



### Supplemental figure 1

Box plots of cytokine levels on the y-axis (Log<sub>2</sub> scale) in blood samples from health control and COVID-19 infection patients in 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> week of onset of symptom. The central horizontal line indicates the median of each distribution, upper and lower boundaries of the boxes indicate the 3<sup>rd</sup> and 1<sup>st</sup> quartiles.

**Supplemental Table 1: Dynamic changes of cytokines/chemokines in different period of infection**

	healthy control	time of infection (week)	of		P values <sup>1</sup>		
			mild	severe	mild v.s. health	severe v.s. health	mild v.s. severe
IP-10	44.71 (32.34-58.14)	1st	257.26 (112.14-409.06)	263.94 (180.68-565.80)	1.36E-08	4.39E-08	0.067
		2nd	163.50 (87.04-261.26)	1577.65 (175.28-)	6.13E-08	7.32E-07	5.31E-03
		3rd	81.30 (59.56-105.08)	145.42 (93.70-492.62)	4.69E-03	6.26E-05	0.02
		4th	68.94 (52.88-84.94)	151.68 (118.34-542.39)	0.082	1.13E-04	1.52E-03
MCP-1	70.96 (45.65-114.38)	1st	119.30 (99.74-199.86)	199.86 (111.5-307.34)	4.37E-04	1.92E-04	0.047
		2nd	98.36 (84.12-169.00)	274.66 (146.04-672.40)	5.61E-03	3.87E-05	8.62E-05
		3rd	119.94 (96.96-145.84)	167.28 (106.50-553.05)	3.37E-03	9.39E-04	0.136
		4th	95.05 (90.09-123.12)	142.59 (119.70-195.96)	0.021	8.57E-03	0.030
RANTES	358.36±123.43	1st	638.62±174.80	418.16±121.43	5.44E-07	0.157	1.43E-04
		2nd	640.36±177.73	464.82±136.40	3.09E-08	0.062	3.30E-03
		3rd	630.57±171.00	480.85±166.81	3.97E-07	0.076	0.017
		4th	654.14±162.86	502.52±132.39	1.39E-06	0.032	0.026
IL-1 RA	730.80 (325.11-1332.00)	1st	974.28 (543.13-1258.26)	1628.32 (993.72-2439.77)	0.353	0.022	0.037
		2nd	693.72 (402.30-1431.95)	1938.58 (1261.06-3447.48)	0.712	9.23E-03	3.78E-03
		3rd	1024.06 (896.34-1415.36)	1604.92 (1026.63-1981.27)	0.082	0.091	0.264
		4th	1022.59 (973.14-1072.04)	1274.60 (1119.52-2873.74)	0.550	0.044	0.254
IL-10	3.92 (2.21-6.02)	1st	3.68 (2.58-6.18)	6.82 (3.36-7.68)	0.477	0.046	0.055
		2nd	3.32 (2.14-5.22)	7.85 (4.34-14.23)	0.799	0.014	3.85E-03
		3rd	4.16 (3.52-6.48)	6.30 (3.52-9.96)	0.351	0.202	0.456

		4th	3.60 (2.80-4.84)	8.05 (3.88-13.94)	0.937	0.041	0.012
IL-12	6.68 (4.02-8.81)	1st	8.34 (6.94-9.60)	9.48 (6.78-13.18)	0.030	0.032	0.203
		2nd	7.87 (6.66-10.97)	9.18 (5.49-15.50)	0.084	0.172	0.600
		3rd	9.85 (7.34-11.43)	9.58 (6.44-16.94)	0.020	0.088	0.830
		4th	8.77 (6.09-10.88)	14.92 (9.85-21.32)	0.144	3.55E-03	6.29E-03
IL-6	77.78 (25.85-114.08)	1st	25.18 (21.26-41.82)	55.73 (31.62-103.22)	0.038	0.798	0.044
		2nd	57.42 (19.26-86.84)	34.53 (16.06-95.86)	0.238	0.391	0.907
		3rd	50.58 (32.75-65.81)	54.04 (8.62-132.55)	0.323	0.943	0.441
		4th	17.24 (9.69-56.89)	137.00 (20.34-319.84)	7.66E-03	0.137	4.38E-03
IL-17	42.50 (18.90-57.93)	1st	50.33 (22.88-75.82)	53.22 (32.86-107.42)	0.279	0.148	0.502
		2nd	48.88 (9.00-87.58)	56.04 (16.51-155.52)	0.908	0.570	0.566
		3rd	56.10 (32.09-96.09)	94.54 (20.93-165.14)	0.158	0.415	0.992
		4th	61.86 (41.62-81.88)	129.12 (84.64-255.37)	0.279	8.39E-04	0.032
Eotaxin	9.68 (7.43-13.05)	1st	10.50 (6.64-11.68)	13.56 (10.08-25.54)	0.792	0.049	0.033
		2nd	9.25 (6.22-12.15)	12.04 (5.84-19.50)	0.479	0.433	0.221
		3rd	14.85 (9.77-17.89)	21.11(13.38-33.67)	0.061	2.28E-04	9.16E-03
		4th	14.75 (9.84-17.45)	27.65 (14.78-40.52)	0.058	1.67E-04	0.016
GMCSF	110.99 (48.69-129.66)	1st	65.05 (34.92-123.11)	77.09 (34.02-171.22)	0.459	0.619	0.960
		2nd	79.84 (50.46-128.66)	78.47 (51.26-231.37)	0.532	0.872	0.602
		3rd	101.80 (73.27-135.58)	143.33 (89.13-185.04)	0.611	0.278	0.291
		4th	74.34 (52.06-113.14)	189.22 (55.75-337.86)	0.709	0.044	0.035
IFN $\gamma$ a	29.87 (11.08-44.79)	1st	23.48 (16.08-36.12)	30.44 (18.08-55.20)	0.743	0.465	0.150
		2nd	23.48 (15.42-45.56)	28.03 (20.42-62.28)	0.908	0.593	0.522
		3rd	29.02 (15.42-44.82)	18.75 (9.70-51.47)	0.842	0.924	0.959
		4th	29.72 (18.74-31.84)	74.07 (25.62-131.19)	0.888	0.067	9.55E-03
IL-13	23.77 (8.68-45.18)	1st	13.34 (7.68-20.18)	14.90 (11.87-30.66)	0.074	0.904	0.086

		2nd	13.40 (7.82-20.16)	15.38 (11.60-43.34)	0.137	0.916	0.297
		3rd	18.76 (11.20-27.08)	26.36 (9.58-32.41)	0.573	0.816	0.909
		4th	18.08 (9.46-20.63)	36.08 (13.01-61.08)	0.184	0.420	0.086
IL-15	29.35 (14.69-46.07)	1st	30.24 (17.98-41.90)	60.52 (33.98-98.31)	0.900	0.010	7.46E-03
		2nd	33.63 (13.46-55.04)	52.76 (23.94-91.60)	0.683	0.332	0.284
		3rd	41.92 (25.56-55.38)	60.52 (41.76-104.94)	0.085	0.020	0.077
		4th	40.51 (27.91-48.39)	55.80 (41.84-140.01)	0.095	0.011	0.016
IL-18	65.80 (37.36-171.66)	1st	68.96 (46.34-118.76)	85.78 (72.52-157.88)	0.980	0.298	0.117
		2nd	80.50 (50.02-118.76)	141.80 (86.22-194.77)	0.734	0.091	0.018
		3rd	85.78 (57.28-140.96)	95.82 (86.44-198.82)	0.462	0.138	0.141
		4th	84.00 (57.73-123.90)	123.73 (81.31-209.23)	0.691	0.192	0.104
IL-1beta	16.42 (6.46-26.96)	1st	22.58 (11.54-35.68)	29.08 (17.22-59.46)	0.245	0.013	0.096
		2nd	17.29 (9.13-41.78)	35.68 (24.34-115.56)	0.339	0.040	0.146
		3rd	32.68 (17.30-57.18)	25.89 (4.58-75.70)	0.028	0.562	0.391
		4th	34.22 (22.92-47.57)	47.18 (39.74-120.68)	0.017	8.77E-04	0.046
IL-2	42.84 (17.69-91.64)	1st	36.76 (28.47-54.40)	45.96 (24.98-70.42)	0.609	0.904	0.474
		2nd	29.64 (17.18-50.86)	38.96 (21.72-85.51)	0.229	0.956	0.346
		3rd	45.33 (28.12-59.58)	56.78 (23.98-75.99)	0.937	0.862	0.749
		4th	45.96 (34.02-57.88)	64.48 (42.43-109.42)	0.899	0.272	0.061
IL-27	227.85 (100.28-395.16)	1st	207.68 (118.10-292.58)	167.54 (123.22-529.68)	0.829	0.954	0.929
		2nd	227.98 (141.62-354.54)	227.98 (101.20-789.40)	0.905	0.409	0.497
		3rd	324.28 (159.56-422.12)	517.88 (128.60-650.61)	0.452	0.757	0.918
		4th	235.31 (167.28-373.48)	692.37 (212.74-1490.42)	0.759	0.026	0.034
IL-7	11.90 (7.19-20.13)	1st	16.32 (11.43-19.85)	14.22 (8.38-40.82)	0.631	0.409	0.598
		2nd	11.66 (6.73-21.60)	18.72 (2.83-28.95)	0.853	0.456	0.459
		3rd	19.76 (12.02-24.36)	10.94 (6.18-38.40)	0.044	0.589	0.156

		4th	15.56 (9.84-18.38)	27.76 (14.78-40.52)	0.921	7.00E-03	0.031
MIP-1beta	70.11 ±51.08	1st	68.61 ±31.90	35.56 ±24.99	0.441	0.074	6.94E-03
		2nd	64.50 ±21.25	79.07 ±52.70	0.490	0.568	0.301
		3rd	72.80 ±44.19	85.35 ±23.41	0.534	0.346	0.423
		4th	41.33 ±11.00	48.20 ±46.05	0.456	0.426	0.775
TNF-alpha	31.70 (13.83-40.53)	1st	14.18 (10.58-22.56)	17.76 (13.88-35.20)	0.144	0.776	0.353
		2nd	16.56 (7.02-36.40)	18.96 (12.68-50.95)	0.171	0.835	0.450
		3rd	20.16 (15.36-30.38)	18.37 (6.42-28.12)	0.745	0.192	0.152
		4th	19.56 (12.98-34.00)	39.44 (10.58-61.85)	0.551	0.625	0.330
IL-4	34.86 ±24.42	1st	32.51 ±22.71	69.70 ±65.16	0.84	0.081	0.22
		2nd	41.11 ±24.69	36.46 ±10.49	0.521	0.914	0.761
		3rd	50.71 ±53.49	68.9	0.396	0.197	0.753
		4th	55.50 ±17.61	103.79 ±37.91	0.185	2.53E-04	0.100