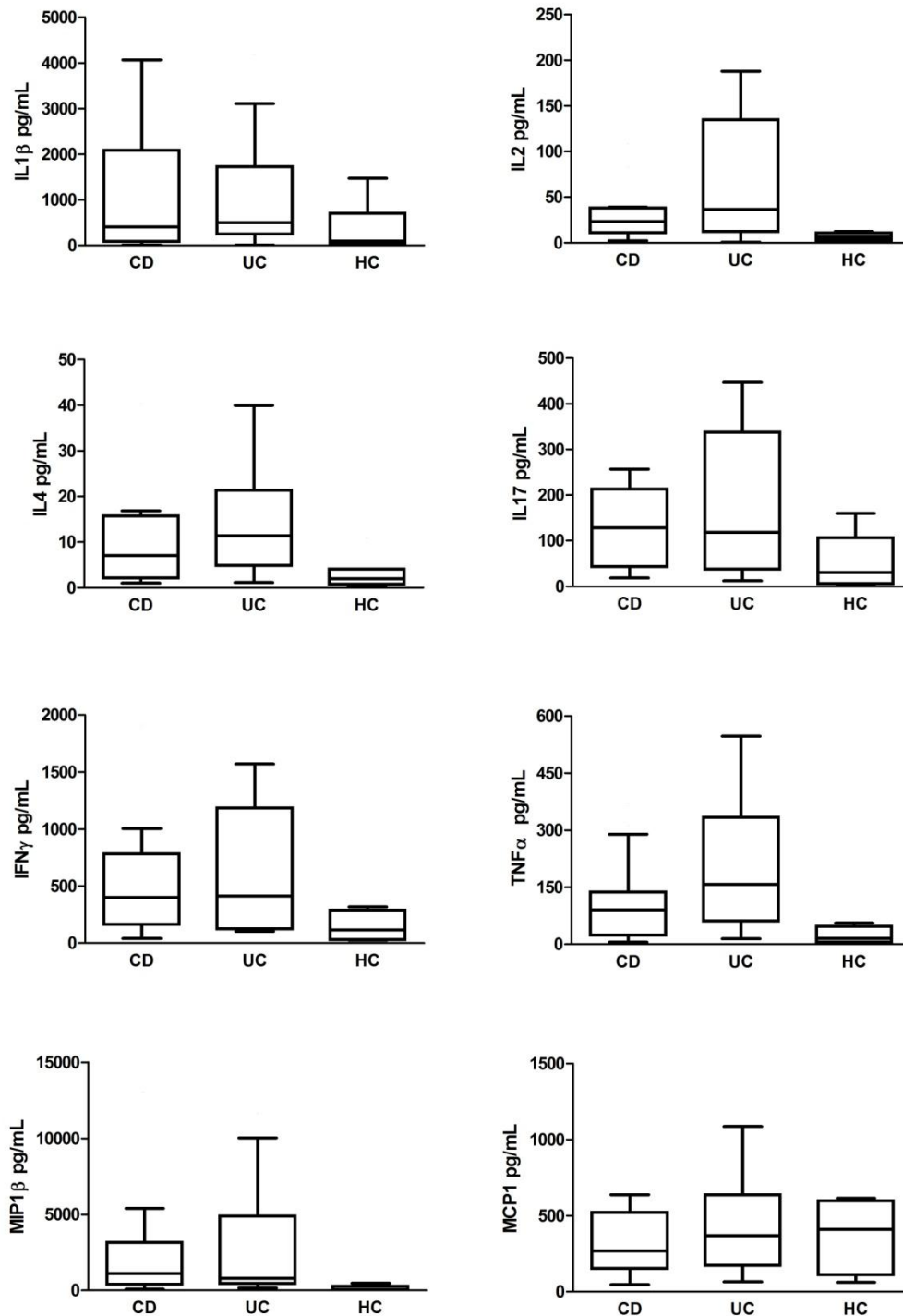
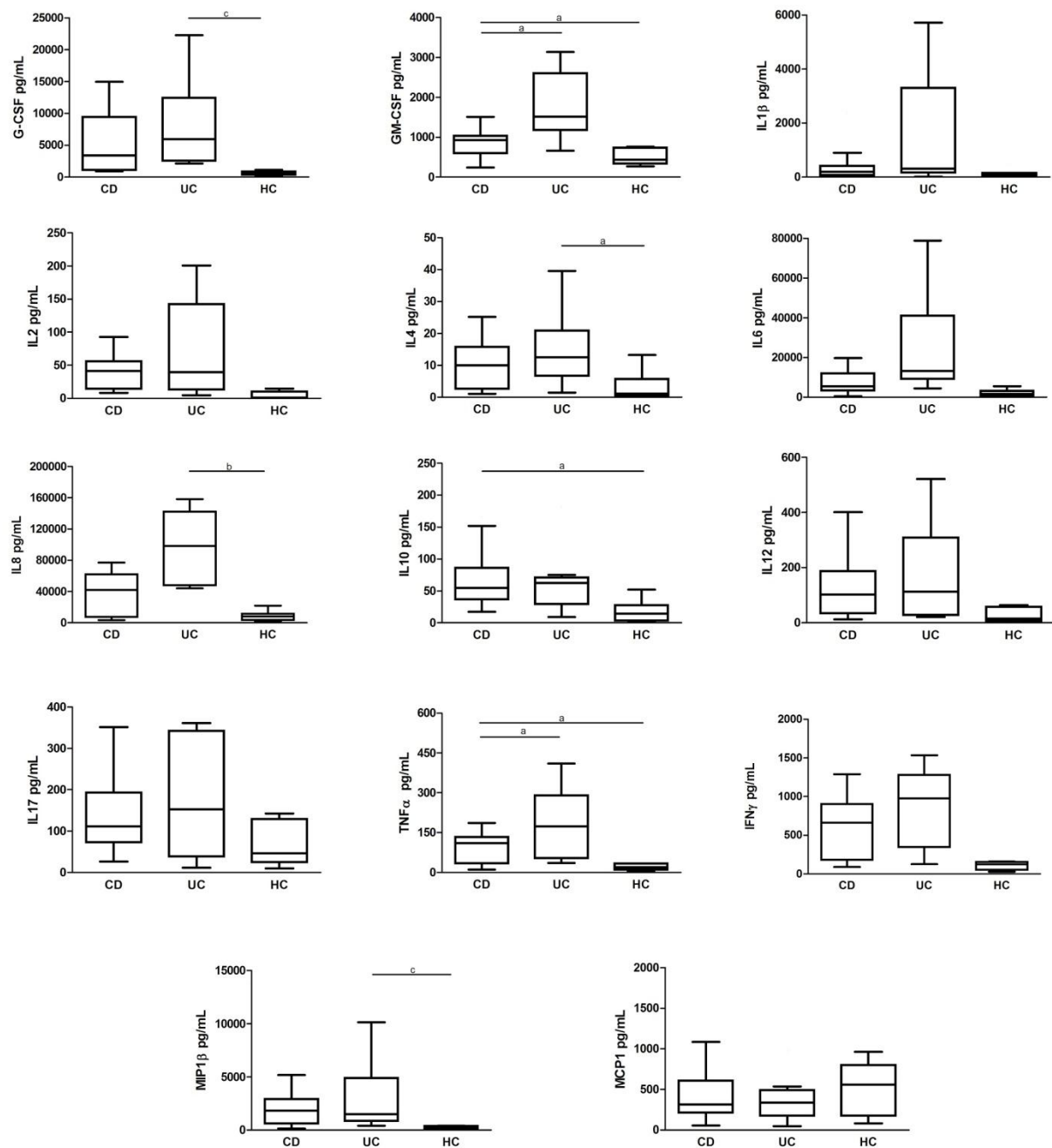


## SUPPLEMENTARY FIGURES



**Supplementary Figure 1: Basal levels of cytokine secretion by colonic biopsies from IBD patients.** Levels of cytokine secretion by colonic biopsies from IBD patients in active phase (Crohn's Disease, CD; Ulcerative Colitis, UC) and healthy controls (HC) in basal condition (Live Bacteria). No statistical significance was found.



**Supplementary Figure 2: Levels of cytokine secretion by colonic biopsies from IBD patients, in the presence of antibiotics.** Levels of cytokine secretion by colonic biopsies from IBD patients in active phase (Crohn's Disease, CD; Ulcerative Colitis, UC) and from healthy controls (HC) in the presence of antibiotic mixture (+PS). Statistical significances are denoted using alphabetical letters ( a= $p < 0.05$ ; b= $p < 0.01$ ; c= $p < 0.001$ ).

# SUPPLEMENTARY TABLES

**Supplementary Table 1. Clinical characteristics of patients suffering from Inflammatory Bowel Disease**

Clinical characteristics								Inflammatory markers		
PATIENT	SEX/AGE	DIAGNOSIS	AGE AT DIAGNOSIS	DISEASE ACTIVITY	THERAPIES	PUCAI/PCDAI	DISEASE LOCATION	CRP	ESR	FECAL CALPROTECTIN
01	M/17	UC	12	ACTIVE	AZA, 5-ASA	0	LEFT-SIDED UC	0.06	9	-
02	M/7	UC	6	ACTIVE	-	20	PANCOLITIS	0.82	47	1522
03	M/17	UC	17	ACTIVE	CIPX	45	LEFT-SIDED UC	0.4	10	-
04	F/14	UC	12	ACTIVE	5-ASA, CS	30	LEFT-SIDED UC	0.3	44	-
05	M/17	UC	13	ACTIVE	Sulfasalazine	25	PANCOLITIS	2.05	67	2060
06	F/15	UC	14	ACTIVE	CS, 5-ASA, AZA	40	LEFT-SIDED UC	0.04	33	2120
07	F/11	UC	2	ACTIVE	CS, 5-ASA, AZA	40	PANCOLITIS	0.59	108	1648
08	F/14	UC	9	ACTIVE	AZA	5	PANCOLITIS	0.26	94	33
09	M/17	UC	7	ACTIVE	AZA	5	PANCOLITIS	0.03	4	-
10	F/12	UC	7	ACTIVE	AZA 5-ASA	20	ULCERATIVE PROCTITIS	0.02	12	1746
11	M/12	UC	10	ACTIVE	5-ASA	20	ULCERATIVE PROCTITIS	0.03	6	21
12	M/18	UC	17	ACTIVE	5-ASA	65	LEFT-SIDED UC	0.16	17	-
13	M/18	UC	18	ACTIVE	5-ASA, MNZ	15	PANCOLITIS	0.18	3	-

Clinical characteristics								Inflammatory markers		
PATIENT	SEX/AGE	DIAGNOSIS	AGE AT DIAGNOSIS	DISEASE ACTIVITY	THERAPIES	PUCAI/PCDAI	DISEASE LOCATION	CRP	ESR	FECAL CALPROTECTIN
14	F/18	UC	17	ACTIVE	-	30	LEFT-SIDED UC	0.12	27	50
15	M/13	UC	11	ACTIVE	-	30	PANCOLITIS	0.19	31	1600
16	F/10	UC	9	REMISSION	5-ASA	5	LEFT-SIDED UC	0.01	4	602
17	F/14	UC	12	REMISSION	CS. 5-ASA	0	LEFT-SIDED UC	0.01	8	126
18	F/18	UC	13	REMISSION	AZA. 5-ASA	0	PANCOLITIS	0.06	13	-
19	M/17	UC	11	REMISSION	5-ASA	0	PANCOLITIS	0.11	10	124
20	M/10	UC	6	REMISSION	AZA. 5-ASA	0	PANCOLITIS	0.01	11	35
21	M/20	UC	17	REMISSION	5-ASA. IFX	0	LEFT-SIDED UC	0.06	6	-
22	F/24	UC	13	REMISSION	CS. 5-ASA. AZA	0	PANCOLITIS	0.02	6	-
23	M/13	CD	13	ACTIVE	-	15	PANENTERIC CD	3.1	92	1915
24	F/11	CD	9	ACTIVE	ADA	15	PANENTERIC CD	0.08	11	1080
25	F/10	CD	9	ACTIVE	IFX	2.5	PANENTERIC CD	0.53	35	-
26	F/13	CD	9	ACTIVE	ADA	10	PANENTERIC CD	0.71	66	-

Clinical characteristics								Inflammatory markers		
PATIENT	SEX/AGE	DIAGNOSIS	AGE AT DIAGNOSIS	DISEASE ACTIVITY	THERAPIES	PUCAI/PCDAI	DISEASE LOCATION	CRP	ESR	FECAL CALPROTECTIN
27	M/11	CD	9	ACTIVE	5-ASA	12.5	ILEOCOLONIC CD	0.4	27	475
28	M/10	CD	10	ACTIVE	CIPX	27.5	PANENTERIC CD	5.01	33	8688
29	M/15	CD	14	ACTIVE	-	0	PANENTERIC CD	0.04	5	0
30	M/10	CD	10	ACTIVE	MNZ	35	ILEOCOLONIC CD	2.88	51	2772
31	M/15	CD	12	ACTIVE	IFX	17.5	GASTRIC AND ILEOCOLONIC CD	2.64	38	1295
32	M/16	CD	12	ACTIVE	CS. SSZ	45	GASTRIC AND ILEOCOLONIC CD	4.9	75	-
33	F/11	CD	9	ACTIVE	-	32.5	PANENTERIC CD	2.96	120	1372
34	F/16	CD	11	ACTIVE	MTX. SSZ	40	ILEOCOLONIC CD	0.2	46	55483
35	M/11	CD	5	ACTIVE	IFX	25	ILEOCOLONIC CD	1.0	37	1050
36	F/10	CD	9	ACTIVE	-	25	GASTRIC AND ILEOCOLONIC CD	2.07	56	2079
37	F/11	CD	11	ACTIVE	CS	30	COLONIC CD	5.76	88	2083
38	F/11	CD	11	ACTIVE	IFX. SSZ	0	COLONIC CD	0.03	15	402
39	F/10	CD	10	ACTIVE	-	20	COLONIC CD	3.18	77	1477

Clinical characteristics								Inflammatory markers		
PATIENT	SEX/AGE	DIAGNOSIS	AGE AT DIAGNOSIS	DISEASE ACTIVITY	THERAPIES	PUCAI/PCDAI	DISEASE LOCATION	CRP	ESR	FECAL CALPROTECTIN
40	F/10	CD	9	ACTIVE	Thd, SSZ	30	GASTRIC AND ILEOCOLONIC CD	1.6	25	2175
41	M/6	CD	6	ACTIVE	-	20	COLITIS IN CGD	3.12	88	28311
42	M/7	CD	6	ACTIVE	5-ASA	17.5	COLITIS IN CGD	0.42	35	3305
43	M/7	CD	6	ACTIVE	MNZ	52.5	JEJUNAL ILEOCOLONIC CD	1.04	98	648
44	M/12	CD	10	ACTIVE	MNZ	17.5	PANENTERIC CD	0.19	41	807
45	M/16	CD	16	ACTIVE	MNZ, CIPX	17.5	PANENTERIC CD	2.19	34	1087
46	M/18	CD	15	REMISSION	IFX	10	PANENTERIC CD	0.35	18	151
47	M/11	CD	6	REMISSION	AZA	0	ILEOCOLONIC CD	0.03	8	-
48	M/7	CD	1	REMISSION	Thd	0	NASAL, COLONIC CD	0.05	13	-
49	F/16	APHTHOSIS, AUTOIMMUNE GASTRITIS	-	NORMAL COL	-	-	-	0.05	40	25
50	M/15	PREVIOUS INTESTINAL POLYP	-	NORMAL COL	-	-	-	0.14	5	-

Clinical characteristics								Inflammatory markers		
PATIENT	SEX/AGE	DIAGNOSIS	AGE AT DIAGNOSIS	DISEASE ACTIVITY	THERAPIES	PUCAI/PCDAI	DISEASE LOCATION	CRP	ESR	FECAL CALPROTECTIN
51	M/10	JUVENILE INTESTINAL POLYPOSIS	-	INTESTINAL POLYPS	-	-	COLON	-	-	-
52	M/11	FUNCTIONAL ABDOMINAL PAIN	-	NORMAL COL	-	-	-	0.24	39	-
53	M/3	JUVENILE INTESTINAL POLYP	-	INTESTINAL POLYPS	-	-	COLON	0.03	21	-
54	F/11	VIRAL INFECTION	-	NORMAL COL	-	-	-	4.86	110	22
55	F/4	FUNCTIONAL ABDOMINAL PAIN	-	NORMAL COL	-	-	-	0.03	19	6.5
56	F/10	FUNCTIONAL ABDOMINAL PAIN	-	NORMAL COL	-	-	-	0.09	8	-

M: Male; F: Female; CD: Crohn's disease; UC: Ulcerative colitis; AZA: azathioprine; ADA: Adalimumab; Thd: Thalidomide; 5-ASA: mesalamine; IFX: Infliximab; CS: corticosteroids; CIPX: ciprofloxacin; SSZ: sulfasalazine; MZN: metronidazole; COL: Colonoscopy.  
Age (year); CRP (mg/dl), ESR (mm/h); Fecal Calprotectin (mg/Kg)

**Supplementary Table 2. Clinical characteristics of patients suffering from Inflammatory Bowel Disease**

PATIENT	SEX/AGE	DIAGNOSIS	DISEASE ACTIVITY	BMI	BMI PERCENTILE
01	M/17	UC	ACTIVE	21	36
02	M/7	UC	ACTIVE	15.4	50
03	M/17	UC	ACTIVE	24	80
04	F/14	UC	ACTIVE	17.5	23
05	M/17	UC	ACTIVE	23	70
06	F/15	UC	ACTIVE	23.8	80
07	F/11	UC	ACTIVE	14	5
08	F/14	UC	ACTIVE	16.5	10
09	M/17	UC	ACTIVE	19.9	40
10	F/12	UC	ACTIVE	16.6	25
11	M/12	UC	ACTIVE	15.6	12
12	M/18	UC	ACTIVE	22.8	60
13	M/18	UC	ACTIVE	24.4	75
14	F/18	UC	ACTIVE	23.5	75
15	M/13	UC	ACTIVE	16.6	15
16	F/10	UC	REMISSION	12	1
17	F/14	UC	REMISSION	20.3	62
18	F/18	UC	REMISSION	24	75
19	M/17	UC	REMISSION	25.8	92
20	M/10	UC	REMISSION	17.5	65
21	M/20	UC	REMISSION	24	60
22	F/24	UC	REMISSION	21.5	50



PATIENT	SEX/AGE	DIAGNOSIS	DISEASE ACTIVITY	BMI	BMI PERCENTILE
23	M/13	CD	ACTIVE	16	10
24	F/11	CD	ACTIVE	16	28
25	F/10	CD	ACTIVE	20.6	90
26	F/13	CD	ACTIVE	23.8	91
27	M/11	CD	ACTIVE	15.7	23
28	M/10	CD	ACTIVE	17.6	66
29	M/15	CD	ACTIVE	19	35
30	M/10	CD	ACTIVE	16	40
31	M/15	CD	ACTIVE	20	50
32	M/16	CD	ACTIVE	19	25
33	F/11	CD	ACTIVE	15	10
34	F/16	CD	ACTIVE	20.7	50
35	M/11	CD	ACTIVE	17.8	60
36	F/10	CD	ACTIVE	15.5	30
37	F/11	CD	ACTIVE	15.8	22
38	F/11	CD	ACTIVE	16	25
39	F/10	CD	ACTIVE	17.1	50
40	F/10	CD	ACTIVE	14.9	22
41	M/6	CD	ACTIVE	14.5	20
42	M/7	CD	ACTIVE	14.1	10
43	M/7	CD	ACTIVE	13.1	2
44	M/12	CD	ACTIVE	24.8	96
45	M/16	CD	ACTIVE	20.2	50
46	M/18	CD	REMISSION	20.5	45
47	M/11	CD	REMISSION	16.9	45
48	M/7	CD	REMISSION	14.2	15

PATIENT	SEX/AGE	DIAGNOSIS	DISEASE ACTIVITY	BMI	BMI PERCENTILE
49	F/16	APHTHOSIS, AUTOIMMUNE GASTRITIS	NORMAL COL	21.5	60
50	M/15	PREVIOUS INTESTINAL POLYP	NORMAL COL	16.2	30
51	M/10	JUVENILE INTESTINAL POLYPOSIS	INTESTINAL POLYPS	16.4	25
52	M/11	FUNCTIONAL ABDOMINAL PAIN	NORMAL COL	16.4	33
53	M/3	JUVENILE INTESTINAL POLYP	INTESTINAL POLYPS	16	50
54	F/11	VIRAL INFECTION	NORMAL COL	16	25
55	F/4	FUNCTIONAL ABDOMINAL PAIN	NORMAL COL	14.2	15
56	F/10	FUNCTIONAL ABDOMINAL PAIN	NORMAL COL	18	45

M: Male; F: Female; CD: Crohn's disease; UC: Ulcerative colitis; COL: Colonoscopy.  
Age (year); BMI: Body Mass Index; BMI Percentile: underweight (<5); healthy (5-85);  
overweight (85-95); obese (>95).

**Supplementary Table 3. Cytokine values in the absence of antibiotics, with or without the addition of MDP**

	CD		UC		HC	
	-MDP	+MDP	-MDP	+MDP	-MDP	+MDP
<b>G-CSF</b>	2192 (3745±3282)	2580 (6738±10109)	4536 (7301±7694)	7525 (9804±8562)	436 (645.8±572.4)	385.5 (364.2±220.4)
<b>GM-CSF</b>	748.1 (883.4±712.1)	775 (1217±1247)	1247 (1549±867.3)	1717 (1715±759.7)	504.4 (495.8±215)	393.2 (505.9±206.1)
<b>IFN<math>\gamma</math></b>	402.7 (510.5±434.3)	377.6 (526.8±427.4)	414.6 (620.6±525.3)	1121 (909.7±479.1)	115.4 (144.6±139.2)	72.89 (122.8±107.5)
<b>IL1<math>\beta</math></b>	408.8 (1275±1535)	215.8 (843.6±1238)	502.8 (1627±2835)	498.3 (1741±2217)	97.27 (377.9±536.2)	126.8 (235.5±335.5)
<b>IL2</b>	23.69 (33.92±32.62)	22.82 (35.17±37.17)	36.64 (65.21±66.51)	86.3 (85.65±60.97)	6.405 (6.74±4.601)	1.875 (2.508±2.258)
<b>IL4</b>	7.08 (10.25±12.55)	7.76 (10.34±9.249)	11.41 (14.07±11.09)	15.42 (18.61±13.08)	1.93 (3.267±3.687)	1.02 (2.917±2.898)
<b>IL6</b>	5512 (8428±8573)	5774 (11007±14697)	10788 (20660±28559)	17345 (28516±31326)	2015 (1775±1576)	793.2 (1096±848.6)
<b>IL8</b>	34163 (35988±26282)	19170 (44152±48640)	21678 (37553±33836)	73990 (81093±63573)	3408 (8853±14711)	5080 (6931±6421)
<b>IL10</b>	32.44 (62.44±75)	46.69 (69.82±73.54)	65.98 (68.16±48.2)	57.28 (63.06±29.97)	10.57 (12.81±8.041)	12.36 (14.09±6.162)
<b>IL12</b>	92.17 (155.8±140.5)	94.54 (141.3±143.8)	78.12 (161.9±169.6)	97.51 (221.1±223.7)	11.98 (21.91±24.42)	20.35 (23.26±23.46)
<b>IL17</b>	128 (134.3±82.9)	104.8 (131.3±96.54)	118.2 (175.4±159.7)	234.1 (204.8±157)	30.21 (59.22±60.62)	47 (53.88±53.89)
<b>MCP1</b>	268.9 (645.9±1333)	268.1 (308.8±195.3)	370.7 (435.6±323)	408.5 (572.4±498.1)	412.4 (370.9±238.5)	273.7 (439.1±479.9)
<b>MIP1<math>\beta</math></b>	1121 (2564±3640)	2864 (2519±2220)	797.1 (3139±3655)	2081 (3531±3241)	59.58 (131.4±194.5)	80.83 (155.1±165.6)
<b>TNF<math>\alpha</math></b>	90.83 (135.7±163.6)	72.83 (91.8±82.98)	158 (184±161.7)	170.9 (182.2±109.5)	15.03 (21.79±21.48)	27.27 (21.66±14.89)

Values (pg/ml) are expressed as Median (Mean±SD). CD: Crohn's disease; UC: Ulcerative Colitis; HC: Healthy Controls; MDP: Muramyl dipeptide

**Supplementary Table 4. Cytokine values in the presence of antibiotics, with or without the addition of MDP**

	CD		UC		HC	
	-MDP	+MDP	-MDP	+MDP	-MDP	+MDP
<b>G-CSF</b>	3377 (6330±7510)	2407 (3133±2371)	5954 (10270±12725)	8187 (9128±8209)	675.3 (642.9±354.8)	1224 (1199±1080)
<b>GM-CSF</b>	927.1 (921.3±489.6)	853.1 (1186±1804)	1515 (1788±853.7)	1457 (1615±933.3)	436.7 (519±202.1)	526.1 (550.5±258.6)
<b>IFN<math>\gamma</math></b>	660.3 (599.3±399.4)	365.6 (434.6±294)	977.2 (835.3±521.5)	452.8 (645.9±509.6)	123 (108.9±56.97)	161.3 (162.1±85)
<b>IL1<math>\beta</math></b>	199.2 (373.2±567.8)	363.2 (759.3±947.7)	308.5 (1475±2023)	478.1 (1606±2436)	89.52 (136±154.5)	53.66 (87.21±112)
<b>IL2</b>	41.21 (40.66±27.39)	21.05 (27.43±27.43)	39.33 (75.02±74.49)	59.79 (76.39±66.97)	1.18 (4.608±6.054)	9.56 (10.25±4.785)
<b>IL4</b>	10.02 (11.25±9.659)	7.64 (9.761±10.29)	12.51 (14.41±11.08)	11.1 (13.55±10.45)	1.13 (3.491±4.66)	1.13 (3.818±6.83)
<b>IL6</b>	5550 (9737±11609)	5576 (9543±11874)	13072 (24974±26737)	14588 (22221±22516)	1704 (2144±1789)	2610 (2934±3254)
<b>IL8</b>	42294 (36328±27994)	46697 (57161±67755)	98115 (95571±48577)	23748 (63080±95386)	8075 (8773±6897)	7501 (19984±28397)
<b>IL10</b>	54.94 (68.84±45.13)	28.17 (85.95±209.8)	62.33 (61.6±48.43)	58.75 (75.9±60.62)	14.55 (17.88±18.22)	25.55 (27.85±18.57)
<b>IL12</b>	102.4 (129.1±111.6)	80.86 (133.3±123)	112.5 (179.3±175.2)	119.2 (146.5±123.5)	14.94 (26.19±25.67)	18.92 (28.33±29.12)
<b>IL17</b>	111.7 (138.2±86.12)	103.7 (140.6±108.2)	152.9 (174.5±146.2)	134.6 (177.8±129.1)	46.3 (66.64±54.21)	44.29 (67.46±72.89)
<b>MCP1</b>	314.8 (394.6±265.4)	254 (848.3±2575)	337.3 (360±264.3)	235.1 (678.1±1112)	560.2 (519±333.5)	608.9 (1228±1730)
<b>MIP1<math>\beta</math></b>	1844 (1965±1521)	2723 (3683±3561)	1502 (3167±3530)	3570 (4325±3739)	195.5 (218.4±175.7)	273.2 (408.3±429.1)
<b>TNF<math>\alpha</math></b>	110.1 (92.81±57.47)	64.84 (98.78±110.3)	173.7 (183.3±135.9)	165.9 (188.6±161.3)	19.89 (27.02±26.79)	16.73 (25.36±31.78)

Values (pg/ml) are expressed as Median (Mean±SD). CD: Crohn's disease; UC: Ulcerative Colitis; HC: Healthy Controls;  
MDP: Muramyl dipeptide