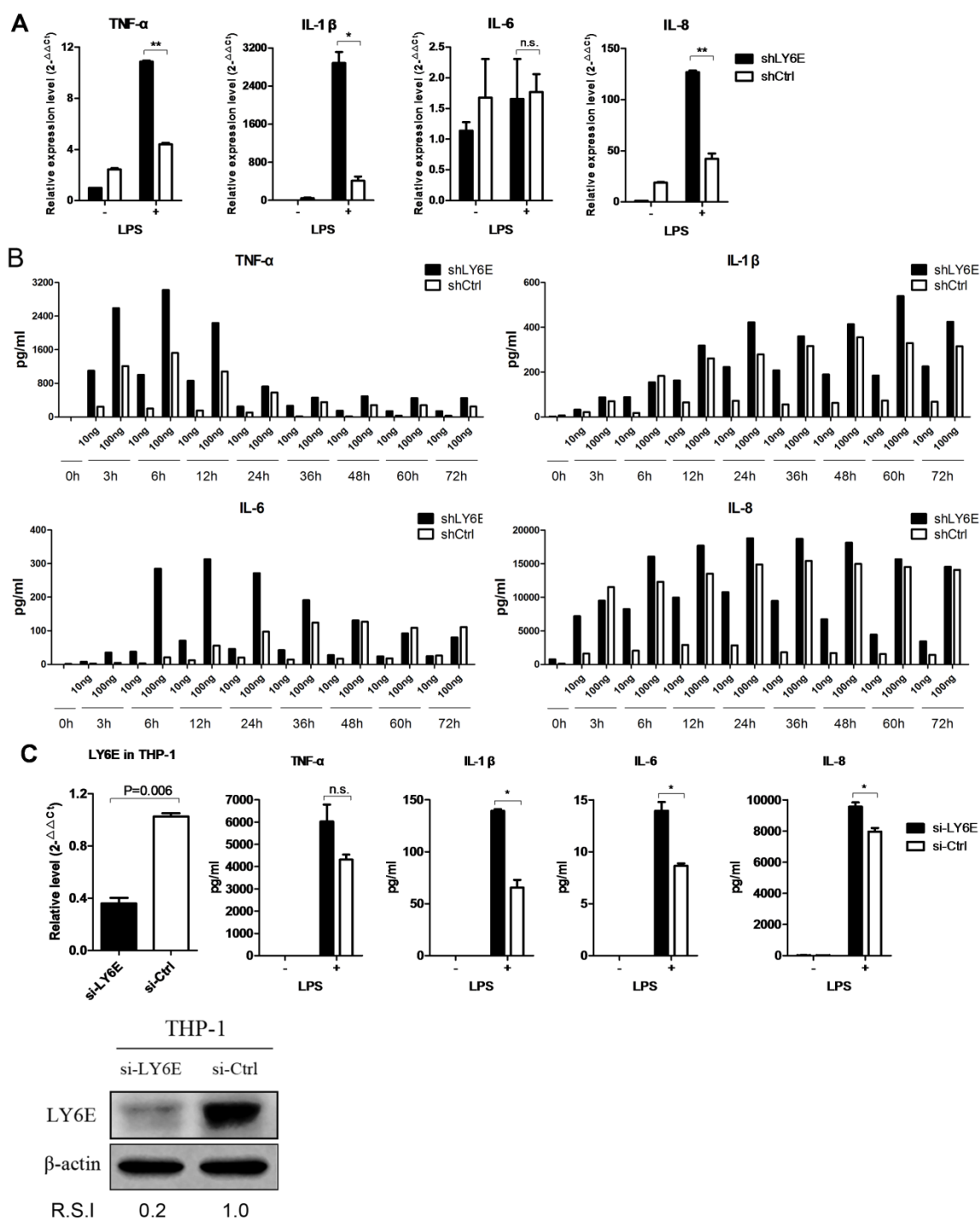


**Supplementary Figure 1. Comparison of immune genes expression in THP-1-shLY6E cells and THP-1-shCtrl cells.** Comparison of receptors and activation markers in LY6E-silenced THP-1 cells and control cells. Expression of CD16, CD86, PD-1, PD-L1, PD-L2, TLR4, HLA-DR, CD95, FasL, CXCR4, and CCR5 was examined in THP-1-shLY6E and THP-1-shCtrl cells by flow cytometry.



**Supplementary Figure 2. Inflammatory cytokines production in THP-1-shLY6E cells and THP-1-shCtrl cells.** (A) Production of the inflammatory cytokines TNF- $\alpha$ , IL-1 $\beta$ , IL-6, and IL-8 expression was examined at the mRNA level in THP-1-shLY6E and THP-1-shCtrl cells in the presence or absence of LPS stimulation. (B) Production of the

inflammatory cytokines TNF- $\alpha$ , IL-1  $\beta$ , IL-6 and IL-8 in THP-1-shLY6E and THP-1-shCtrl cells was quantified by CBA after incubation with 10 ng/mL or 100 ng/mL LPS for 0–72 h. (C) Production of inflammatory cytokines during transient knockdown of LY6E. THP-1 cells were transfected with si-LY6E or si-Ctrl for 72 h. LY6E expression was analyzed by qRT-PCR and western blotting. The cells were then incubated with 100 ng/mL LPS for 6 h, and inflammatory cytokine production was determined by CBA. \*P <0.05, \*\* P<0.01, n.s., not significant.

**Supplementary Table 1. Patient cohorts' characteristics**

<b>Patient</b>	<b>Age</b>	<b>Sex</b>	<b>Duration after confirmative diagnosis of HIV infection (years)</b>	<b>Observation period (years)</b>	<b>Viral load before treatment (copies/ml)</b>	<b>Viral load after treatment (copies/ml)</b>	<b>CD4 count before treatment (cells/<math>\mu</math>l)</b>	<b>CD4 count after treatment (cells/<math>\mu</math>l)</b>	<b>Beginning time of treatment</b>
<b>Group 1</b>									
<b>503</b>	45	M	8	3	<50~1800		224~494		
<b>504</b>	46	F	8	3	<50~1300		250~530		
<b>505</b>	44	M	8	3	6100~8700		613~734		
<b>507</b>	54	M	8	3	720~1400		723~856		
<b>511</b>	51	M	6	3	9600~13000		195~636		
<b>512</b>	45	M	6	3	3600~11000		228~607		
<b>514</b>	50	F	8	3	4100~39000		318~541		
<b>518</b>	64	F	8	3	940~5600		420~541		
<b>519</b>	43	M	8	3	2500~5600		402~466		
<b>544</b>	54	M	8	3	7900~35000		200~403		
<b>551</b>	38	M	8	3	<50~680		637		
<b>558</b>	40	M	8	3	40000~68000		211~271		
<b>564</b>	52	M	8	3	3800~16000		258~460		
<b>565</b>	60	M	8	3	430000		123		
<b>566</b>	64	M	8	3	34000~37000		152~246		
<b>623</b>	46	M	9	3	<50		329~506		
<b>624</b>	48	M	7	3	420~2200		424~664		
<b>627</b>	34	M	8	3	11000		453~679		
<b>630</b>	40	F	8	3	<50		554~724		

<b>631</b>	54	F	7	3	8000~18000		370~811		
<b>633</b>	46	F	8	3	7200~17000		457~657		
<b>637</b>	40	F	7	3	490~3700		159~532		
<b>639</b>	51	M	9	3	13000~15000		356~769		
<b>640</b>	32	M	7	3	<50~4400		438~634		
<b>671</b>	39	M	7	3	470~1500		250~324		
<b>674</b>	32	M	5	3	98000~260000		123~334		
<b>682</b>	51	M	5	3	840~5500		198~240		
<b>684</b>	49	M	8	3	1600~15000		459~950		
<b>692</b>	52	M	8	3	1000~15000		344~501		
<b>693</b>	45	F	8	3	<50~220		416~476		
<b>Group 2</b>				3					
<b>502</b>	40	F	8	3	26000~170000	<50	132~477	271-294	2012/1/4
<b>506</b>	43	F	8	3	280~4100	<50	288~667	375~638	2012/5/4
<b>545</b>	58	F	7	3	33000~59000	<50	116~308	285~478	2010/12/8
<b>547</b>	63	F	8	3	3700~19000	<50	169~353	203~415	2010/11/7
<b>548</b>	52	F	8	3	46000~48000	<50	216~250	282~337	2009/9/24
<b>549</b>	60	F	8	3	78000~130000	<50	234~579	250~356	2011/7/22
<b>550</b>	38	F	8	3	2100~5700	<50	170~332	244~462	2012/2/28
<b>552</b>	49	M	8	3	22000~74000	<50	124~410	186~367	2010/5/7
<b>554</b>	54	M	7	3	9700	<50	278~382	255~449	2010/6/29
<b>556</b>	37	F	8	3	12000~67000	<50	159~451	484	2012/10/16
<b>561</b>	51	M	8	3	8200~28000	<50	166~248	243~398	2010/6/29
<b>567</b>	52	F	4	3	190000	<50	119~229	210~305	2010/8/16
<b>625</b>	50	M	8	3	11000	<50	335~371	341~578	2010/6/8
<b>626</b>	42	M	6	3	61000~62000	<50	75~694	177~290	2012/7/23
<b>670</b>	53	M	8	3	25000~34000	<50	31~45	33~74	2011/11/10

<b>672</b>	32	M	7	3	130000	<50	131~205	290~750	2009/11/4
<b>673</b>	56	F	8	3	8400~17000	<50	262~312	251~399	2010/11/23
<b>675</b>	37	F	8	3	180000	<50	133	109~282	2010/6/22
<b>676</b>	59	M	4	3	2700	<50	256	321~367	2009/11/9
<b>677</b>	50	M	8	3	3500	<50	220~260	184~320	2010/4/7
<b>680</b>	45	M	6	3	42000	<50	261~303	302~405	2010/6/23
<b>681</b>	47	M	8	3	2900~12000	<50	260~347	390~623	2011/5/16
<b>691</b>	33	M	4	3	53000~100000	<50	128~209	243~419	2010/5/7
<b>694</b>	43	M	8	3	6200~7800	<50	292~350	291~414	2010/5/18

Group 1, HIV-infected subjects (viremic)

Group 2, ART-treated HIV-infected subjects (aviremic)

Abbreviations: M, male; F, female.

**Supplementary Table 2. HIV-1 disease-associated IFN-I inducible genes**

	<b>Gene symbol</b>	<b>Parametric P-value<sup>a</sup></b>	<b>Fold-change<sup>a</sup></b>	<b>Parametric P-value<sup>b</sup></b>	<b>Fold-change<sup>b</sup></b>	<b>Definition</b>
<b>1</b>	APOBEC3G	0.0088664	5.56	0.0006805	1.56	apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like 3G
<b>2</b>	ASCL2	0.0002599	10.00	0.0341842	1.54	achaete-scute complex homolog 2 (Drosophila)
<b>3</b>	IFI35	0.0004331	6.67	5.33E-05	1.67	interferon-induced protein 35
<b>4</b>	IFI44	2.39E-05	19.61	0.006233	1.96	interferon-induced protein 44
<b>5</b>	IFI44L	3.04E-05	33.33	0.0010135	2.33	interferon-induced protein 44-like
<b>6</b>	IFIT1	8.00E-06	76.92	0.0235859	1.54	interferon-induced protein with tetratricopeptide repeats 1
<b>7</b>	IFIT3	6.18E-05	76.92	0.0076668	1.56	interferon-induced protein with tetratricopeptide repeats 3
<b>8</b>	IFITM1	9.39E-05	38.46	8.01E-05	1.67	interferon induced transmembrane protein 1 (9-27)
<b>9</b>	IL1RN	0.0013437	8.33	0.0050996	1.52	interleukin 1 receptor antagonist
<b>10</b>	IRF7	3.73E-05	17.24	2.16E-05	2.33	interferon regulatory factor 7
<b>11</b>	ISG15	5.40E-06	26.32	8.43E-05	2.50	ISG15 ubiquitin-like modifier
<b>12</b>	LAG3	0.0002155	10.64	0.0163199	1.79	lymphocyte-activation gene 3
<b>13</b>	LY6E	0.0026003	6.25	1.32E-05	2.38	lymphocyte antigen 6 complex, locus E
<b>14</b>	OAS1	3.16E-05	17.24	0.0127057	1.61	2',5'-oligoadenylate synthetase 1, 40/46kDa
<b>15</b>	OAS2	0.0001725	12.99	0.0022489	1.69	2'-5'-oligoadenylate synthetase 2, 69/71kDa
<b>16</b>	OASL	1.20E-06	62.50	0.0002184	1.96	2'-5'-oligoadenylate synthetase-like
<b>17</b>	RSAD2	< 1e-07	625.00	0.0019565	2.00	radical S-adenosyl methionine domain containing 2

<b>18</b>	SAMD4A	0.0008746	10.10	0.0057109	1.54	sterile alpha motif domain containing 4A
<b>19</b>	XAF1	0.0004648	19.23	0.001188	1.75	XIAP associated factor 1

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HIV-1 disease-associated genes with a fold-change greater than 1.5 were listed in the table

- a. genes induced by IFN- $\alpha$
- b. genes differentially expressed in HIV-infected subjects with divergent clinical outcomes