi et al., 2016; Bar et al., 2016; Salantes et al., 2018; and Mendoza et al., 2018) or generated de novo from cryopreserved PBMCs or plasma samples.

[2]Viral sequence identifier as submitted to GenBank (for accession numbers see Table S5).

[3]Concentration of p24 antigen in CD4+ T-cell culture at day 7 postinfection in the absence of IFN treatment.

[4]Viral tropism as determined in TZMbl cells; cells were pretreated with AMD and Maraviroc prior to virus infection to inhibit interaction with CXCR4 and CCR5 cellular receptors, respectively.

[5]Dose of IFN that reduced viral replication in CD4+ T cells by 50%.

[6]Concentration of soluble CD4 (sCD4) that reduced infectivity by 50% in a TZMbl neutralization assay.

[7]Concentration of CD4-Ig that reduced infectivity by 50% in a TZMbl neutralization assay.

[8]Infectious units per particle (picogram of RT) measured in TZM-bl cells.

[9]Percent of viral release from CD4+ T cells 7 days after infection, expressed as the ratio of cell-free p24 and cell-associated plus cell free p24.

[10]Samples from the NCT02825797 study were collected before (-2 week) and during (12 week) treatment interruption, but prior to any detectable rebound virus.

[11]B106.1.C.3.8 was isolated from the first and 106.2.C.D6.S8 from the second leukapheresis sample.

[12]Infectious molecular clones (IMCs) 9242.REB.r1 and 601.REB.r1 were synthesized based on the consensus sequences of four closely related rebound isolates, including 9242.REB.6A7, 9242.REB.6B2, 9242.REB.13B1 and 9242.REB.13B8 as well as 601.REB.4B4, 601.REB.4A8, 601.REB.4A7 and 601.REB.4C1, respectively.