

# Supplementary Materials: Retrospective Proteomic Analysis of Cellular Immune Responses and Protective Correlates of p24 Vaccination in an HIV Elite Controller Using Antibody Arrays

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**Table S1.** Showing the 62 differentially expressed proteins in the viremic phase.

Cytokines	Viremic Phase		
	CD4 <sup>+</sup> T Cells	CD14 <sup>+</sup> Monocytes	CD8 <sup>+</sup> Cytotoxic T Cells
ALCAM	1.617	-4.629	-
BMP-4	-3.301	-1.491	-
BTC	-3.714	-	-1.967
CCL-28	-2.456	-	-
CK $\beta$ 8-1	-2.201	-	7.248
DAN	2.753	-3.444	-
Dtk	-9.966	37.758	-15.494
EDA-A2	1.786	-	-
EGF-R	-	-3.410	7.874
ENA-78	-	-14.912	-
Endoglin	-5.574	-6.882	-1.512
Eotaxin-2	-	-2.956	-1.577
EpCAM	-	5.997	-
ErbB2	1.764	-	-1.842
Fc $\gamma$ RIIB/C	-	-2.070	-1.724
FGF-7	1.840	-	-
FSH	2.078	-	4.195
GCP-2	1.509	-	-
GITR	-	-4.255	-
GRO	-1.581	-6.474	-
HGF	-	-2.608	1.729
ICAM-3	12.185	-	-
IGFBP-2	-	-2.510	1.572
IGFBP-3	-3.942	4.399	-
IGFBP-4	3.012	-	-
IGF-I SR	-	-	1.687
IL-1 beta	1.880	-	3.472
IL-13 R $\alpha$ 1	-	10.584	1.902
IL-17B	-	1.988	-
IL-21R	-15.041	-	-
IL-4	1.693	-	-
IP-10	-	4.174	-
I-TAC	-	9.875	-
Leptin R	-	-1.764	2.432
LIF	9.118	-	-
MCP-4	-	-1.913	-
MIP-1 $\alpha$	1.872	-2.083	9.036
MIP-1 $\beta$	1.630	-	14.747

Table S1. Cont.

Viremic Phase			
Cytokines	CD4 <sup>+</sup> T Cells	CD14 <sup>+</sup> Monocytes	CD8 <sup>+</sup> Cytotoxic T Cells
MIP-1 delta	–	–3.609	–5.584
MIP-3 $\beta$	–	1.757	–
MMP-10	2.216	–	–4.106
MMP-13	1.871	10.326	–1.717
MMP-7	–	36.798	–1.713
NAP-2	–	1.621	–1.730
NT-3	1.600	–	–
NT-4	–	–4.015	–
Osteoprotegerin	–15.166	–	–2.767
PARC	1.724	–	–
PDGF-BB	2.451	–1.875	–
PIGF	4.513	–17.390	1.506
SCF R	2.579	8.777	–
TACE	–	–3.137	–
TECK	–8.937	–8.184	–2.631
TGF $\beta$ 2	2.250	–1.576	–
TGF- $\alpha$	31.912	8.390	–
TGF- $\beta$ 3	1.580	–	–
TIMP-1	–3.045	–6.598	–
TRAIL R3	–	–3.902	–
TRAIL R4	–2.972	–2.322	–2.235
uPAR	–	–7.542	–
VEGF-D	–29.987	–55.239	–
XEDAR	–	–	1.977

Table S2. Showing the 68 differentially expressed proteins in the aviremic phase.

Aviremic Phase			
Cytokines	CD4 <sup>+</sup> T Cells	CD14 <sup>+</sup> Monocytes	CD8 <sup>+</sup> Cytotoxic T Cells
ACE-2	–1.278	–1.727	5.192
ALCAM	–3.202	–2.591	–
BMP-4	–	–	–7.525
BTC	1.912	–	–
Cathepsin S	–3.920	–7.379	1.661
CCL14a	2.152	–5.038	18.691
CCL-28	2.086	–	–
CK $\beta$ 8-1	–	–	5.636
Dtk	–4.916	–	–
EDA-A2	–1.802	2.937	–4.202
EGF	–	–	–33.681
EGF-R	2.016	–	–
ENA-78	1.981	–2.820	–
Endoglin	–1.743	–2.175	–
Eotaxin-2	–5.706	–2.366	–1.906
EpCAM	–	–1.820	–
ErbB2	–	–	7.565
Fcr RIIB/C	–1.867	–	1.921
FGF-7	–3.224	–	20.008

Table S2. Cont.

Aviremic Phase			
Cytokines	CD4 <sup>+</sup> T Cells	CD14 <sup>+</sup> Monocytes	CD8 <sup>+</sup> Cytotoxic T Cells
FLRG	–	–	–9.493
Fractalkine	14.720	11.945	4.651
FSH	6.719	7.178	
GCP-2	–	6.344	–4.300
GITR	1.601	–1.747	–
GM-CSF	–	4.715	5.086
GRO	1.594	–1.821	–
HGF	–	–1.541	–1.672
ICAM-3	–	2.574	–
IGFBP-2	8.358	1.859	7.907
IGFBP-3	1.627	–	–
IGFBP-4	–2.255	2.436	–7.525
IGF-I SR	4.184	–	2.393
IL-1 beta	–2.110	–	2.710
IL-13 R $\alpha$ 1	–	2.502	–2.790
IL-17B	–	10.870	–
IL-4	–7.652	–	2.481
IP-10	–	3.460	–
I-TAC	7.138	8.256	13.260
Leptin R	–	–	–2.041
LIF	–	–1.853	–
MCP-4	–	4.556	6.947
M-CSF	–3.117	1.572	11.791
MIP-1 $\alpha$	3.193	1.580	1.947
MIP-1 $\beta$	3.229	–	–2.670
MIP-1 delta	–41.333	1.509	–
MIP-3 $\alpha$	2.578	–	62.329
MIP-3 $\beta$	1.768	–	–
MMP-10	–	–	3.016
MMP-7	–	–2.681	–
NAP-2	–	3.705	–112.906
NT-3	1.807	–	2.004
NT-4	–	–	–9.350
Osteoprotegerin	1.769	–	–
PARC	–	–	–19.779
PDGF-BB	–	2.636	–10.599
PIGF	1.744	–	1.947
SCF	–1.861	–	36.281
SCF R	1.502	–	–
TACE	–	–9.879	–86.264
TECK	2.001	–	–
TGF- $\beta$ 3	4.391	3.332	–3.977
TIMP-1	1.946	–1.618	–
TRAIL R3	2.603	–	–
TRAIL R4	1.912	–	–
uPAR	–	–1.617	–
VEGF	1.617	1.562	–5.111
VEGF-D	1.849	–	–
XEDAR	8.613	–	–2.045

**Table S3.** Different expression patterns between the two phases in CD4<sup>+</sup> T cells.

Expression	Viremic Phase CD4 <sup>+</sup>	Aviremic phase CD4 <sup>+</sup>
Unique		
ICAM-3	12.19	–
IL-21R	–15.04	–
LIF	9.12	–
TGF- $\alpha$	31.91	–
Eotaxin-2	–	–5.71
Fractalkine	–	14.72
IGFBP-2	–	8.36
IGF-I SR	–	4.18
I-TAC	–	7.14
MIP-1 delta	–	–41.33
XEDAR	–	8.61
Reverse trend		
CCL-28	–2.46	2.09
EDA-A2	1.79	–1.80
FGF-7	1.84	–3.22
GRO	–1.58	1.59
IGFBP-3	–3.94	1.63
IGFBP-4	3.01	–2.25
IL-1 $\beta$	1.88	–2.11
IL-4	1.69	–7.65
Osteoprotegerin	–15.17	1.77
TECK	–8.94	2.00
TIMP-1	–3.04	1.95
TRAIL R4	–2.97	1.91
VEGF	–1.52	1.62
VEGF-D	–29.99	1.85
Same trend but Very High is one phase		
Dtk	–9.97	–4.92
Endoglin	–5.57	–1.74
FSH	2.08	6.72
MIP-1 $\alpha$	1.87	3.19
MIP-1 $\beta$	1.63	3.23
PIGF	4.51	1.74
TGF- $\beta$ 3	1.58	4.39

**Table S4.** Different expression patterns between the two phases in CD14<sup>+</sup> T cells.

Expression	Viremic Phase CD14 <sup>+</sup>	Aviremic Phase CD14 <sup>+</sup>
Unique		
Dtk	37.76	
IGFBP-3	4.40	
MMP-13	10.33	
PIGF	–17.39	
SCF R	8.78	
TECK	–8.18	
TGF- $\alpha$	8.39	
TRAIL R3	–3.90	
VEGF-D	–55.24	

Table S4. Cont.

Expression	Viremic Phase CD14 <sup>+</sup>	Aviremic Phase CD14 <sup>+</sup>
Unique		
Cathepsin S		-7.38
CCL14a		-5.04
Fractalkine		11.95
FSH		7.18
GCP-2		6.34
GM-CSF		4.72
Reverse trend		
EpCAM	6.00	-1.82
IGFBP-2	-2.51	1.86
MCP-4	-1.91	4.56
MIP-1 $\alpha$	-2.08	1.58
MIP-1 delta	-3.61	1.51
MMP-7	36.80	-2.68
PDGF-BB	-1.88	2.64
Same trend but Very High is one phase		
ALCAM	-4.63	-2.59
ENA-78	-14.91	-2.82
Endoglin	-6.88	-2.17
GITR	-4.26	-1.75
GRO	-6.47	-1.82
IL-13 R $\alpha$ 1	10.58	2.50
IL-17B	1.99	10.87
IP-10	4.17	3.46
I-TAC	9.88	8.26
NAP-2	1.62	3.71
TACE	-3.14	-9.88
TIMP-1	-6.60	-1.62
uPAR	-7.54	-1.62

Table S5. Different expression patterns between the two phases in CD8<sup>+</sup> T cells.

Expression	Viremic CD8 <sup>+</sup>	Aviremic CD8 <sup>+</sup>
Unique		
Dtk	-15.49	-
EGF-R	7.87	-
FSH	4.20	-
MIP-1 delta	-5.58	-
ACE-2	-	5.19
BMP-4	-	-7.52
CCL14a	-	18.69
EDA-A2	-	-4.20
EGF	-	-33.68
FGF-7	-	20.01
FLRG	-	-9.49
Fractalkine	-	4.65
GCP-2	-	-4.30
GM-CSF	-	5.09
IGFBP-4	-	-7.52

Table S5. Cont.

Expression	Viremic CD8 <sup>+</sup>	Aviremic CD8 <sup>+</sup>
Unique		
I-TAC	–	13.26
MCP-4	–	6.95
M-CSF	–	11.79
NT-4	–	–9.35
PARC	–	–19.78
PDGF-BB	–	–10.60
SCF	–	36.28
TACE	–	–86.26
TGF- $\beta$ 3	–	–3.98
VEGF	–	–5.11
Reverse trend		
ErbB2	–1.84	7.57
Fcr RIIB/C	–1.72	1.92
HGF	1.73	–1.67
IL-13 R $\alpha$ 1	1.90	–2.79
Leptin R	2.43	–2.04
MIP-1 $\beta$	14.75	–2.67
MIP-3 $\alpha$	–1.51	62.33
MMP-10	–4.11	3.02
XEDAR	1.98	–2.04
Same trend but Very High is one phase		
CK $\beta$ 8-1	7.25	5.64
IGFBP-2	1.57	7.91
IL-1 $\beta$	3.47	2.71
MIP-1 $\alpha$	9.04	1.95
NAP-2	–1.73	–112.91

Table S6. Parallel comparison of differentially expressed proteins in CD4<sup>+</sup> T cells, CD14<sup>+</sup> monocytes, and CD8<sup>+</sup> T cells during the viremic and aviremic phases.

ARRAY	Viremic Phase			Aviremic Phase		
	CD4 DE genes and % response	CD8 DE genes and % response	Monocytes DE genes and % response	CD4 DE genes and % response	CD8 DE genes and % response	Monocytes DE genes and % response
Protein array	39/62 (63%)	27/62 (43%)	40/62 (68%)	43/68 (63%)	41/68 (60%)	36/68 (53%)