Additional file 1:

Supplement table 1: Cytokine/Chemokine detection percentage (Those marked do not exceed 20% detection and are excluded from the analysis).

| **Cytokine**  **-Chemokine** | Group | n | % | CI 95% | |
| --- | --- | --- | --- | --- | --- |
| Low | High |
| BDNF | Mild | 33 | 97.1 | 82.95 | 99.85 |
| Moderate | 25 | 96.2 | 78.42 | 99.8 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 32 | 100 | 86.66 | 100 |
| Control | 24 | 85.7 | 66.44 | 95.32 |
| Total | 130 | 95.6 | 90.23 | 98.19 |
| EGF | Mild | 16 | 47.1 | 30.16 | 64.6 |
| Moderate | 9 | 34.6 | 17.94 | 55.64 |
| Severe | 6 | 37.5 | 16.28 | 64.13 |
| Critical | 11 | 34.4 | 19.17 | 53.23 |
| Control | 2 | 7.1 | 1.25 | 24.96 |
| Total | 44 | 32.4 | 24.73 | 40.99 |
| Eotaxin | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 26 | 100 | 83.98 | 100 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 32 | 100 | 86.66 | 100 |
| Control | 28 | 100 | 84.98 | 100 |
| Total | 136 | 100 | 96.58 | 100 |
| **FGF2** | **Mild** | **3** | **8.8** | **2.31** | **24.81** |
| **Moderate** | **6** | **23.1** | **9.75** | **44.08** |
| **Severe** | **2** | **12.5** | **2.2** | **39.59** |
| **Critical** | **1** | **3.1** | **0.16** | **18** |
| **Control** | **0** | **0** | **0** | **15.02** |
| **Total** | **12** | **8.8** | **4.85** | **15.23** |
| GMCSF | Mild | 19 | 55.9 | 38.09 | 72.38 |
| Moderate | 15 | 57.7 | 37.19 | 76.03 |
| Severe | 11 | 68.8 | 41.48 | 87.87 |
| Critical | 15 | 46.9 | 29.51 | 64.97 |
| Control | 0 | 0 | 0 | 15.02 |
| Total | 60 | 44.1 | 35.7 | 52.87 |
| GROa | Mild | 14 | 41.2 | 25.13 | 59.17 |
| Moderate | 12 | 46.2 | 27.14 | 66.25 |
| Severe | 8 | 50 | 28 | 72 |
| Critical | 9 | 28.1 | 14.4 | 46.98 |
| Control | 0 | 0 | 0 | 15.02 |
| Total | 43 | 31.6 | 24.07 | 40.23 |
| HGF | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 26 | 100 | 83.98 | 100 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 32 | 100 | 86.66 | 100 |
| Control | 28 | 100 | 84.98 | 100 |
| Total | 136 | 100 | 96.58 | 100 |
| IFNa | Mild | 20 | 58.8 | 40.83 | 74.87 |
| Moderate | 11 | 42.3 | 23.97 | 62.81 |
| Severe | 7 | 43.8 | 20.75 | 69.45 |
| Critical | 11 | 34.4 | 19.17 | 53.23 |
| Control | 1 | 3.6 | 0.19 | 20.24 |
| Total | 50 | 36.8 | 28.79 | 45.5 |
| IFNg | Mild | 12 | 35.3 | 20.3 | 53.53 |
| Moderate | 9 | 34.6 | 17.94 | 55.64 |
| Severe | 6 | 37.5 | 16.28 | 64.13 |
| Critical | 17 | 53.1 | 35.03 | 70.49 |
| Control | 0 | 0 | 0 | 15.02 |
| Total | 44 | 32.4 | 24.73 | 40.99 |
| IL1a | Mild | 23 | 67.6 | 49.37 | 82.02 |
| Moderate | 18 | 69.2 | 48.1 | 84.91 |
| Severe | 12 | 75 | 47.41 | 91.67 |
| Critical | 26 | 81.2 | 62.96 | 92.14 |
| Control | 7 | 25 | 11.43 | 45.22 |
| Total | 86 | 63.2 | 54.5 | 71.21 |
| IL1b | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 26 | 100 | 83.98 | 100 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 28 | 87.5 | 70.07 | 95.92 |
| Control | 6 | 21.4 | 9.03 | 41.46 |
| Total | 110 | 80.9 | 73.06 | 86.92 |
| IL10 | Mild | 17 | 50 | 34.07 | 65.93 |
| Moderate | 17 | 65.4 | 44.36 | 82.06 |
| Severe | 11 | 68.8 | 41.48 | 87.87 |
| Critical | 21 | 65.6 | 46.77 | 80.83 |
| Control | 1 | 3.6 | 0.19 | 20.24 |
| Total | 67 | 49.3 | 40.64 | 57.93 |
| **IL12p70** | **Mild** | **5** | **14.7** | **5.54** | **31.83** |
| **Moderate** | **6** | **23.1** | **9.75** | **44.08** |
| **Severe** | **4** | **25** | **8.33** | **52.59** |
| **Critical** | **7** | **21.9** | **9.94** | **40.44** |
| **Control** | **0** | **0** | **0** | **15.02** |
| **Total** | **22** | **16.2** | **10.63** | **23.69** |
| IL13 | Mild | 13 | 38.2 | 22.69 | 56.38 |
| Moderate | 10 | 38.5 | 20.91 | 59.27 |
| Severe | 6 | 37.5 | 16.28 | 64.13 |
| Critical | 8 | 25 | 12.13 | 43.75 |
| Control | 1 | 3.6 | 0.19 | 20.24 |
| Total | 38 | 27.9 | 20.76 | 36.4 |
| IL15 | Mild | 33 | 97.1 | 82.95 | 99.85 |
| Moderate | 26 | 100 | 83.98 | 100 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 28 | 87.5 | 70.07 | 95.92 |
| Control | 11 | 39.3 | 22.13 | 59.27 |
| Total | 114 | 83.8 | 76.31 | 89.37 |
| IL17a | Mild | 33 | 97.1 | 82.95 | 99.85 |
| Moderate | 26 | 100 | 83.98 | 100 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 30 | 93.8 | 77.78 | 98.91 |
| Control | 7 | 25 | 11.43 | 45.22 |
| Total | 112 | 82.4 | 74.68 | 88.15 |
| IL18 | Mild | 32 | 94.1 | 78.94 | 98.97 |
| Moderate | 25 | 96.2 | 78.42 | 99.8 |
| Severe | 15 | 93.8 | 67.71 | 99.67 |
| Critical | 31 | 96.9 | 82 | 99.84 |
| Control | 17 | 60.7 | 40.73 | 77.87 |
| Total | 120 | 88.2 | 81.32 | 92.92 |
| IL1RA | Mild | 32 | 94.1 | 78.94 | 98.97 |
| Moderate | 24 | 92.3 | 73.4 | 98.66 |
| Severe | 15 | 93.8 | 67.71 | 99.67 |
| Critical | 30 | 93.8 | 77.78 | 98.91 |
| Control | 4 | 14.3 | 4.68 | 33.56 |
| Total | 105 | 77.2 | 69.07 | 83.77 |
| IL2 | Mild | 31 | 91.2 | 75.19 | 97.69 |
| Moderate | 23 | 88.5 | 68.72 | 96.97 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 23 | 71.9 | 53.02 | 85.6 |
| Control | 5 | 17.9 | 6.77 | 37.58 |
| Total | 98 | 72.1 | 63.6 | 79.24 |
| **IL21** | **Mild** | **7** | **20.6** | **9.34** | **38.41** |
| **Moderate** | **7** | **26.9** | **12.35** | **48.05** |
| **Severe** | **3** | **18.8** | **4.97** | **46.31** |
| **Critical** | **5** | **15.6** | **5.9** | **33.55** |
| **Control** | **3** | **10.7** | **2.81** | **29.37** |
| **Total** | **25** | **18.4** | **12.46** | **26.13** |
| IL22 | Mild | 6 | 17.6 | 7.39 | 35.17 |
| Moderate | 6 | 23.1 | 9.75 | 44.08 |
| Severe | 3 | 18.8 | 4.97 | 46.31 |
| Critical | 12 | 37.5 | 21.66 | 56.25 |
| Control | 4 | 14.3 | 4.68 | 33.56 |
| Total | 31 | 22.8 | 16.23 | 30.93 |
| **IL23** | Mild | 4 | 11.8 | 3.84 | 28.39 |
| Moderate | 2 | 7.7 | 1.34 | 26.6 |
| Severe | 2 | 12.5 | 2.2 | 39.59 |
| Critical | 1 | 3.1 | 0.16 | 18 |
| Control | 0 | 0 | 0 | 15.02 |
| Total | 9 | 6.6 | 3.26 | 12.55 |
| **IL27** | **Mild** | **13** | **38.2** | **22.69** | **56.38** |
| **Moderate** | **8** | **30.8** | **15.09** | **51.9** |
| **Severe** | **4** | **25** | **8.33** | **52.59** |
| **Critical** | **8** | **25** | **12.13** | **43.75** |
| **Control** | **1** | **3.6** | **0.19** | **20.24** |
| **Total** | **34** | **25** | **18.15** | **33.29** |
| **IL31** | Mild | 3 | 8.8 | 2.31 | 24.81 |
| Moderate | 3 | 11.5 | 3.03 | 31.28 |
| Severe | 3 | 18.8 | 4.97 | 46.31 |
| Critical | 0 | 0 | 0 | 13.34 |
| Control | 0 | 0 | 0 | 15.02 |
| Total | 9 | 6.6 | 3.26 | 12.55 |
| IL4 | Mild | 9 | 26.5 | 13.51 | 44.65 |
| Moderate | 9 | 34.6 | 17.94 | 55.64 |
| Severe | 6 | 37.5 | 16.28 | 64.13 |
| Critical | 7 | 21.9 | 9.94 | 40.44 |
| Control | 0 | 0 | 0 | 15.02 |
| Total | 31 | 22.8 | 16.23 | 30.93 |
| IL5 | Mild | 16 | 47.1 | 30.16 | 64.6 |
| Moderate | 12 | 46.2 | 27.14 | 66.25 |
| Severe | 7 | 43.8 | 20.75 | 69.45 |
| Critical | 14 | 43.8 | 26.84 | 62.12 |
| Control | 1 | 3.6 | 0.19 | 20.24 |
| Total | 50 | 36.8 | 28.79 | 45.5 |
| IL6 | Mild | 27 | 79.4 | 61.59 | 90.66 |
| Moderate | 20 | 76.9 | 55.92 | 90.25 |
| Severe | 14 | 87.5 | 60.41 | 97.8 |
| Critical | 19 | 59.4 | 40.79 | 75.78 |
| Control | 2 | 7.1 | 1.25 | 24.96 |
| Total | 82 | 60.3 | 51.53 | 68.47 |
| IL7 | Mild | 32 | 94.1 | 78.94 | 98.97 |
| Moderate | 22 | 84.6 | 64.27 | 94.95 |
| Severe | 15 | 93.8 | 67.71 | 99.67 |
| Critical | 31 | 96.9 | 82 | 99.84 |
| Control | 4 | 14.3 | 4.68 | 33.56 |
| Total | 104 | 76.5 | 68.28 | 83.13 |
| IL8 | Mild | 11 | 32.4 | 17.98 | 50.63 |
| Moderate | 9 | 34.6 | 17.94 | 55.64 |
| Severe | 8 | 50 | 28 | 72 |
| Critical | 11 | 34.4 | 19.17 | 53.23 |
| Control | 3 | 10.7 | 2.81 | 29.37 |
| Total | 42 | 30.9 | 23.4 | 39.46 |
| **IL9** | **Mild** | **1** | **2.9** | **0.15** | **17.05** |
| **Moderate** | **1** | **3.8** | **0.2** | **21.58** |
| **Severe** | **0** | **0** | **0** | **24.07** |
| **Critical** | **0** | **0** | **0** | **13.34** |
| **Control** | **0** | **0** | **0** | **15.02** |
| **Total** | **2** | **1.5** | **0.26** | **5.75** |
| IP1b | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 26 | 100 | 83.98 | 100 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 32 | 100 | 86.66 | 100 |
| Control | 28 | 100 | 84.98 | 100 |
| Total | 136 | 100 | 96.58 | 100 |
| IP10 | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 26 | 100 | 83.98 | 100 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 32 | 100 | 86.66 | 100 |
| Control | 28 | 100 | 84.98 | 100 |
| Total | 136 | 100 | 96.58 | 100 |
| LIF | Mild | 27 | 79.4 | 61.59 | 90.66 |
| Moderate | 17 | 65.4 | 44.36 | 82.06 |
| Severe | 10 | 62.5 | 35.87 | 83.72 |
| Critical | 21 | 65.6 | 46.77 | 80.83 |
| Control | 4 | 14.3 | 4.68 | 33.56 |
| Total | 79 | 58.1 | 49.32 | 66.39 |
| MCP1 | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 25 | 96.2 | 78.42 | 99.8 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 32 | 100 | 86.66 | 100 |
| Control | 27 | 96.4 | 79.76 | 99.81 |
| Total | 134 | 98.5 | 94.25 | 99.74 |
| MIP1a | Mild | 22 | 64.7 | 46.47 | 79.7 |
| Moderate | 19 | 73.1 | 51.95 | 87.65 |
| Severe | 13 | 81.2 | 53.69 | 95.03 |
| Critical | 18 | 56.2 | 37.88 | 73.16 |
| Control | 11 | 39.3 | 22.13 | 59.27 |
| Total | 83 | 61 | 52.27 | 69.16 |
| **NGFb** | **Mild** | **3** | **8.8** | **2.31** | **24.81** |
| **Moderate** | **0** | **0** | **0** | **16.02** |
| **Severe** | **2** | **12.5** | **2.2** | **39.59** |
| **Critical** | **4** | **12.5** | **4.08** | **29.93** |
| **Control** | **0** | **0** | **0** | **15.02** |
| Total | 9 | 6.6 | 3.26 | 12.55 |
| PDGFBB | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 26 | 100 | 83.98 | 100 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 32 | 100 | 86.66 | 100 |
| Control | 28 | 100 | 84.98 | 100 |
| Total | 136 | 100 | 96.58 | 100 |
| PIGF1 | Mild | 12 | 35.3 | 20.3 | 53.53 |
| Moderate | 6 | 23.1 | 9.75 | 44.08 |
| Severe | 10 | 62.5 | 35.87 | 83.72 |
| Critical | 23 | 71.9 | 53.02 | 85.6 |
| Control | 4 | 14.3 | 4.68 | 33.56 |
| Total | 55 | 40.4 | 32.22 | 49.21 |
| RANTES | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 26 | 100 | 83.98 | 100 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 32 | 100 | 86.66 | 100 |
| Control | 28 | 100 | 84.98 | 100 |
| Total | 136 | 100 | 96.58 | 100 |
| SCF | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 25 | 96.2 | 78.42 | 99.8 |
| Severe | 15 | 93.8 | 67.71 | 99.67 |
| Critical | 32 | 100 | 86.66 | 100 |
| Control | 25 | 89.3 | 70.63 | 97.19 |
| Total | 131 | 96.3 | 91.19 | 98.64 |
| SDF1a | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 24 | 92.3 | 73.4 | 98.66 |
| Severe | 15 | 93.8 | 67.71 | 99.67 |
| Critical | 32 | 100 | 86.66 | 100 |
| Control | 28 | 100 | 84.98 | 100 |
| Total | 133 | 97.8 | 93.19 | 99.43 |
| TNFa | Mild | 26 | 76.5 | 58.43 | 88.62 |
| Moderate | 17 | 65.4 | 44.36 | 82.06 |
| Severe | 15 | 93.8 | 67.71 | 99.67 |
| Critical | 23 | 71.9 | 53.02 | 85.6 |
| Control | 3 | 10.7 | 2.81 | 29.37 |
| Total | 84 | 61.8 | 53.01 | 69.85 |
| **TNFb** | **Mild** | **1** | **2.9** | **0.15** | **17.05** |
| **Moderate** | **0** | **0** | **0** | **16.02** |
| **Severe** | **0** | **0** | **0** | **24.07** |
| **Critical** | **0** | **0** | **0** | **13.34** |
| **Control** | **0** | **0** | **0** | **15.02** |
| **Total** | **1** | **0.7** | **0.04** | **4.64** |
| VEGFA | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 26 | 100 | 83.98 | 100 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 32 | 100 | 86.66 | 100 |
| Control | 28 | 100 | 84.98 | 100 |
| Total | 136 | 100 | 96.58 | 100 |
| VEGFD | Mild | 34 | 100 | 87.36 | 100 |
| Moderate | 26 | 100 | 83.98 | 100 |
| Severe | 16 | 100 | 75.93 | 100 |
| Critical | 31 | 96.9 | 82 | 99.84 |
| Control | 24 | 85.7 | 66.44 | 95.32 |
| Total | 131 | 96.3 | 91.19 | 98.64 |