**Supplementary Table 1. Medians and interquartile ranges of biomarker values by group (pg/mL unless indicated).**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **HIV-negative** | | | **HIV+, HAART-naïve** | | | **HIV-suppressed** | | | **Total** | | |
| **Percentile** | **25th** | **50th** | **75th** | **25th** | **50th** | **75th** | **25th** | **50th** | **75th** | **25th** | **50th** | **75th** |
| **BAFF** | 1,725.8 | 1,970.5 | 2,261.0 | 1,991.5 | 2,340.6 | 2,937.1 | 1,776.7 | 2,099.3 | 2,591.5 | 1,846.1 | 2,170.5 | 2,669.7 |
| **CCL11** | 1,293.5 | 1,795.4 | 2,510.2 | 1,349.2 | 1,794.1 | 2,410.5 | 1,310.0 | 1,852.4 | 2,581.7 | 1,326.7 | 1,818.2 | 2,492.6 |
| **CCL13** | 561.5 | 729.6 | 964.1 | 521.6 | 710.2 | 965.4 | 632.7 | 850.1 | 1,140.5 | 569.5 | 766.1 | 1,032.9 |
| **CCL17** | 346.2 | 504.8 | 784.5 | 283.8 | 439.0 | 697.3 | 334.9 | 526.8 | 870.0 | 312.2 | 482.8 | 777.9 |
| **CCL2** | 383.8 | 517.5 | 675.6 | 467.1 | 594.8 | 761.1 | 432.8 | 578.6 | 734.8 | 439.3 | 573.8 | 733.9 |
| **CCL4** | 90.4 | 135.4 | 192.0 | 65.7 | 94.1 | 135.9 | 96.1 | 137.9 | 193.3 | 78.6 | 116.5 | 169.4 |
| **CRP1** | 0.4 | 0.9 | 2.1 | 0.5 | 1.1 | 2.5 | 0.6 | 1.3 | 3.1 | 0.5 | 1.2 | 2.7 |
| **CXCL10** | 87.8 | 128.1 | 208.8 | 205.9 | 336.9 | 569.8 | 143.5 | 216.1 | 323.5 | 145.1 | 237.1 | 410.7 |
| **CXCL13** | 242.9 | 292.2 | 345.6 | 285.8 | 342.1 | 405.4 | 225.2 | 273.6 | 336.1 | 250.2 | 306.0 | 368.5 |
| **GM-CSF** | 0.5 | 0.8 | 1.4 | 0.5 | 0.7 | 1.1 | 0.5 | 0.7 | 1.1 | 0.5 | 0.7 | 1.1 |
| **IFN-γ** | 0.8 | 1.2 | 1.7 | 1.0 | 1.4 | 2.2 | 0.8 | 1.3 | 1.8 | 0.9 | 1.3 | 2.0 |
| **IL-10** | 1.9 | 3.2 | 6.9 | 2.5 | 4.0 | 7.8 | 1.7 | 2.6 | 4.4 | 2.0 | 3.3 | 6.0 |
| **IL-12p70** | 1.2 | 2.3 | 6.3 | 1.2 | 2.1 | 4.6 | 1.0 | 1.7 | 3.3 | 1.1 | 1.9 | 4.2 |
| **IL-1β** | 0.2 | 0.4 | 0.7 | 0.3 | 0.4 | 0.6 | 0.3 | 0.4 | 0.6 | 0.3 | 0.4 | 0.6 |
| **IL-2** | 0.4 | 0.6 | 1.0 | 0.5 | 0.7 | 1.1 | 0.4 | 0.6 | 0.9 | 0.4 | 0.6 | 1.0 |
| **IL-6** | 0.6 | 0.8 | 1.4 | 0.6 | 0.9 | 1.4 | 0.7 | 1.0 | 1.6 | 0.6 | 0.9 | 1.5 |
| **IL-8** | 8.6 | 12.8 | 23.6 | 8.1 | 12.1 | 20.6 | 9.8 | 14.4 | 25.8 | 8.8 | 13.1 | 23.2 |
| **sCD142** | 18.3 | 21.1 | 24.7 | 20.8 | 24.4 | 29.0 | 21.6 | 25.6 | 30.7 | 20.5 | 24.2 | 29.0 |
| **sCD27** | 7,523.5 | 9,003.2 | 11,231.8 | 11,320.9 | 14,481.5 | 19,047.6 | 8,246.3 | 10,255.2 | 13,210.1 | 8,892.0 | 11,558.0 | 15,729.9 |
| **sGP1302** | 2.3 | 2.5 | 2.8 | 2.2 | 2.5 | 2.8 | 2.4 | 2.8 | 3.2 | 2.3 | 2.6 | 3.0 |
| **sIL-2Rα** | 1,158.1 | 1,397.3 | 1,762.6 | 1,598.3 | 2,046.7 | 2,731.5 | 1,117.8 | 1,401.7 | 1,804.9 | 1,272.5 | 1,635.2 | 2,223.1 |
| **sIL-6R2** | 0.4 | 0.5 | 0.6 | 0.5 | 0.6 | 0.7 | 0.4 | 0.5 | 0.6 | 0.4 | 0.5 | 0.6 |
| **sTNFR2** | 1,830.8 | 2,238.3 | 2,788.0 | 2,557.0 | 3,276.3 | 4,333.5 | 2,103.8 | 2,602.8 | 3,364.6 | 2,179.0 | 2,771.2 | 3,733.0 |
| **TNF-α** | 6.6 | 8.2 | 10.3 | 8.9 | 11.4 | 15.4 | 7.3 | 9.3 | 12.6 | 7.6 | 9.9 | 13.5 |

**1** mg/mL.

**2** µg/mL.

**Supplementary Table 2. Analysis 1: estimated coefficients and 99.7% confidence intervals for unadjusted generalized gamma models, by biomarker and exposure category.**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **HIV-negative**  **(reference)** | | | | | | | | |
|  |  | **LL** | **UL** |  | **LL** | **UL** |  | **LL** | **UL** |
| **BAFF** | 7.54 | 7.51 | 7.57 | -1.47 | -1.57 | -1.37 | -0.58 | -0.82 | -0.35 |
| **CCL11** | 7.50 | 7.40 | 7.59 | -0.70 | -0.80 | -0.61 | 0.03 | -0.30 | 0.36 |
| **CCL13** | 6.60 | 6.51 | 6.69 | -0.87 | -0.96 | -0.77 | 0.04 | -0.32 | 0.40 |
| **CCL17** | 6.30 | 6.17 | 6.42 | -0.44 | -0.55 | -0.34 | 0.15 | -0.21 | 0.51 |
| **CCL2** | 6.27 | 6.19 | 6.36 | -0.91 | -1.01 | -0.82 | 0.24 | -0.10 | 0.58 |
| **CCL4** | 4.83 | 4.71 | 4.95 | -0.43 | -0.57 | -0.28 | -0.18 | -0.58 | 0.21 |
| **CRP** | 0.11 | -0.08 | 0.31 | 0.29 | 0.20 | 0.38 | 0.38 | 0.10 | 0.66 |
| **CXCL10** | 4.69 | 4.60 | 4.79 | -0.50 | -0.61 | -0.38 | -0.83 | -1.08 | -0.58 |
| **CXCL13** | 5.65 | 5.61 | 5.69 | -1.05 | -1.22 | -0.88 | -0.05 | -0.31 | 0.22 |
| **GM-CSF** | -0.83 | -1.00 | -0.66 | -0.23 | -0.42 | -0.04 | -1.34 | -1.79 | -0.88 |
| **IFN-γ** | -0.35 | -0.50 | -0.20 | -0.35 | -0.48 | -0.22 | -0.83 | -1.25 | -0.40 |
| **IL-10** | 0.76 | 0.64 | 0.89 | -0.14 | -0.27 | -0.02 | -1.41 | -1.70 | -1.12 |
| **IL-12p70** | 0.27 | 0.08 | 0.46 | 0.10 | -0.03 | 0.24 | -1.38 | -1.69 | -1.07 |
| **IL-1β** | -1.57 | -1.74 | -1.40 | -0.01 | -0.14 | 0.13 | -0.74 | -1.03 | -0.44 |
| **IL-2** | -0.85 | -1.01 | -0.69 | -0.16 | -0.29 | -0.03 | -0.71 | -1.07 | -0.35 |
| **IL-6** | -0.35 | -0.44 | -0.25 | -0.34 | -0.45 | -0.23 | -0.79 | -1.06 | -0.53 |
| **IL-8** | 2.25 | 2.15 | 2.34 | -0.41 | -0.53 | -0.29 | -1.41 | -1.68 | -1.14 |
| **sCD14** | 14.57 | 14.53 | 14.61 | -1.34 | -1.45 | -1.24 | 0.04 | -0.24 | 0.32 |
| **sCD27** | 9.04 | 8.99 | 9.09 | -1.20 | -1.30 | -1.11 | -0.67 | -0.92 | -0.42 |
| **sGP130** | 12.42 | 12.39 | 12.45 | -1.58 | -1.72 | -1.44 | -0.22 | -0.53 | 0.09 |
| **sIL-2Rα** | 7.18 | 7.13 | 7.23 | -1.17 | -1.28 | -1.07 | -0.64 | -0.90 | -0.38 |
| **sIL-6R** | 10.83 | 10.78 | 10.88 | -1.23 | -1.37 | -1.08 | 0.34 | -0.02 | 0.70 |
| **sTNFR2** | 7.63 | 7.58 | 7.69 | -1.13 | -1.23 | -1.03 | -0.69 | -0.97 | -0.41 |
| **TNF-α** | 1.97 | 1.92 | 2.03 | -0.97 | -1.08 | -0.87 | -0.92 | -1.19 | -0.65 |

LL=99.7% confidence interval lower limit. UL = 99.7% confidence interval upper limit.

**Supplementary Table 2, continued. Analysis 1: estimated marginal coefficients and 99.7% confidence intervals for unadjusted generalized gamma models, by biomarker and exposure category.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **HIV+ HAART-naïve**  **(marginal coefficients)** | | | | | | | | | **HIV-suppressed**  **(marginal coefficients)** | | | | | | | | |
|  |  | **LL** | **UL** |  | **LL** | **UL** |  | **LL** | **UL** |  | **LL** | **UL** |  | **LL** | **UL** |  | **LL** | **UL** |
| **BAFF** | ***0.14*** | 0.09 | 0.19 | ***0.30*** | 0.15 | 0.46 | ***-0.35*** | -0.68 | -0.02 | 0.04 | 0.00 | 0.09 | ***0.21*** | 0.08 | 0.34 | -0.18 | -0.48 | 0.12 |
| **CCL11** | -0.01 | -0.12 | 0.10 | -0.09 | -0.21 | 0.02 | -0.10 | -0.49 | 0.29 | 0.02 | -0.10 | 0.14 | 0.02 | -0.09 | 0.13 | -0.01 | -0.39 | 0.38 |
| **CCL13** | -0.04 | -0.13 | 0.05 | ***0.13*** | 0.03 | 0.23 | -0.02 | -0.31 | 0.27 | ***0.16*** | 0.05 | 0.26 | 0.04 | -0.08 | 0.15 | 0.03 | -0.37 | 0.43 |
| **CCL17** | -0.15 | -0.30 | 0.01 | 0.10 | -0.02 | 0.23 | 0.03 | -0.42 | 0.49 | 0.00 | -0.16 | 0.16 | 0.11 | -0.01 | 0.23 | -0.12 | -0.53 | 0.29 |
| **CCL2** | ***0.11*** | 0.02 | 0.20 | 0.00 | -0.10 | 0.11 | -0.30 | -0.63 | 0.03 | ***0.12*** | 0.02 | 0.22 | 0.02 | -0.10 | 0.14 | 0.06 | -0.34 | 0.45 |
| **CCL4** | ***-0.33*** | -0.47 | -0.20 | -0.03 | -0.19 | 0.13 | 0.02 | -0.41 | 0.46 | -0.01 | -0.15 | 0.13 | -0.02 | -0.19 | 0.14 | -0.23 | -0.67 | 0.20 |
| **CRP** | 0.03 | -0.20 | 0.26 | -0.08 | -0.19 | 0.03 | ***-0.39*** | -0.72 | -0.07 | 0.22 | -0.02 | 0.46 | -0.06 | -0.17 | 0.06 | ***-0.37*** | -0.71 | -0.03 |
| **CXCL10** | ***1.07*** | 0.93 | 1.22 | ***0.21*** | 0.08 | 0.34 | ***0.58*** | 0.27 | 0.90 | ***0.60*** | 0.48 | 0.72 | 0.08 | -0.06 | 0.21 | ***0.47*** | 0.17 | 0.78 |
| **CXCL13** | ***0.15*** | 0.10 | 0.21 | -0.02 | -0.21 | 0.16 | -0.19 | -0.51 | 0.12 | ***-0.06*** | -0.12 | 0.00 | 0.06 | -0.14 | 0.25 | -0.07 | -0.42 | 0.28 |
| **GM-CSF** | -0.05 | -0.25 | 0.14 | -0.02 | -0.24 | 0.19 | 0.33 | -0.20 | 0.85 | -0.10 | -0.30 | 0.11 | 0.02 | -0.21 | 0.25 | 0.29 | -0.23 | 0.81 |
| **IFN-γ** | ***0.38*** | 0.21 | 0.55 | 0.13 | -0.02 | 0.27 | 0.33 | -0.13 | 0.79 | 0.10 | -0.08 | 0.27 | 0.11 | -0.05 | 0.26 | 0.26 | -0.23 | 0.74 |
| **IL-10** | ***0.33*** | 0.17 | 0.48 | -0.09 | -0.24 | 0.06 | 0.29 | -0.05 | 0.63 | -0.06 | -0.21 | 0.09 | -0.13 | -0.29 | 0.02 | ***0.45*** | 0.09 | 0.81 |
| **IL-12p70** | 0.03 | -0.18 | 0.23 | -0.14 | -0.28 | 0.00 | 0.13 | -0.20 | 0.46 | -0.17 | -0.40 | 0.05 | ***-0.18*** | -0.34 | -0.03 | 0.30 | -0.09 | 0.68 |
| **IL-1β** | -0.02 | -0.22 | 0.18 | -0.07 | -0.23 | 0.09 | 0.02 | -0.34 | 0.37 | -0.01 | -0.22 | 0.19 | -0.11 | -0.27 | 0.06 | -0.08 | -0.44 | 0.28 |
| **IL-2** | ***0.32*** | 0.14 | 0.49 | -0.12 | -0.27 | 0.02 | 0.28 | -0.13 | 0.69 | 0.00 | -0.18 | 0.18 | -0.03 | -0.18 | 0.12 | 0.13 | -0.27 | 0.53 |
| **IL-6** | 0.07 | -0.05 | 0.18 | -0.04 | -0.18 | 0.09 | 0.15 | -0.16 | 0.45 | ***0.15*** | 0.03 | 0.26 | 0.00 | -0.13 | 0.13 | 0.00 | -0.30 | 0.29 |
| **IL-8** | 0.03 | -0.09 | 0.15 | 0.01 | -0.19 | 0.21 | 0.37 | -0.04 | 0.77 | ***0.17*** | 0.05 | 0.28 | 0.01 | -0.15 | 0.16 | 0.11 | -0.22 | 0.45 |
| **sCD14** | ***0.14*** | 0.09 | 0.18 | 0.11 | -0.02 | 0.23 | -0.11 | -0.44 | 0.21 | ***0.19*** | 0.14 | 0.24 | ***0.14*** | 0.01 | 0.27 | -0.07 | -0.40 | 0.27 |
| **sCD27** | ***0.47*** | 0.39 | 0.54 | ***0.25*** | 0.13 | 0.36 | 0.11 | -0.25 | 0.46 | ***0.10*** | 0.03 | 0.17 | ***0.19*** | 0.06 | 0.31 | -0.09 | -0.41 | 0.22 |
| **sGP130** | -0.01 | -0.04 | 0.03 | 0.01 | -0.15 | 0.16 | -0.07 | -0.42 | 0.27 | ***0.08*** | 0.04 | 0.12 | 0.10 | -0.06 | 0.26 | -0.14 | -0.51 | 0.22 |
| **sIL-2Rα** | ***0.40*** | 0.32 | 0.47 | ***0.23*** | 0.10 | 0.36 | 0.18 | -0.15 | 0.52 | 0.00 | -0.07 | 0.06 | ***0.16*** | 0.03 | 0.29 | 0.07 | -0.26 | 0.39 |
| **sIL-6R** | ***0.12*** | 0.06 | 0.18 | ***0.04*** | -0.12 | 0.21 | 0.00 | -0.41 | 0.41 | -0.01 | -0.07 | 0.06 | ***0.03*** | -0.15 | 0.20 | 0.03 | -0.43 | 0.48 |
| **sTNFR2** | ***0.39*** | 0.31 | 0.47 | ***0.19*** | 0.06 | 0.32 | 0.10 | -0.26 | 0.46 | ***0.15*** | 0.08 | 0.22 | 0.12 | 0.00 | 0.25 | -0.02 | -0.35 | 0.31 |
| **TNF-α** | ***0.39*** | 0.32 | 0.46 | 0.11 | -0.01 | 0.24 | ***0.42*** | 0.11 | 0.74 | ***0.10*** | 0.04 | 0.17 | 0.10 | -0.03 | 0.22 | -0.13 | -0.44 | 0.17 |

LL=99.7% confidence interval lower limit. UL = 99.7% confidence interval upper limit. Bold italics indicate statistical significance (p<0.002).

**Supplementary Table 3. Analysis 1: estimated coefficients and p-values for adjusted generalized gamma models, by biomarker.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **HIV+ HAART-naïve vs. HIV-negative (ref.)** | | | **HIV-suppressed**  **vs. HIV-negative (ref.)** | | | **HIV-suppressed**  **vs. HIV+, HAART-naïve (alternate ref.)\*** | | | **Location parameter (ref.)** | | **Log scale parameter**  **(constant)** | | **Shape parameter (constant)** | |
|  |  | ***P*** |  |  | ***p*** |  |  | ***p*** |  |  | ***p*** |  | ***p*** |  | ***p*** |
| **BAFF** | ***0.171*** | ***0.000*** | ***19%*** | ***0.055*** | ***0.000*** | ***6%*** | ***-0.125*** | ***0.000*** | ***-12%*** | ***7.484*** | ***0.000*** | ***-0.305*** | ***0.000*** | ***-0.825*** | ***0.000*** |
| **CCL11** | -0.061 | 0.005 | -6% | -0.039 | 0.119 | -4% | 0.012 | 0.631 | 1% | ***7.609*** | ***0.000*** | ***-0.971*** | ***0.000*** | ***-0.171*** | ***0.000*** |
| **CCL13** | -0.006 | 0.763 | -1% | ***0.086*** | ***0.000*** | ***9%*** | ***0.094*** | ***0.000*** | ***10%*** | ***6.633*** | ***0.000*** | ***-0.820*** | ***0.000*** | 0.055 | 0.472 |
| **CCL17** | -0.073 | 0.025 | -7% | 0.080 | 0.023 | 8% | ***0.150*** | ***0.000*** | ***16%*** | ***6.100*** | ***0.000*** | ***-0.821*** | ***0.000*** | 0.132 | 0.038 |
| **CCL2** | ***0.122*** | ***0.000*** | ***13%*** | 0.048 | 0.016 | 5% | ***-0.082*** | ***0.000*** | ***-8%*** | ***6.382*** | ***0.000*** | ***-0.227*** | ***0.000*** | -0.037 | 0.467 |
| **CCL4** | ***-0.290*** | ***0.000*** | ***-25%*** | 0.035 | 0.301 | 4% | ***0.335*** | ***0.000*** | ***40%*** | ***4.749*** | ***0.000*** | ***-0.390*** | ***0.000*** | ***-0.267*** | ***0.000*** |
| **CRP** | ***0.304*** | ***0.000*** | ***36%*** | ***0.334*** | ***0.000*** | ***40%*** | 0.014 | 0.792 | 1% | -0.151 | 0.031 | ***-1.573*** | ***0.000*** | -0.028 | 0.509 |
| **CXCL10** | ***0.970*** | ***0.000*** | ***164%*** | ***0.429*** | ***0.000*** | ***54%*** | ***-0.533*** | ***0.000*** | ***-41%*** | ***4.799*** | ***0.000*** | ***0.192*** | ***0.000*** | ***-0.275*** | ***0.000*** |
| **CXCL13** | ***0.199*** | ***0.000*** | ***22%*** | -0.022 | 0.196 | -2% | ***-0.234*** | ***0.000*** | ***-21%*** | ***5.592*** | ***0.000*** | ***-0.268*** | ***0.000*** | ***-0.144*** | ***0.002*** |
| **GM-CSF** | ***-0.186*** | ***0.000*** | ***-17%*** | ***-0.170*** | ***0.000*** | ***-16%*** | 0.007 | 0.872 | 1% | ***-0.527*** | ***0.000*** | ***-0.465*** | ***0.000*** | ***-1.018*** | ***0.000*** |
| **IFN-γ** | ***0.295*** | ***0.000*** | ***34%*** | 0.023 | 0.570 | 2% | ***-0.261*** | ***0.000*** | ***-23%*** | ***-0.367*** | ***0.000*** | ***-1.032*** | ***0.000*** | ***-0.629*** | ***0.000*** |
| **IL-10** | ***0.286*** | ***0.000*** | ***33%*** | -0.102 | 0.007 | -10% | ***-0.379*** | ***0.000*** | ***-32%*** | ***0.696*** | ***0.000*** | ***-1.044*** | ***0.000*** | ***-1.233*** | ***0.000*** |
| **IL-12p70** | -0.012 | 0.792 | -1% | ***-0.198*** | ***0.000*** | ***-18%*** | ***-0.167*** | ***0.001*** | ***-15%*** | ***0.327*** | ***0.000*** | -0.442 | 0.100 | ***-1.235*** | ***0.000*** |
| **IL-1β** | -0.016 | 0.743 | -2% | 0.007 | 0.895 | 1% | 0.016 | 0.734 | 2% | ***-1.459*** | ***0.000*** | ***-0.427*** | ***0.000*** | ***-0.756*** | ***0.000*** |
| **IL-2** | ***0.240*** | ***0.000*** | ***27%*** | -0.074 | 0.077 | -7% | ***-0.322*** | ***0.000*** | ***-28%*** | ***-0.500*** | ***0.000*** | ***-0.197*** | ***0.000*** | ***-0.508*** | ***0.000*** |
| **IL-6** | ***0.129*** | ***0.000*** | ***14%*** | 0.089 | 0.003 | 9% | -0.036 | 0.218 | -4% | ***-0.371*** | ***0.000*** | ***-0.085*** | ***0.000*** | ***-0.763*** | ***0.000*** |
| **IL-8** | 0.001 | 0.967 | 0% | ***0.093*** | ***0.001*** | ***10%*** | 0.079 | 0.005 | 8% | ***2.475*** | ***0.000*** | ***-0.889*** | ***0.000*** | ***-1.225*** | ***0.000*** |
| **sCD14** | ***0.164*** | ***0.000*** | ***18%*** | ***0.182*** | ***0.000*** | ***20%*** | 0.006 | 0.666 | 1% | ***14.500*** | ***0.000*** | ***-0.039*** | ***0.000*** | -0.055 | 0.158 |
| **sCD27** | ***0.479*** | ***0.000*** | ***62%*** | ***0.106*** | ***0.000*** | ***11%*** | ***-0.382*** | ***0.000*** | ***-32%*** | ***9.038*** | ***0.000*** | ***-1.288*** | ***0.000*** | ***-0.575*** | ***0.000*** |
| **sGP130** | 0.024 | 0.010 | 2% | ***0.094*** | ***0.000*** | ***10%*** | ***0.067*** | ***0.000*** | ***7%*** | ***12.400*** | ***0.000*** | ***-0.400*** | ***0.000*** | ***-0.285*** | ***0.000*** |
| **sIL-2Rα** | ***0.361*** | ***0.000*** | ***43%*** | -0.007 | 0.677 | -1% | ***-0.374*** | ***0.000*** | ***-31%*** | ***7.180*** | ***0.000*** | ***-1.266*** | ***0.000*** | ***-0.527*** | ***0.000*** |
| **sIL-6R** | ***0.117*** | ***0.000*** | ***12%*** | -0.015 | 0.365 | -1% | ***-0.129*** | ***0.000*** | ***-12%*** | ***10.800*** | ***0.000*** | ***-1.232*** | ***0.000*** | ***0.343*** | ***0.000*** |
| **sTNFR2** | ***0.400*** | ***0.000*** | ***49%*** | ***0.134*** | ***0.000*** | ***14%*** | ***-0.272*** | ***0.000*** | ***-24%*** | ***7.651*** | ***0.000*** | ***-1.052*** | ***0.000*** | ***-0.618*** | ***0.000*** |
| **TNF-α** | ***0.316*** | ***0.000*** | ***37%*** | ***0.112*** | ***0.000*** | ***12%*** | ***-0.205*** | ***0.000*** | ***-19%*** | ***1.990*** | ***0.000*** | ***-1.024*** | ***0.000*** | ***-0.818*** | ***0.000*** |

Red=significantly (p<0.002) higher biomarker values, blue = significantly lower. Results from generalized gamma models with scale and shape parameters held constant. refers to relative percentile, or percent higher/lower than reference for any given percentile of the estimated distribution. Bold italics indicate statistically significant (p<0.002).

\* The contrast between HIV-suppressed and HIV+ HAART-naïve is provided for comparative purposes.

**Supplementary Table 3 (continued). Analysis 1: estimated coefficients and p-values for adjusted generalized gamma models, by biomarker.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **10 years of age older/younger than 45 (ref.)** | | | **Nonwhite race vs. white (ref.)** | | | **Smoker vs. nonsmoker (ref.)** | | | **HCV-infected vs. uninfected (ref.)** | | | **Obese vs. BMI ≤30 (ref.)** | | |
|  |  | ***p*** |  |  | ***p*** |  |  | ***p*** |  |  | ***p*** |  |  | ***p*** |  |
| **BAFF** | ***0.025*** | ***0.001*** | ***3%*** | ***-0.100*** | ***0.000*** | ***-9%*** | ***0.072*** | ***0.000*** | ***7%*** | ***0.160*** | ***0.000*** | ***17%*** | 0.028 | 0.012 | 3% |
| **CCL11** | ***0.070*** | ***0.000*** | ***7%*** | ***-0.371*** | ***0.000*** | ***-31%*** | ***0.098*** | ***0.000*** | ***10%*** | ***-0.184*** | ***0.000*** | ***-17%*** | -0.052 | 0.027 | -5% |
| **CCL13** | ***0.083*** | ***0.000*** | ***9%*** | 0.085 | ***0.001*** | 9% | -0.041 | 0.075 | -4% | ***-0.144*** | ***0.000*** | ***-13%*** | 0.001 | 0.955 | 0% |
| **CCL17** | 0.016 | 0.356 | 2% | ***0.391*** | ***0.000*** | ***48%*** | ***0.183*** | ***0.000*** | ***20%*** | ***-0.199*** | ***0.001*** | ***-18%*** | -0.040 | 0.244 | -4% |
| **CCL2** | ***0.057*** | ***0.000*** | ***6%*** | ***-0.350*** | ***0.000*** | ***-30%*** | -0.014 | 0.427 | -1% | 0.020 | 0.513 | 2% | 0.045 | 0.016 | 5% |
| **CCL4** | ***0.050*** | ***0.002*** | ***5%*** | ***0.166*** | ***0.000*** | ***18%*** | -0.002 | 0.957 | 0% | 0.043 | 0.387 | 4% | ***0.123*** | ***0.000*** | ***13%*** |
| **CRP** | ***0.168*** | ***0.000*** | ***18%*** | 0.048 | 0.474 | 5% | ***0.381*** | ***0.000*** | ***46%*** | ***-0.745*** | ***0.000*** | ***-53%*** | ***0.443*** | ***0.000*** | ***56%*** |
| **CXCL10** | ***0.071*** | ***0.000*** | ***7%*** | -0.036 | 0.293 | -4% | ***-0.147*** | ***0.000*** | ***-14%*** | ***0.862*** | ***0.000*** | ***137%*** | 0.049 | 0.173 | 5% |
| **CXCL13** | -0.012 | 0.113 | -1% | ***0.061*** | ***0.002*** | ***6%*** | 0.004 | 0.781 | 0% | ***0.137*** | ***0.000*** | ***15%*** | -0.011 | 0.514 | -1% |
| **GM-CSF** | -0.033 | 0.138 | -3% | ***-0.166*** | ***0.002*** | ***-15%*** | 0.000 | 0.991 | 0% | 0.180 | 0.025 | 20% | -0.012 | 0.794 | -1% |
| **IFN-γ** | 0.002 | 0.903 | 0% | -0.036 | 0.395 | -4% | -0.032 | 0.396 | -3% | 0.159 | 0.010 | 17% | 0.007 | 0.859 | 1% |
| **IL-10** | ***-0.060*** | ***0.002*** | ***-6%*** | -0.063 | 0.151 | -6% | 0.075 | 0.064 | 8% | ***0.455*** | ***0.000*** | ***58%*** | 0.042 | 0.323 | 4% |
| **IL-12p70** | -0.052 | 0.034 | -5% | ***-0.237*** | ***0.000*** | ***-21%*** | ***0.156*** | ***0.002*** | ***17%*** | -0.024 | 0.754 | -2% | 0.046 | 0.343 | 5% |
| **IL-1β** | -0.024 | 0.326 | -2% | 0.043 | 0.399 | 4% | -0.026 | 0.560 | -3% | 0.109 | 0.163 | 12% | 0.124 | 0.012 | 13% |
| **IL-2** | 0.051 | 0.007 | 5% | -0.077 | 0.063 | -7% | -0.034 | 0.309 | -3% | ***0.255*** | ***0.000*** | ***29%*** | -0.007 | 0.868 | -1% |
| **IL-6** | ***0.129*** | ***0.000*** | ***14%*** | 0.062 | 0.072 | 6% | ***0.150*** | ***0.000*** | ***16%*** | ***0.204*** | ***0.000*** | ***23%*** | ***0.192*** | ***0.000*** | ***21%*** |
| **IL-8** | ***0.102*** | ***0.000*** | ***11%*** | -0.039 | 0.215 | -4% | ***0.131*** | ***0.000*** | ***14%*** | 0.062 | 0.124 | 6% | 0.000 | 0.997 | 0% |
| **sCD14** | ***0.039*** | ***0.000*** | ***4%*** | ***-0.071*** | ***0.000*** | ***-7%*** | 0.029 | 0.022 | 3% | ***0.075*** | ***0.000*** | ***8%*** | -0.022 | 0.083 | -2% |
| **sCD27** | ***0.045*** | ***0.000*** | ***5%*** | 0.011 | 0.629 | 1% | 0.023 | 0.204 | 2% | ***0.298*** | ***0.000*** | ***35%*** | -0.014 | 0.530 | -1% |
| **sGP130** | ***0.016*** | ***0.000*** | ***2%*** | ***-0.053*** | ***0.000*** | ***-5%*** | ***-0.034*** | ***0.000*** | ***-3%*** | ***0.197*** | ***0.000*** | ***22%*** | 0.024 | 0.016 | 2% |
| **sIL-2Rα** | 0.014 | 0.121 | 1% | ***-0.113*** | ***0.000*** | ***-11%*** | 0.032 | 0.060 | 3% | ***0.284*** | ***0.000*** | ***33%*** | -0.016 | 0.420 | -2% |
| **sIL-6R** | 0.008 | 0.298 | 1% | ***-0.153*** | ***0.000*** | ***-14%*** | -0.023 | 0.096 | -2% | ***0.160*** | ***0.000*** | ***17%*** | 0.015 | 0.343 | 2% |
| **sTNFR2** | ***0.059*** | ***0.000*** | ***6%*** | ***-0.094*** | ***0.000*** | ***-9%*** | 0.019 | 0.226 | 2% | ***0.347*** | ***0.000*** | ***41%*** | 0.036 | 0.038 | 4% |
| **TNF-α** | 0.030 | 0.004 | 3% | -0.061 | 0.020 | -6% | 0.008 | 0.702 | 1% | ***0.149*** | ***0.002*** | ***16%*** | 0.057 | 0.005 | 6% |

Red=significantly (p<0.002) higher biomarker values, blue = significantly lower. Results from generalized gamma models with scale and shape parameters held constant. refers to relative percentile, or percent higher/lower than reference for any given percentile of the estimated distribution. Bold italics indicate statistically significant (p<0.002).

**Supplementary Table 3 (continued). Analysis 1: estimated coefficients and p-values for adjusted generalized gamma models, by biomarker.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Diabetes vs. no diabetes (ref.)** | | | **Baltimore vs. Chicago (ref.)** | | | **Pittsburgh vs. Chicago (ref.)** | | | **Los Angeles vs. Chicago (ref.)** | | |
|  |  | ***p*** |  |  | ***p*** |  |  | ***p*** |  |  | ***p*** |  |
| **BAFF** | 0.026 | 0.215 | 3% | ***0.076*** | ***0.000*** | ***8%*** | 0.044 | 0.016 | 5% | -0.025 | 0.225 | -2% |
| **CCL11** | 0.018 | 0.597 | 2% | 0.059 | 0.089 | 6% | -0.045 | 0.180 | -4% | ***-0.107*** | ***0.001*** | ***-10%*** |
| **CCL13** | 0.070 | 0.056 | 7% | 0.056 | 0.097 | 6% | -0.017 | 0.586 | -2% | -0.041 | 0.218 | -4% |
| **CCL17** | -0.046 | 0.391 | -4% | 0.053 | 0.356 | 5% | 0.102 | 0.050 | 11% | -0.062 | 0.204 | -6% |
| **CCL2** | 0.033 | 0.231 | 3% | -0.040 | 0.157 | -4% | -0.056 | 0.032 | -5% | ***-0.092*** | ***0.000*** | ***-9%*** |
| **CCL4** | -0.007 | 0.863 | -1% | 0.041 | 0.401 | 4% | -0.079 | 0.102 | -8% | 0.026 | 0.568 | 3% |
| **CRP** | 0.230 | 0.015 | 26% | -0.089 | 0.261 | -9% | -0.089 | 0.224 | -8% | -0.169 | 0.018 | -16% |
| **CXCL10** | 0.111 | 0.007 | 12% | ***-0.155*** | ***0.001*** | ***-14%*** | 0.097 | 0.039 | 10% | ***0.189*** | ***0.000*** | ***21%*** |
| **CXCL13** | ***-0.112*** | ***0.000*** | ***-11%*** | 0.047 | 0.033 | 5% | -0.011 | 0.595 | -1% | -0.003 | 0.892 | 0% |
| **GM-CSF** | 0.115 | 0.089 | 12% | ***-0.265*** | ***0.000*** | ***-23%*** | ***-0.205*** | ***0.002*** | ***-19%*** | ***-0.273*** | ***0.000*** | ***-24%*** |
| **IFN-γ** | -0.028 | 0.672 | -3% | -0.079 | 0.189 | -8% | 0.126 | 0.022 | 13% | ***0.219*** | ***0.000*** | ***24%*** |
| **IL-10** | 0.095 | 0.068 | 10% | ***-0.263*** | ***0.000*** | ***-23%*** | 0.085 | 0.113 | 9% | ***0.183*** | ***0.000*** | ***20%*** |
| **IL-12p70** | 0.064 | 0.351 | 7% | -0.185 | 0.013 | -17% | 0.016 | 0.824 | 2% | -0.048 | 0.503 | -5% |
| **IL-1β** | -0.022 | 0.777 | -2% | ***-0.328*** | ***0.000*** | ***-28%*** | -0.104 | 0.138 | -10% | -0.148 | 0.018 | -14% |
| **IL-2** | 0.059 | 0.326 | 6% | ***-0.297*** | ***0.000*** | ***-26%*** | ***-0.317*** | ***0.000*** | ***-27%*** | ***-0.405*** | ***0.000*** | ***-33%*** |
| **IL-6** | ***0.181*** | ***0.000*** | ***20%*** | ***-0.165*** | ***0.000*** | ***-15%*** | 0.004 | 0.909 | 0% | ***-0.138*** | ***0.001*** | ***-13%*** |
| **IL-8** | 0.093 | 0.016 | 10% | ***-0.285*** | ***0.000*** | ***-25%*** | -0.090 | 0.015 | -9% | ***-0.388*** | ***0.000*** | ***-32%*** |
| **sCD14** | ***0.066*** | ***0.001*** | ***7%*** | 0.052 | 0.004 | 5% | 0.040 | 0.018 | 4% | -0.030 | 0.103 | -3% |
| **sCD27** | 0.065 | 0.027 | 7% | -0.007 | 0.801 | -1% | -0.002 | 0.934 | 0% | -0.047 | 0.074 | -5% |
| **sGP130** | ***0.068*** | ***0.000*** | ***7%*** | -0.008 | 0.564 | -1% | 0.002 | 0.863 | 0% | ***-0.052*** | ***0.000*** | ***-5%*** |
| **sIL-2Rα** | 0.058 | 0.023 | 6% | 0.053 | 0.030 | 5% | 0.005 | 0.851 | 0% | -0.021 | 0.407 | -2% |
| **sIL-6R** | 0.024 | 0.268 | 2% | 0.005 | 0.811 | 1% | 0.029 | 0.178 | 3% | 0.026 | 0.190 | 3% |
| **sTNFR2** | ***0.139*** | ***0.000*** | ***15%*** | -0.021 | 0.400 | -2% | -0.009 | 0.713 | -1% | -0.055 | 0.016 | -5% |
| **TNF-α** | ***0.089*** | ***0.002*** | ***9%*** | 0.011 | 0.736 | 1% | 0.043 | 0.158 | 4% | -0.060 | 0.049 | -6% |

Red=significantly (p<0.002) higher biomarker values, blue = significantly lower. Results from generalized gamma models with scale and shape parameters held constant. refers to relative percentile, or percent higher/lower than reference for any given percentile of the estimated distribution. Bold italics indicate statistically significant (p<0.002).

**Supplementary Table 4. Analysis 2: Estimated coefficients and p-values for generalized gamma models, by biomarker and duration of HIV suppression.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **First year after HIV suppression** | | | **Each year following one year after HIV suppression** | | | **Location parameter (ref.)** | | **Log scale parameter**  **(constant)** | | **Shape parameter (constant)** | |
|  |  | ***P*** |  |  | ***p*** |  |  | ***p*** |  | ***p*** |  | ***p*** |
| **BAFF** | ***-0.169*** | ***0.000*** | ***-16%*** | 0.010 | 0.013 | 1% | ***7.704*** | ***0.000*** | ***-1.220*** | ***0.000*** | ***-0.891*** | ***0.000*** |
| **CCL11** | 0.078 | 0.005 | 8% | 0.018 | 0.005 | 2% | ***7.452*** | ***0.000*** | ***-0.757*** | ***0.000*** | -0.042 | 0.658 |
| **CCL13** | ***0.098*** | ***0.000*** | ***10%*** | 0.008 | 0.195 | 1% | ***6.673*** | ***0.000*** | ***-0.842*** | ***0.000*** | 0.151 | 0.077 |
| **CCL17** | 0.002 | 0.965 | 0% | -0.013 | 0.182 | -1% | ***6.235*** | ***0.000*** | ***-0.359*** | ***0.000*** | -0.037 | 0.699 |
| **CCL2** | 0.002 | 0.945 | 0% | 0.001 | 0.910 | 0% | ***6.439*** | ***0.000*** | ***-0.922*** | ***0.000*** | 0.184 | 0.080 |
| **CCL4** | ***0.141*** | ***0.000*** | ***15%*** | 0.010 | 0.225 | 1% | ***4.695*** | ***0.000*** | ***-0.436*** | ***0.000*** | ***-0.293*** | ***0.001*** |
| **CRP** | -0.081 | 0.317 | -8% | -0.012 | 0.411 | -1% | ***0.309*** | ***0.000*** | ***0.169*** | ***0.000*** | -0.167 | 0.052 |
| **CXCL10** | ***-0.558*** | ***0.000*** | ***-43%*** | 0.015 | 0.098 | 1% | ***5.750*** | ***0.000*** | ***-0.383*** | ***0.000*** | ***-0.358*** | ***0.000*** |
| **CXCL13** | ***-0.232*** | ***0.000*** | ***-21%*** | 0.013 | 0.014 | 1% | ***5.748*** | ***0.000*** | ***-0.977*** | ***0.000*** | -0.136 | 0.192 |
| **GM-CSF** | -0.043 | 0.486 | -4% | 0.011 | 0.415 | 1% | ***-0.891*** | ***0.000*** | ***-0.310*** | ***0.000*** | ***-1.157*** | ***0.000*** |
| **IFN-γ** | ***-0.441*** | ***0.000*** | ***-36%*** | 0.028 | 0.016 | 3% | 0.098 | 0.031 | ***-0.304*** | ***0.000*** | ***-0.644*** | ***0.000*** |
| **IL-10** | ***-0.298*** | ***0.000*** | ***-26%*** | 0.026 | 0.040 | 3% | ***0.979*** | ***0.000*** | ***-0.287*** | ***0.000*** | ***-0.845*** | ***0.000*** |
| **IL-12p70** | -0.178 | 0.002 | -16% | 0.015 | 0.310 | 1% | ***0.261*** | ***0.000*** | ***-0.137*** | ***0.001*** | ***-1.096*** | ***0.000*** |
| **IL-1β** | -0.036 | 0.612 | -4% | -0.009 | 0.550 | -1% | ***-1.499*** | ***0.000*** | ***-0.198*** | ***0.000*** | ***-0.929*** | ***0.000*** |
| **IL-2** | ***-0.301*** | ***0.000*** | ***-26%*** | 0.021 | 0.058 | 2% | ***-0.627*** | ***0.000*** | ***-0.315*** | ***0.000*** | ***-0.657*** | ***0.000*** |
| **IL-6** | -0.141 | 0.006 | -13% | 0.014 | 0.202 | 1% | ***-0.126*** | ***0.000*** | ***-0.367*** | ***0.000*** | ***-0.728*** | ***0.000*** |
| **IL-8** | -0.094 | 0.100 | -9% | 0.012 | 0.335 | 1% | ***2.468*** | ***0.000*** | ***-0.418*** | ***0.000*** | ***-1.206*** | ***0.000*** |
| **sCD14** | -0.033 | 0.067 | -3% | 0.006 | 0.126 | 1% | ***14.772*** | ***0.000*** | ***-1.250*** | ***0.000*** | -0.108 | 0.217 |
| **sCD27** | ***-0.368*** | ***0.000*** | ***-31%*** | 0.007 | 0.172 | 1% | ***9.473*** | ***0.000*** | ***-1.016*** | ***0.000*** | ***-0.745*** | ***0.000*** |
| **sGP130** | 0.002 | 0.878 | 0% | 0.002 | 0.406 | 0% | ***12.481*** | ***0.000*** | ***-1.510*** | ***0.000*** | ***-0.403*** | ***0.000*** |
| **sIL-2Rα** | ***-0.333*** | ***0.000*** | ***-28%*** | 0.006 | 0.189 | 1% | ***7.498*** | ***0.000*** | ***-0.954*** | ***0.000*** | ***-0.474*** | ***0.000*** |
| **sIL-6R** | ***-0.148*** | ***0.000*** | ***-14%*** | 0.003 | 0.550 | 0% | ***10.988*** | ***0.000*** | ***-1.152*** | ***0.000*** | ***0.548*** | ***0.000*** |
| **sTNFR2** | ***-0.263*** | ***0.000*** | ***-23%*** | -0.001 | 0.872 | 0% | ***8.061*** | ***0.000*** | ***-0.970*** | ***0.000*** | ***-0.581*** | ***0.000*** |
| **TNF-α** | ***-0.236*** | ***0.000*** | ***-21%*** | 0.007 | 0.311 | 1% | ***2.342*** | ***0.000*** | ***-0.843*** | ***0.000*** | ***-0.802*** | ***0.000*** |

Red=significantly (p<0.002) higher biomarker values, blue = significantly lower. Results from generalized gamma models with scale and shape parameters held constant. Spline regression with knot at one year. refers to relative percentile, or percent higher/lower than reference for any given percentile of the estimated distribution. Bold italics indicate statistically significant (p<0.002).