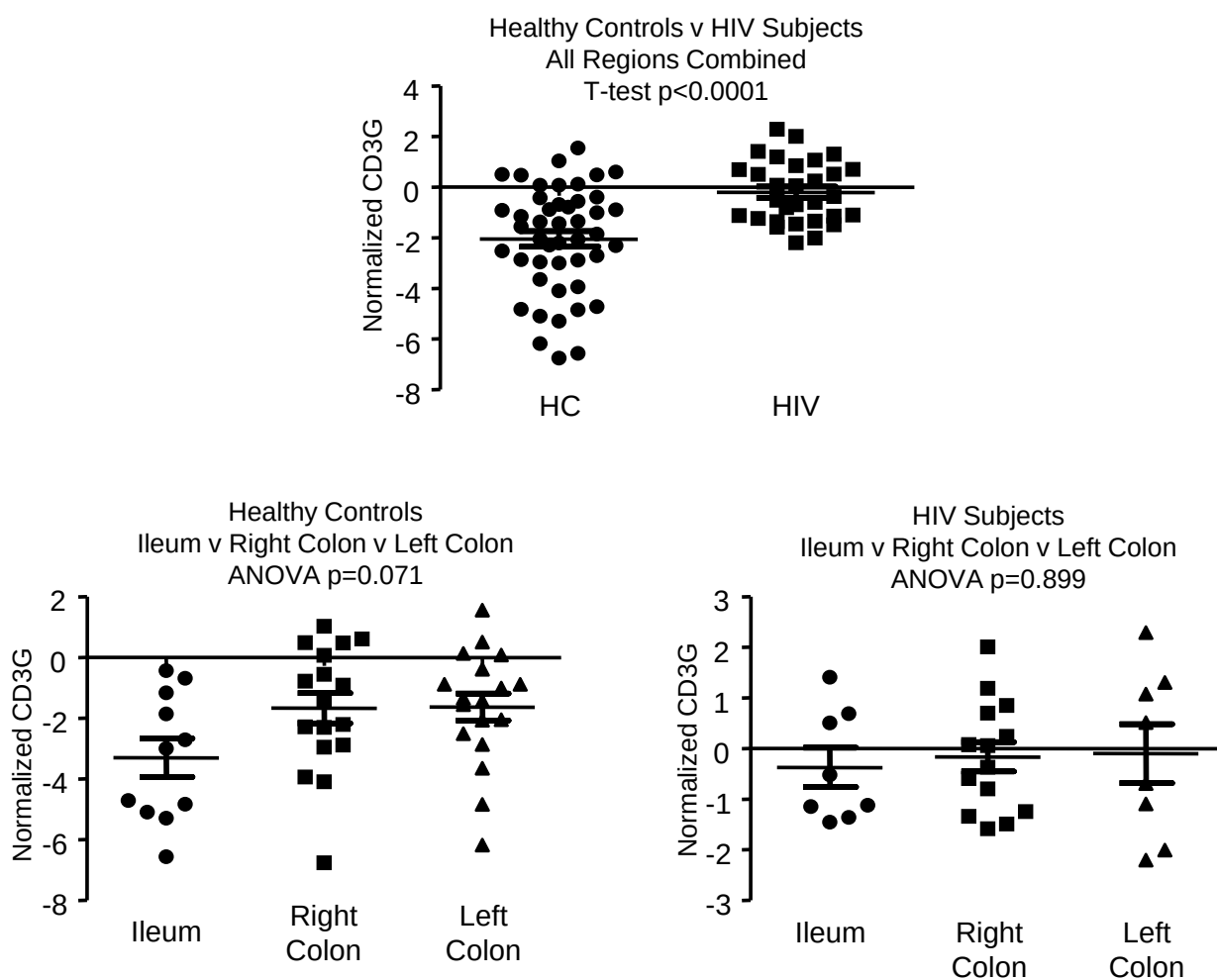


Supplementary Figure 1. Differences in gene expression between the ileum, right colon, and left colon are not attributable to changes in the presence of immune cells in each region. Gene expression is statistically indistinguishable among regions between the healthy controls ($p=0.07$) as well as between regions in the HIV+ Subjects ($p=0.90$).



Supplemental Table 1. Top Diseases and Biological Functions associated with gene expression changes observed in intestinal biopsy tissue collected from HIV+ subjects.

Supplementary Table 1. Top Diseases and Biological Functions (category)			
Diseases and disorders	p-value	Activation z-score	Molecules consistent with increase in disease/disorder
Inflammatory Response			
Cell-mediated response	2.58E-26	2.94	12/16 genes have expression consistent with increased cell-mediated response: <i>IL1B, IL6, IFNG, IFNB1, CCL5, IL2, IL17A, TLR2, TLR4, IL8, IL23A, TLR7</i>
Inflammatory response	2.57E-24	4.02	19/21 genes have expression consistent with increased inflammatory response: <i>CCR2, CCR5, IL1B, IL6, IFNG, IFNB1, TLR1, CCL5, IL2, IL17A, TLR5, IL22, TLR2, CCL2, TLR4, IL8, IL23A, TLR7, TLR8</i>
TH1 immune response	3.17E-26	2.876	11/13 genes have expression consistent with increased TH1 immune response: <i>CCR2, IL1B, IL6, IFNG, IFNB1, CCL5, IL17A, TLR2, TLR4, IL8, IL23A</i>
Cell-to-Cell Signaling			
Activation of leukocytes (cell-to-cell signaling)	6.25E-25	4.02	18/21 genes have expression consistent with increased activation of leukocytes: <i>CCR2, CCR5, IL1B, IL6, IFNG, IFNB1, TLR1, CCL5, CD3G, IL2, IL17A, TLR5, TLR2, CCL2, TLR4, IL8, IL23A, TLR7</i>
Activation of mononuclear leukocytes (cell-to-cell signaling)	2.34E-24	3.88	16/19 genes have expression consistent with increased activation of mononuclear leukocytes: <i>CCR2, IL1B, IL6, IFNG, IFNB1, TLR1, CCL5, CD3G, IL2, IL17A, TLR2, CCL2, TLR4, IL8, IL23A, TLR7</i>
Activation of myeloid cells (cell-to-cell signaling)	1.51E-23	3.19	12/17 genes have expression consistent with an increase in activation of myeloid cells: <i>CCR2, IL1B, IL6, IFNG, CCL5, IL2, IL17A, TLR2, CCL2, TLR4, IL8, IL23A</i>
Activation of phagocytes (cell-to-cell signaling)	5.11E-25	3.52	15/18 genes have expression consistent with increased activation of phagocytes: <i>CCR2, IL1B, IL6, IFNG, IFNB1, CCL5, IL2, IL17A, TLR5, TLR2, CCL2, TLR4, IL8, IL23A, TLR7</i>
Activation of T-lymphocytes (cell-to-cell signaling)	4.87E-23	3.53	14/17 genes have expression consistent with increased activation of T-lymphocytes: <i>CCR2, IL1B, IL6, IFNG, IFNB1, CCL5, CD3G, IL2, IL17A, TLR2, TLR4, IL8, IL23A, TLR7</i>
Recruitment of leukocytes (cell-to-cell signaling)	3.88E-24	3.47	14/17 genes have expression consistent with increased recruitment of leukocytes: <i>IL1B, IL6, IFNG, CCL5, IL2, IL17A, TLR5, TLR2, CCL2, TLR4, IL8, TLR7, IL22, CCR5</i>
Recruitment of mononuclear leukocytes (cell-to-cell signaling)	7.11E-23	2.96	11/13 genes have expression consistent with increased recruitment of mononuclear leukocytes: <i>CCR5, IL1B, CCL5, IL2, IL17A, TLR2, CCL2, IL8, IL6, IFNG</i>
Response of mononuclear leukocytes (cell-to-cell signaling)	1.42E-24	2.52	10/16 genes have expression consistent with increased response of mononuclear leukocytes: <i>CCR5, IL1B, IL6, IFNB1, IL2, CCL2, TLR4, IL8, IL17A, TLR7, IL7R, TLR2, IFNG</i>
Cellular Development			
Maturation of leukocytes (cellular development)	3.79E-24	3.15	14/16 genes have expression consistent with increased maturation of leukocytes: <i>CCR2, IL1B, IL6, IFNG, IFNB1, CCL5, IL2, IL17A, TLR5, TLR2, TLR4, IL7R, TLR7</i>
Maturation of phagocytes (cellular development)	1.40E-23	2.85	12/14 genes have expression consistent with increased maturation of phagocytes: <i>IL1B, IL6, IFNG, IFNB1, CCL5, IL17A, TLR5, TLR2, TLR4, TLR7</i>
Infectious Disease			
Bacterial Infection (infectious disease)	7.01E-24	-2.33	11/18 genes have expression with decreases in bacterial infection: <i>IL1B, IL6, IFNG, TLR5, IL22, TLR2, TLR4, IRAK2, IFNB1, IL8, CCL2, IL17A, CCR5</i>

Supplemental Table 2. SAM Analysis of biopsies collected from healthy control subjects compared to HIV+ samples.

Supplementary Table 2. SAM Analysis of biopsies collected from healthy control subjects compared to HIV+ samples . *Significant difference between healthy controls and HIV-infected subjects (>1.5 fold change and FDR<0.03) (>1, increased in HIV; <1, decreased in HIV).				
Gene Symbol	HC v HIV All regions SAM FC	HC v HIV Ileum SAM FC	HC v HIV Right Colon SAM FC	HC v HIV Left Colon SAM FC
IL1B	4.07*	12.05*	2.89*	3.30*
IL17A	3.50*	7.74*	3.07*	2.71*
CD3G	3.49*	7.62*	2.80*	3.03*
IFNG	3.30*	7.56*	2.51*	2.93*
TLR4	3.05*	10.87*	1.93*	2.50*
IL7R	2.99*	6.22*	2.22*	3.06*
IL22	2.99*	7.05*	2.25*	2.71*
IL2	2.84*	4.41*	1.62	4.31*
IFNB1	2.84*	7.06*	2.10*	2.48*
CCR5	2.69*	5.16*	2.19*	2.50*
IL8	2.67*	5.01*	1.89*	2.69*
DSG3	2.65*	4.12*	2.34*	2.65*
IL6	2.56*	5.89*	1.84*	2.61*
CCL5	2.42*	4.40*	1.88*	2.46*
CLDN1	2.38*	7.07*	1.84*	1.62
CCL2	2.27*	4.41	1.85*	1.91*
IRAK2	2.23*	3.31*	1.95*	2.14*
TLR5	2.20*	3.42	2.28*	1.62
TLR2	2.14*	2.94	2.04*	1.89*
TLR7	1.97*	3.07	1.72*	1.89*
IL23A	1.89	3.71	1.26	2.13*
IL10	1.78	4.28	1.02	2.00
TLR8	1.76	4.39	1.28	1.73
CCR2	1.70	2.56	1.41	1.61
TLR1	1.60	2.03	1.45	1.62
TRAF6	1.48	1.91	1.25	1.57
CCL4	1.44	4.78	0.93	1.06
IFNA1	1.49	3.32	1.43	0.85
F11R	1.24	1.91	1.04	1.32
OCLN	1.20	1.64	1.14	0.85
IL7	1.15	1.79	1.05	0.91
IRAK1	1.10	1.88	0.78	1.04
DSP	1.07	1.60	0.87	1.17
CD3E	1.07	1.68	1.03	0.61
CLDN4	0.66	1.44	0.72	0.26*
IRF1	0.72	0.83	0.59	0.78
CDH1	0.74	1.26	0.67	0.44
TLR3	0.84	1.52	0.75	0.71
CXCR4	0.84	1.69	0.40	1.39
IRF7	0.97	1.81	0.72	0.92

Supplementary Table 3. Top Canonical Pathways affected in HIV+ subjects, by intestine region. The Signaling Pathway Categories that each canonical pathway falls under is indicated in parentheses.

Supplementary Table 3. Top Canonical Pathways				
	All regions (p value)	Ileum (p value)	Right colon (p value)	Left colon (p value)
Role of pattern recognition receptors in recognition of bacteria & viruses (cellular immune response & pathogen-influenced signaling)	2.74E-27	1.58E-32	5.02E-20	5.02E-20
Communication between innate & adaptive immune cells (cellular immune response)	4.43E-27	9.57E-31	3.12E-19	3.12E-19
TREM1 signaling (cellular immune response & cytokine signaling)	6.53E-21	5.57E-23	2.73E-15	5.12E-13
Role of cytokines in mediating communication between immune cells (cellular immune response, cytokine signaling, humoral immune response)	6.12E-20	3.76E-20	6.04E-14	7.13E-19
Toll-like receptor signaling (cellular immune response, humoral immune response, pathogen-influenced signaling, apoptosis)	3.43E-14	1.03E-18	--	--
Differential regulation of cytokine production in macrophages and T-helper cells by IL17A and IL17F (cytokine signaling)	--	--	4.59E-12	--
HMGB1 signaling (cellular immune response, cytokine signaling, humoral immune response, cellular stress & injury)	--	--	--	1.33E-13

Supplementary Table 4. Correlations of intestinal biopsy gene expression with serum markers of intestinal barrier integrity and inflammation (Pearson R, p value).

	LBP	IFABP	sCD14	Serum IL6	Serum TNF	Serum LTA
CD3G	Ileum: -0.13, 0.76 RC: 0.15, 0.53 LC: 0.13, 0.64	Ileum: 0.23, 0.56 RC: 0.23, 0.36 LC: 0.22, 0.40	Ileum: -0.23, 0.55 RC: 0.05, 0.85 LC: 0.06, 0.82	Ileum: -0.39, 0.29 RC: 0.28, 0.24 LC: -0.04, 0.88	ILEUM: -0.65, 0.06 RC: -0.15, 0.52 LC: -0.41, 0.10	ILEUM: -0.03, 0.93 RC: 0.39, 0.09 LC: 0.27, 0.29
IL1B	Ileum: -0.08, 0.84 RC: 0.28, 0.25 LC: 0.18, 0.51	Ileum: 0.24, 0.53 RC: 0.27, 0.28 LC: 0.33, 0.22	Ileum: -0.26, 0.50 RC: 0.12, 0.63 LC: 0.03, 0.90	Ileum: -0.36, 0.35 RC: 0.33, 0.16 LC: 0.03, 0.91	ILEUM: -0.65, 0.06 RC: -0.07, 0.77 LC: -0.45, 0.07	ILEUM: 0.001, 0.999 RC: 0.31, 0.18 LC: 0.22, 0.40
IFNG	Ileum: -0.07, 0.85 RC: 0.17, 0.48 LC: 0.12, 0.66	Ileum: 0.23, 0.55 RC: 0.16, 0.52 LC: 0.24, 0.37	Ileum: -0.26, 0.50 RC: -0.01, 0.98 LC: 0.02, 0.93	Ileum: -0.38, 0.32 RC: 0.19, 0.41 LC: -0.08, 0.76	ILEUM: -0.65, 0.06 RC: -0.19, 0.42 LC: -0.47, 0.06	ILEUM: -0.004, 0.99 RC: 0.36, 0.12 LC: 0.25, 0.33
IL17A	Ileum: -0.04, 0.92 RC: 0.06, 0.82 LC: 0.12, 0.67	Ileum: 0.29, 0.45 RC: 0.04, 0.87 LC: 0.22, 0.41	Ileum: -0.29, 0.45 RC: 0.02, 0.95 LC: 0.04, 0.89	Ileum: -0.33, 0.39 RC: 0.05, 0.83 LC: -0.08, 0.76	Ileum: -0.70, 0.03* RC: -0.18, 0.46 LC: -0.45, 0.07	ILEUM: 0.06, 0.88 RC: 0.26, 0.27 LC: 0.27, 0.29
CCR5	Ileum: -0.14, 0.73 RC: 0.10, 0.70 LC: 0.12, 0.66	Ileum: 0.14, 0.72 RC: 0.11, 0.66 LC: 0.21, 0.43	Ileum: -0.25, 0.51 RC: 0.03, 0.91 LC: 0.04, 0.88	Ileum: -0.44, 0.23 RC: 0.10, 0.67 LC: -0.08, 0.77	ILEUM: -0.60, 0.09 RC: -0.18, 0.45 LC: -0.43, 0.08	ILEUM: -0.05, 0.89 RC: 0.29, 0.21 LC: 0.26, 0.31
CCL5	Ileum: -0.25, 0.52 RC: 0.21, 0.38 LC: 0.004, 0.99	Ileum: 0.19, 0.63 RC: 0.21, 0.40 LC: 0.07, 0.80	Ileum: -0.15, 0.69 RC: 0.02, 0.93 LC: 0.07, 0.79	Ileum: -0.44, 0.24 RC: 0.37, 0.11 LC: -0.19, 0.47	ILEUM: -0.61, 0.08 RC: -0.18, 0.45 LC: -0.46, 0.06	ILEUM: -0.11, 0.77 RC: 0.46, 0.04* LC: 0.11, 0.67
IL7R	Ileum: -0.05, 0.89 RC: 0.19, 0.44 LC: 0.15, 0.57	Ileum: 0.21, 0.59 RC: 0.21, 0.40 LC: 0.21, 0.43	Ileum: -0.32, 0.40 RC: 0.10, 0.69 LC: 0.08, 0.77	Ileum: -0.37, 0.33 RC: 0.25, 0.29 LC: -0.08, 0.76	ILEUM: -0.60, 0.08 RC: -0.06, 0.80 LC: -0.51, 0.04*	ILEUM: -0.01, 0.98 RC: 0.24, 0.31 LC: 0.29, 0.26
IL2	Ileum: -0.01, 0.98 RC: -0.23, 0.34 LC: -0.05, 0.85	Ileum: 0.53, 0.15 RC: 0.13, 0.60 LC: 0.18, 0.52	Ileum: -0.39, 0.30 RC: -0.09, 0.72 LC: 0.05, 0.86	Ileum: -0.10, 0.79 RC: 0.25, 0.29 LC: -0.07, 0.79	ILEUM: -0.69, 0.04* RC: -0.34, 0.15 LC: -0.37, 0.14	ILEUM: -0.11, 0.77 RC: 0.01, 0.96 LC: 0.23, 0.37
DSG3	Ileum: -0.02, 0.96 RC: 0.20, 0.40 LC: 0.24, 0.37	Ileum: 0.26, 0.50 RC: 0.18, 0.47 LC: 0.46, 0.07	Ileum: -0.47, 0.20 RC: -0.09, 0.73 LC: -0.01, 0.96	Ileum: -0.27, 0.49 RC: 0.30, 0.20 LC: 0.16, 0.54	ILEUM: 0.07, 0.79 RC: -0.07, 0.77 LC: -0.27, 0.29	ILEUM: 0.02, 0.95 RC: 0.26, 0.26 LC: 0.32, 0.21
TLR4	Ileum: -0.07, 0.86 RC: 0.25, 0.31 LC: 0.19, 0.48	Ileum: 0.08, 0.83 RC: 0.13, 0.62 LC: 0.32, 0.23	Ileum: -0.35, 0.36 RC: 0.05, 0.83 LC: 0.03, 0.92	Ileum: -0.41, 0.27 RC: 0.09, 0.71 LC: -0.0003, 0.99	ILEUM: -0.54, 0.13 RC: 0.04, 0.87 LC: -0.40, 0.11	ILEUM: -0.05, 0.90 RC: 0.04, 0.88 LC: 0.30, 0.14
IL22	Ileum: 0.01, 0.97 RC: 0.15, 0.55 LC: -0.06, 0.82	Ileum: 0.28, 0.47 RC: -0.002, 0.99 LC: 0.28, 0.29	Ileum: -0.40, 0.28 RC: -0.02, 0.93 LC: -0.06, 0.81	Ileum: 0.27, 0.48 RC: 0.07, 0.76 LC: -0.07, 0.78	ILEUM: -0.72, 0.03* RC: -0.02, 0.94 LC: -0.29, 0.26	ILEUM: 0.05, 0.90 RC: 0.17, 0.49 LC: 0.06, 0.82
IL8	Ileum: -0.11, 0.78 RC: -0.09, 0.72 LC: 0.09, 0.75	Ileum: 0.22, 0.57 RC: -0.09, 0.72 LC: 0.22, 0.40	Ileum: -0.32, 0.41 RC: -0.09, 0.73 LC: 0.01, 0.98	Ileum: -0.38, 0.32 RC: -0.10, 0.66 LC: -0.12, 0.64	ILEUM: -0.69, 0.04* RC: -0.29, 0.21 LC: -0.44, 0.08	ILEUM: 0.01, 0.98 RC: 0.10, 0.68 LC: 0.23, 0.37
IFNB1	Ileum: -0.05, 0.90 RC: 0.02, 0.94 LC: 0.13, 0.62	Ileum: 0.18, 0.65 RC: -0.09, 0.72 LC: 0.22, 0.41	Ileum: -0.31, 0.42 RC: -0.03, 0.89 LC: 0.06, 0.83	Ileum: -0.38, 0.31 RC: -0.15, 0.52 LC: -0.08, 0.75	ILEUM: -0.60, 0.09 RC: -0.17, 0.46 LC: -0.41, 0.10	ILEUM: 0.01, 0.98 RC: 0.06, 0.79 LC: 0.30, 0.23
IL6	Ileum: -0.03, 0.94 RC: 0.09, 0.73 LC: 0.10, 0.70	Ileum: 0.29, 0.44 RC: 0.01, 0.97 LC: 0.28, 0.30	Ileum: -0.45, 0.23 RC: 0.01, 0.96 LC: -0.04, 0.88	Ileum: -0.25, 0.52 RC: -0.01, 0.98 LC: 0.01, 0.96	ILEUM: -0.72, 0.03* RC: -0.08, 0.75 LC: -0.40, 0.11	ILEUM: 0.04, 0.92 RC: 0.09, 0.71 LC: 0.29, 0.25
IRAK2	Ileum: -0.22, 0.56 RC: 0.19, 0.43 LC: 0.14, 0.60	Ileum: 0.25, 0.51 RC: 0.30, 0.23 LC: 0.14, 0.60	Ileum: -0.05, 0.90 RC: -0.03, 0.92 LC: 0.07, 0.80	Ileum: -0.39, 0.30 RC: 0.41, 0.07 LC: -0.06, 0.81	ILEUM: -0.56, 0.12 RC: -0.10, 0.67 LC: -0.39, 0.12	ILEUM: -0.18, 0.64 RC: 0.34, 0.14 LC: 0.24, 0.36
CLDN1	Ileum: 0.03, 0.94 RC: 0.22, 0.38 LC: 0.13, 0.63	Ileum: 0.16, 0.68 RC: 0.17, 0.49 LC: 0.43, 0.09	Ileum: -0.23, 0.25 RC: -0.02, 0.93 LC: 0.03, 0.92	Ileum: -0.38, 0.31 RC: 0.10, 0.68 LC: 0.07, 0.78	ILEUM: -0.53, 0.14 RC: -0.09, 0.70 LC: -0.32, 0.21	ILEUM: 0.06, 0.89 RC: 0.08, 0.75 LC: 0.28, 0.28
CCL2	Ileum: -0.09, 0.82 RC: -0.02, 0.92 LC: 0.06, 0.82	Ileum: 0.26, 0.50 RC: 0.06, 0.82 LC: 0.24, 0.36	Ileum: -0.41, 0.28 RC: -0.07, 0.77 LC: -0.06, 0.82	Ileum: -0.30, 0.43 RC: 0.03, 0.89 LC: -0.07, 0.80	ILEUM: -0.72, 0.03* RC: -0.23, 0.32 LC: -0.41, 0.11	ILEUM: 0.01, 0.98 RC: 0.17, 0.46 LC: 0.22, 0.40
TLR2	Ileum: -0.06, 0.87 RC: -0.17, 0.49 LC: -0.11, 0.70	Ileum: 0.28, 0.47 RC: -0.04, 0.88 LC: 0.14, 0.61	Ileum: -0.42, 0.26 RC: -0.17, 0.50 LC: -0.02, 0.95	Ileum: -0.28, 0.47 RC: 0.08, 0.75 LC: -0.19, 0.47	Ileum: -0.69, 0.04* RC: -0.27, 0.25 LC: -0.42, 0.10	ILEUM: 0.05, 0.91 RC: 0.16, 0.50 LC: 0.15, 0.57
TLR7	Ileum: -0.11, 0.77 RC: -0.08, 0.74 LC: 0.06, 0.83	Ileum: 0.15, 0.71 RC: -0.17, 0.50 LC: 0.03, 0.91	Ileum: -0.40, 0.29 RC: -0.11, 0.66 LC: 0.06, 0.83	Ileum: -0.38, 0.31 RC: -0.13, 0.58 LC: -0.22, 0.39	ILEUM: -0.59, 0.09 RC: -0.12, 0.61 LC: -0.36, 0.15	ILEUM: -0.06, 0.87 RC: 0.11, 0.64 LC: 0.26, 0.31
TLR5	Ileum: -0.08, 0.84 RC: -0.14, 0.58 LC: -0.16, 0.56	Ileum: 0.17, 0.65 RC: -0.10, 0.68 LC: 0.14, 0.61	Ileum: -0.38, 0.31 RC: -0.06, 0.81 LC: -0.10, 0.69	Ileum: -0.37, 0.32 RC: -0.15, 0.54 LC: -0.13, 0.62	ILEUM: -0.61, 0.08 RC: -0.28, 0.23 LC: -0.37, 0.15	ILEUM: -0.03, 0.94 RC: 0.10, 0.66 LC: 0.10, 0.71
IL23A	Ileum: -0.10, 0.81 RC: -0.02, 0.92 LC: -0.09, 0.75	Ileum: 0.28, 0.47 RC: 0.01, 0.95 LC: -0.07, 0.81	Ileum: -0.45, 0.22 RC: -0.08, 0.74 LC: 0.11, 0.69	Ileum: -0.29, 0.44 RC: 0.08, 0.73 LC: -0.24, 0.35	ILEUM: -0.69, 0.34 RC: -0.03, 0.91 LC: -0.37, 0.14	ILEUM: 0.03, 0.95 RC: 0.14, 0.55 LC: 0.22, 0.41
CLDN4	Ileum: -0.12, 0.77 RC: 0.10, 0.69 LC: -0.06, 0.81	Ileum: 0.04, 0.92 RC: 0.12, 0.64 LC: -0.13, 0.62	Ileum: 0.57, 0.11 RC: 0.06, 0.82 LC: -0.21, 0.41	Ileum: 0.13, 0.73 RC: 0.02, 0.93 LC: 0.08, 0.76	ILEUM: 0.47, 0.20 RC: 0.22, 0.36 LC: 0.07, 0.79	ILEUM: -0.14, 0.73 RC: 0.06, 0.80 LC: -0.40, 0.11

Supplementary Table 5 Correlations between intestinal biopsies collected from HIV- controls and HIV+ subjects with the intestinal microbiota (Pearson R, p value).

Supplementary Table 5. Correlations with microbiota							
	Roseburia (Pearson R, p value)	Bacteroides (Pearson R, p value)	Prevotellaceae (Pearson R, p value)		Roseburia (Pearson R, p value)	Bacteroides (Pearson R, p value)	Prevotellaceae (Pearson R, p value)
CD3G	HC: 0.23, 0.21 HIV: -0.31, 0.15 HC & HIV: 0.05, 0.74 ILEUM: 0.27, 0.43 RC: -0.02, 0.95 LC: -0.10, 0.69	HC: -0.21, 0.27 HIV: 0.20, 0.37 HC & HIV: -0.39, 0.004* ILEUM: -0.18, 0.60 RC: -0.55, 0.007* LC: -0.42, 0.06	HC: -0.002, 0.99 HIV: -0.26, 0.23 HC & HIV: 0.14, 0.30 ILEUM: 0.28, 0.40 RC: -0.02, 0.92 LC: 0.17, 0.48	IL8	HC: 0.26, 0.17 HIV: 0.01, 0.97 HC & HIV: 0.16, 0.24 ILEUM: 0.26, 0.44 RC: 0.21, 0.34 LC: 0.03, 0.91	HC: 0.08, 0.68 HIV: 0.14, 0.52 HC & HIV: -0.16, 0.24 ILEUM: -0.07, 0.85 RC: -0.06, 0.77 LC: -0.23, 0.32	HC: -0.13, 0.49 HIV: -0.10, 0.64 HC & HIV: 0.13, 0.36 ILEUM: 0.22, 0.52 RC: -0.03, 0.91 LC: 0.20, 0.41
IL1B	HHC: 0.19, 0.31 HIV, -0.38, 0.07 HC & HIV: 0.004, 0.97 ILEUM: 0.30, 0.37 RC: -0.04, 0.86 LC: -0.22, 0.36	HC: -0.28, 0.13 HIV: 0.09, 0.68 HC & HIV: -0.42, 0.002* ILEUM: -0.21, 0.54 RC: -0.56, 0.006* LC: -0.45, 0.04*	HC: 0.07, 0.70 HIV: -0.16, 0.45 HC & HIV: 0.16, 0.25 ILEUM: 0.34, 0.30 RC: -0.04, 0.84 LC: 0.17, 0.47	IFNB1	HC: 0.26, 0.16 HIV: -0.09, 0.70 HC & HIV: 0.16, 0.25 ILEUM: 0.28, 0.37 RC: 0.20, 0.37 LC: 0.02, 0.94	HC: 0.05, 0.80 HIV: 0.27, 0.22 HC & HIV: -0.17, 0.21 ILEUM: -0.07, 0.84 RC: -0.13, 0.56 LC: -0.26, 0.28	HC: -0.07, 0.71 HIV: -0.09, 0.69 HC & HIV: 0.15, 0.29 ILEUM: 0.23, 0.50 RC: 0.03, 0.88 LC: 0.20, 0.40
IFNG	HC: 0.20, 0.29 HIV: -0.32, 0.14 HC & HIV: 0.04, 0.78 ILEUM: 0.24, 0.48 RC: -0.04, 0.87 LC: -0.09, 0.70	HC: -0.007, 0.72 HIV: 0.22, 0.32 HC & HIV: -0.29, 0.03* ILEUM: -0.15, 0.65 RC: -0.37, 0.09 LC: -0.34, 0.15	HC: -0.05, 0.80 HIV: -0.30, 0.16 HC & HIV: 0.11, 0.41 ILEUM: 0.24, 0.47 RC: -0.08, 0.72 LC: 0.16, 0.51	IL6	HC: 0.26, 0.16 HIV: -0.05, 0.82 HC & HIV: 0.14, 0.30 ILEUM: 0.26, 0.44 RC: 0.19, 0.39 LC: -0.03, 0.91	HC: 0.02, 0.90 HIV: 0.22, 0.31 HC & HIV: -0.20, 0.15 ILEUM: -0.06, 0.85 RC: -0.19, 0.39 LC: -0.28, 0.24	HC: -0.13, 0.48 HIV: -0.06, 0.78 HC & HIV: 0.14, 0.30 ILEUM: 0.24, 0.48 RC: 0.05, 0.82 LC: 0.20, 0.41
IL17A	HC: 0.23, 0.21 HIV: -0.25, 0.25 HC & HIV: 0.10, 0.48 ILEUM: 0.24, 0.47 RC: 0.07, 0.74 LC: -0.04, 0.85	HC: -0.03, 0.88 HIV: 0.20, 0.37 HC & HIV: -0.27, 0.053 ILEUM: -0.14, 0.69 RC: -0.34, 0.11 LC: -0.32, 0.17	HC: -0.06, 0.74 HIV: -0.29, 0.17 HC & HIV: 0.13, 0.35 ILEUM: 0.23, 0.50 RC: -0.01, 0.97 LC: 0.17, 0.47	IRAK2	HC: 0.13, 0.48 HIV: -0.42, 0.049* HC & HIV: -0.09, 0.53 ILEUM: 0.25, 0.46 RC: -0.17, 0.43 LC: -0.17, 0.48	HC: -0.34, 0.06 HIV: 0.23, 0.30 HC & HIV: -0.38, 0.004* ILEUM: -0.31, 0.36 RC: -0.44, 0.03* LC: -0.41, 0.07	HC: 0.03, 0.85 HIV: -0.023, 0.30 HC & HIV: 0.09, 0.51 ILEUM: 0.35, 0.29 RC: -0.19, 0.40 LC: 0.11, 0.65
CCR5	HC: 0.27, 0.14 HIV: -0.24, 0.28 HC & HIV: 0.11, 0.42 ILEUM: 0.28, 0.40 RC: 0.09, 0.67 LC: -0.01, 0.95	HC: -0.06, 0.75 HIV: 0.28, 0.20 HC & HIV: -0.28, 0.04* ILEUM: -0.11, 0.74 RC: -0.37, 0.08 LC: -0.31, 0.18	HC: -0.08, 0.65 HIV: -0.31, 0.15 HC & HIV: 0.11, 0.43 ILEUM: 0.25, 0.45 RC: -0.02, 0.93 LC: 0.11, 0.64	CLDN1	HC: 0.26, 0.17 HIV: -0.26, 0.24 HC & HIV: 0.12, 0.37 ILEUM: 0.26, 0.44 RC: 0.10, 0.64 LC: -0.04, 0.88	HC: -0.03, 0.87 HIV: -0.10, 0.65 HC & HIV: -0.24, 0.08 ILEUM: -0.12, 0.73 RC: -0.32, 0.14 LC: -0.34, 0.14	HC: 0.02, 0.90 HIV: -0.01, 0.98 HC & HIV: 0.17, 0.23 ILEUM: 0.21, 0.53 RC: 0.05, 0.81 LC: 0.28, 0.23
CCL5	HC: 0.22, 0.25 HIV: -0.33, 0.12 HC & HIV: -0.001, 0.99 ILEUM: 0.24, 0.48 RC: -0.01, 0.00004 LC: -0.13, 0.58	HC: -0.27, 0.14 HIV: 0.22, 0.31 HC & HIV: -0.37, 0.01* ILEUM: -0.27, 0.42 RC: -0.51, 0.01* LC: -0.35, 0.13	HC: -0.04, 0.84 HIV: -0.24, 0.26 HC & HIV: 0.09, 0.54 ILEUM: 0.37, 0.26 RC: -0.14, 0.52 LC: 0.01, 0.98	CCL2	HC: 0.31, 0.09 HIV: 0.08, 0.72 HC & HIV: 0.21, 0.12 ILEUM: 0.31, 0.36 RC: 0.21, 0.33 LC: 0.12, 0.63	HC: 0.09, 0.63 HIV: 0.07, 0.77 HC & HIV: -0.15, 0.29 ILEUM: 0.001, 0.997 RC: -0.17, 0.44 LC: -0.20, 0.40	HC: -0.21, 0.26 HIV: -0.05, 0.81 HC & HIV: 0.11, 0.41 ILEUM: 0.19, 0.58 RC: 0.05, 0.84 LC: 0.17, 0.48
IL7R	HC: 0.24, 0.20 HIV: 0.01, 0.95 HC & HIV: 0.01, 0.31 ILEUM: 0.30, 0.38 RC: 0.24, 0.27 LC: -0.09, 0.01	HC: -0.15, 0.43 HIV: 0.24, 0.28 HC & HIV: -0.30, 0.03* ILEUM: -0.06, 0.86 RC: -0.49, 0.02* LC: -0.36, 0.12	HC: 0.03, 0.89 HIV: 0.02, 0.93 HC & HIV: 0.20, 0.16 ILEUM: 0.28, 0.40 RC: 0.14, 0.51 LC: 0.19, 0.42	TLR2	HC: 0.27, 0.14 HIV: 0.03, 0.88 HC & HIV: 0.17, 0.22 ILEUM: 0.29, 0.39 RC: 0.11, 0.64 LC: 0.15, 0.54	HC: 0.10, 0.59 HIV: 0.14, 0.52 HC & HIV: -0.13, 0.34 ILEUM: -0.02, 0.94 RC: -0.13, 0.57 LC: -0.15, 0.52	HC: -0.21, 0.26 HIV: -0.15, 0.49 HC & HIV: 0.08, 0.57 ILEUM: 0.26, 0.43 RC: -0.04, 0.85 LC: 0.05, 0.82
IL2	HC: 0.09, 0.61 HIV: -0.04, 0.86 HC & HIV: 0.01, 0.93 ILEUM: 0.15, 0.67 RC: -0.08, 0.70 LC: 0.05, 0.83	HC: -0.12, 0.53 HIV: 0.32, 0.13 HC & HIV: -0.27, 0.049* ILEUM: -0.15, 0.66 RC: -0.20, 0.37 LC: -0.38, 0.09	HC: -0.15, 0.42 HIV: -0.09, 0.69 HC & HIV: 0.13, 0.35 ILEUM: 0.26, 0.44 RC: -0.02, 0.94 LC: 0.23, 0.34	TLR7	HC: 0.24, 0.19 HIV: 0.06, 0.78 HC & HIV: 0.16, 0.24 ILEUM: 0.29, 0.39 RC: 0.12, 0.59 LC: 0.12, 0.62	HC: 0.19, 0.31 HIV: 0.42, 0.045* HC & HIV: -0.03, 0.81 ILEUM: 0.07, 0.83 RC: 0.01, 0.98 LC: -0.09, 0.72	HC: -0.15, 0.44 HIV: -0.21, 0.34 HC & HIV: 0.07, 0.60 ILEUM: 0.19, 0.58 RC: 0.03, 0.90 LC: 0.07, 0.78
DSG3	HC: 0.20, 0.28 HIV: -0.04, 0.85 HC & HIV: 0.09, 0.50 ILEUM: 0.24, 0.48 RC: 0.04, 0.87 LC: 0.03, 0.89	HC: -0.11, 0.54 HIV: 0.37, 0.08 HC & HIV: -0.27, 0.05 ILEUM: -0.03, 0.92 RC: -0.39, 0.07 LC: 0.27, 0.26	HC: -0.06, 0.77 HIV: -0.25, 0.26 HC & HIV: 0.09, 0.50 ILEUM: 0.28, 0.40 RC: 0.04, 0.86 LC: 0.04, 0.85	TLR5	HC: 0.29, 0.11 HIV: 0.30, 0.17 HC & HIV: 0.24, 0.08 ILEUM: 0.29, 0.39 RC: 0.24, 0.27 LC: 0.19, 0.43	HC: 0.23, 0.21 HIV: 0.01, 0.98 HC & HIV: -0.02, 0.88 ILEUM: 0.07, 0.83 RC: 0.02, 0.93 LC: -0.07, 0.76	HC: -0.25, 0.17 HIV: -0.004, 0.99 HC & HIV: 0.09, 0.54 ILEUM: 0.18, 0.60 RC: 0.10, 0.65 LC: 0.04, 0.88
TLR4	HC: 0.25, 0.18 HIV: -0.11, 0.63 HC & HIV: 0.14, 0.33 ILEUM: 0.25, 0.46 RC: 0.18, .42 LC: -0.04, 0.87	HC: -0.03, 0.88 HIV: 0.04, 0.87 HC & HIV: -0.22, 0.11 ILEUM: -0.02, 0.95 RC: -0.24, 0.27 LC: -0.33, 0.15	HC: -0.01, 0.97 HIV: -0.04, 0.87 HC & HIV: 0.15, 0.27 ILEUM: 0.18, 0.60 RC: 0.10, 0.66 LC: 0.24, 0.31	IL23A	HC: 0.23, 0.21 HIV: 0.12, 0.59 HC & HIV: 0.17, 0.23 ILEUM: 0.12, 0.74 RC: 0.25, 0.24 LC: 0.07, 0.77	HC: 0.05, 0.80 HIV: 0.15, 0.48 HC & HIV: -0.13, 0.35 ILEUM: -0.02, 0.95 RC: -0.08, 0.71 LC: -0.20, 0.39	HC: -0.13, 0.49 HIV: 0.17, 0.45 HC & HIV: 0.17, 0.23 ILEUM: 0.27, 0.42 RC: 0.16, 0.47 LC: 0.13, 0.59
IL22	HC: 0.26, 0.15 HIV: -0.01, 0.95 HC & HIV: 0.16, 0.24 ILEUM: 0.29, 0.40 RC: 0.17, 0.43 LC: 0.03, 0.89	HC: 0.01, 0.97 HIV: -0.12, 0.59 HC & HIV: -0.22, 0.11 ILEUM: -0.02, 0.95 RC: -0.17, 0.44 LC: -0.39, 0.09	HC: -0.06, 0.75 HIV: -0.07, 0.74 HC & HIV: 0.13, 0.33 ILEUM: 0.11, 0.74 RC: 0.10, 0.65 LC: 0.27, 0.24	CLDN4	HC: -0.29, 0.12 HIV: -0.09, 0.68 HC & HIV: -0.16, 0.25 ILEUM: -0.20, 0.56 RC: -0.07, 0.76 LC: -0.07, 0.76	HC: -0.17, 0.36 HIV: -0.38, 0.07 HC & HIV: 0.05, 0.74 ILEUM: -0.17, 0.63 RC: 0.09, 0.69 LC: -0.02, 0.94	HC: 0.32, 0.08 HIV: 0.30, 0.16 HC & HIV: 0.05, 0.71 ILEUM: 0.18, 0.59 RC: -0.002, 0.99 LC: -0.04, 0.86