

THE LANCET

Rheumatology

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Pfeifer J, Thurner B, Kessel C, et al. Autoantibodies against interleukin-1 receptor antagonist in multisystem inflammatory syndrome in children: a multicentre, retrospective, cohort study. *Lancet Rheumatol* 2022; published online March 29. [https://doi.org/10.1016/S2665-9913\(22\)00064-9](https://doi.org/10.1016/S2665-9913(22)00064-9).

Appendix
Supplementary Table 1: Patient characteristics

Patient number	Gender (m/f)	Age range [years]	Weight [kg]	Height [cm]	Ethnicity	Onset after Covid-infection [weeks]	Fever > 3d	Rash	Bilateral conjunctivitis	Hypotension	Cardiac affection	Ascites	Pleural effusion	Gastrointestinal symptoms	IVIg	ASS	Glucocorticoids	ventilation	catecholamines	Duration of hospitalization[days]
MIS-C-1	f	6-10	30	133	White	6	+	+	+	+	+	+	+	+	4 g/kg	+	30mg/kg/d for 5 d +	NIV	+	17
MIS-C-2	f	6-10	46	139	White	4	+	-	-	-	+	+	+	-	+	+	+	IV	+	17
MIS-C-3	f	0-5	15	110	Asian	3	+	-	-	+	+	+	+	+	2 g/kg	+	30 mg/kg/d for 3 d	IV	+	15
MIS-C-4	f	11-15	28	141	White	at admission high IgG, virus in stool	+	+	+	+	+	+	+	+	2g/kg	+	+	2l/min	+	-
MIS-C-5	m	6-10	51	148	White	5	+	+	+	+	-	-	+	+	2g/kg	+	20mg/kg for 3d +	+	+	-
MIS-C-6	m	6-10	25	135	White	7	+	+	+	+	+	-	+	+	+	+	+	-	-	
MIS-C-7	m	16-18	70	175	White	acute COVID-19	+	-	-	+	-	-	-	-	-	+	+	NIV	+	13
MIS-C-8	f	0-5	9.8	81.5	African	unknown, at admission high IgG	+	+	-	+	+	-	+	+	2g/kg	+	2mg/kg/d	IV	+	11
MIS-C-9	f	11-15	71.8	166	North African	unknown, at admission, high IgG	+	+	-	+	+	-	-	+	2g/kg	+	2mg/kg/d	IV	+	14
MIS-C-10	m	0-5	13.6	88	White	unknown, at admission high IgG, virus in stool	+	+	+	-	-	-	-	+	2g/kg	+	30mg/kg/d 3 days	-	-	6
MIS-C-11	m	0-5	16.5		White	unknown, at admission high	+	+	+	-	-	-	-	+	2g/kg	+	not necessary	-	-	5

MIS-C-12	m	0-5	15.6	102	White	IgG 5	+	-	+	-	-	+	+	+	2x 2g/kg	-	Prednisolon 2mg/kg/d 5d, then tapered	-	-	14
MIS-C-13	f	0-5	11	76	Latin	contact with COVID-19	+	+	+	-	+	-	-	-	2g/kg	+	30mg/kg/d 3 days	-	-	6
MIS-C-14	f	6-10	33	134	Latin	no information	+	-	+	-	+	-	-	+	+	+	+	-	-	5
MIS-C-15	m	6-10	24	118	White	8	+	+	+	+	-	-	-	+	+	+	+	-	-	6
MIS-C-16	f	0-5	22	107	Latin	no information	+	+	+	-	-	-	-	+	+	+	+	-	-	6
MIS-C-17	f	6-10	25	120	White	4	+	+	+	-	-	-	-	+	+	+	+	-	-	5
MIS-C-18	m	16-18	57		North African	no information	+	+	+	+	+	+	-	+	+	+	+	+	+	12
MIS-C-19	f	11-15	55	156	White	9	+	-	-	-	-	-	-	+	+	+	+	-	-	6
MIS-C-20	m	6-10	27	139	Asian	no information	+	-	+	+	+	-	-	+	-	-	+	-	+	12
MIS-C-21	m	0-5	17	109	White	no information	+	+	+	+	-	-	-	+	+	+	+	-	-	6

Supplementary table 2: Clinical and laboratory summary of patients with available clinical information

	MIS-C-1	MIS-C-2	MIS-C-3	MIS-C-4	MIS-C-5	MIS-C-6	MIS-C-7	MIS-C-8	MIS-C-9	MIS-C-10	MIS-C-11	MIS-C-12	MIS-C-13
Leucocytes [/ μ l] Nadir peak	3,400 26,200	4,400 14,400	9,000 20,600	16,190 30,160	5,590 17,750	8,080 19,020	8,000 13,600	23,200 30,600	10,700 14,000	4,600 12,000	18,500	6,770 24,000	11,800 29,300
Thrombocytes nadir [/ μ l]	78,000	123,000	218,000	776,000	1,248,000	111,000	97,000	107,000	163,000	114,000	296,000	100,000	444,000
CrP peak [mg/l]	205	197	260	118	265	207	356	213.5	364.5	73.5	165	80.64	184.2
PCT peak [ng/ml]	63.2	3.9	9.83	11.25	20.34	35.62	8.09	4.65	6.79	3.64	6.7	n.d.	0.57
NT-pro-BNP peak [pg/ml]	52,003	8,293	69,020	35,000	>35,000	17,183	2,414	4,840	13,816	5,810	7,994	n.d.	1,416
Troponin T peak [pg/ml]	45	48	176	110	41.8	101	ND	70	113	ND	ND	n.d.	10
Ferritin [ng/ml]	542	2,544	990	1,561	1,039	3,937	1,952	563	977	358	67	n.d.	113
Na ⁺ nadir [mmol/l]	129	130		125	124	127	141	134	136	132	136	129	136
Albumine nadir [mg/l]	26	22		22	21	26	24	20	33	29	35	23,8	32
SARS-Cov 2 Serology	IgG + IgA +	IgG + IgA +	IgG +	IgG+ IgA+	IgG+	IgG+	ND	IgG + IgM ND	IgG + IgM -	IgG + IgM neg	IgG +	IgG +	neg
SARS-CoV2 PCR at hospitalization	neg	neg	neg	neg	neg	?	pos	pos	pos	neg (nasopharynx) pos (stool)	neg	neg.	neg
D-Dimer peak	4.56	8.19	7.68	3.83	6.87	5.08	7.23	8.75	6.32	ND	ND	7.04	ND
Anti-IL-1-Ra-Ab	pos	pos	pos	pos	pos	pos	neg	neg	pos	pos	pos	neg	pos

Continuation of supplementary table 2: Clinical and laboratory summary of patients with available clinical information

	MIS-C-14	MIS-C-15	MIS-C-16	MIS-C-17	MIS-C-18	MIS-C-19	MIS-C-20	MIS-C-21
Leucocytes [/ μ l] Nadir peak	5.900 12.000	8.200 21.400	9.300 10.300	6.600 10.800	15.300 29.300	5.300 13.300	7.900 11.400	9.700 11.700
Thrombocytes nadir [/ μ l]	226.000	145.000	151.000	105.000	98.000	218.000	256.000	161.000
CrP peak [mg/l]	429	139	259	130	440	309	299.4	235
PCT peak [ng/ml]	0.91	1.1	12.66	3.7	52.6	3.68	11.69	6.59
NT-pro-BNP peak [pg/ml]	5.281	5.653	3.832	2.260	75.718	42	--	6.244
Troponin T peak [pg/ml]	0.153		0.09	0.02	1.186		0.129	0.034
Ferritin [ng/ml]	400	572	567	460	40006	282	269	320
Na ⁺ nadir [mmol/l]	141	133	126	133	136	138	134	132
Albumine nadir [mg/l]	30	28	31	28	20	40	36	28
SARS-Cov 2 Serology	IgM – IgG +	IgM + IgG +	IgM- IgG+	IgM + IgG +	IgM + IgG +	IgM – IgG +	IgM + IgG +	IgM + IgG +
SARS-CoV2 PCR at hospitalization	Pos	Neg	Neg	Neg	Neg	Neg	Neg	Neg
D-Dimer peak	1.81	2.37	38.08	2.43	12.49	4.48	4.96	4.67
Anti-IL-1-Ra-Ab (yes/no; max. titer, Ig-class)	neg	pos 1:200 IgG1	neg	neg	neg	pos 1:400 IgG1	neg	Pos 1:400 IgM & IgG1
Hyperphosphorylated IL-1-Ra	neg	pos	neg	neg	neg	pos	neg	pos
Min. plasma IL-1-Ra (pg/ml); determined by ELISA	1555	227.5	1663	1923	1592	221	1625	182
Anti-PGRN-Ab (yes/no; Titer, Ig-class)	neg	neg	neg	neg	neg	pos 1:200	neg	neg

Supplementary Table 3: Characteristics of samples of CoKiBa trials

CoKiBa #	sex (f/m)	age (years)	SARS-CoV-2 ELISA (pos/neg)	Anti-IL-1Ra-Ab (pos/neg)	Anti-PGRN-Ab (pos/neg)
1	m	3	neg	neg	neg
2	f	8	neg	neg	neg
3	m	12	neg	neg	neg
4	m	13	neg	neg	neg
5	f	13	neg	neg	neg
6	f	11	neg	neg	neg
7	m	8	neg	neg	neg
8	m	12	neg	neg	neg
9	f	5	neg	neg	neg
10	f	1	neg	neg	neg
11	f	10	pos	neg	neg
12	m	3	pos	neg	neg
13	m	13	neg	neg	neg
14	f	10	pos	neg	neg
15	m	1	neg	neg	neg
16	f	6	neg	neg	neg
17	m	8	neg	neg	neg
18	m	2	neg	neg	neg
19	f	0	neg	neg	neg
20	m	10	neg	neg	neg
21	m	1	neg	neg	neg
22	f	13	neg	neg	neg
23	f	4	neg	neg	neg
24	m	1	neg	neg	neg
25	f	11	neg	neg	neg
26	f	13	pos	neg	neg
27	m	13	neg	neg	neg
28	m	13	neg	neg	neg
29	f	8	neg	neg	neg
30	m	12	pos	neg	neg
31	m	11	pos	neg	neg
32	f	5	neg	neg	neg
33	m	12	neg	neg	neg
34	f	0	pos	neg	neg
35	m	13	neg	neg	neg
36	m	8	pos	neg	neg
37	m	8	neg	neg	neg
38	f	8	neg	neg	neg
39	m	12	neg	neg	neg
40	f	1	neg	neg	neg
41	f	10	pos	neg	neg
42	f	10	neg	neg	neg
43	f	11	neg	neg	neg

44	f	11	pos	neg	neg
45	m	12	pos	neg	neg
46	m	13	pos	neg	neg
47	m	2	neg	neg	neg
48	f	5	neg	neg	neg
49	m	8	neg	neg	neg
50	f	11	pos	neg	neg
51	m	10	neg	neg	neg
52	m	7	neg	neg	neg
53	f	12	neg	neg	neg
54	f	7	neg	neg	neg
55	m	3	neg	neg	neg
56	f	7	neg	neg	neg
57	f	5	neg	neg	neg
58	m	6	neg	neg	neg
59	m	10	neg	neg	neg
60	m	12	neg	neg	neg
61	m	9	neg	neg	neg
62	f	6	pos	neg	neg
63	m	6	neg	neg	neg
64	m	7	neg	neg	neg
65	f	5	neg	neg	neg
66	m	6	pos	neg	neg
67	f	10	neg	neg	neg
68	f	9	neg	neg	neg
69	f	3	neg	neg	neg
70	m	10	neg	neg	neg
71	m	12	neg	neg	neg
72	m	6	neg	neg	neg
73	m	12	neg	neg	neg
74	f	6	neg	neg	neg
75	m	2	pos	neg	neg
76	f	8	neg	neg	neg
77	m	6	neg	neg	neg
78	f	7	neg	neg	neg
79	f	12	neg	neg	neg
80	m	4	neg	neg	neg
81	m	11	neg	neg	neg
82	f	10	neg	neg	neg
83	m	8	neg	neg	neg
84	m	13	pos	neg	neg
85	f	16	neg	neg	neg
86	m	3	neg	neg	neg
87	f	12	neg	neg	neg
88	f	3	neg	neg	neg
89	m	2	neg	neg	neg
90	m	12	neg	neg	neg
91	m	8	neg	neg	neg
92	f	6	neg	neg	neg

93	m	2	neg	neg	neg
94	f	2	neg	neg	neg
95	m	13	neg	neg	neg
96	m	13	pos	neg	neg
97	f	3	neg	neg	neg
98	m	3	neg	neg	neg
99	f	2	neg	neg	neg
100	f	11	neg	neg	neg
101	f	8	neg	neg	neg
102	m	12	pos	neg	neg
103	m	7	pos	neg	neg
104	f	10	pos	neg	neg
105	m	3	neg	neg	neg
106	f	15	pos	neg	neg
107	m	9	pos	neg	neg
108	m	7	pos	neg	neg
109	m	1	neg	neg	neg
110	m	8	neg	neg	neg
111	m	13	neg	neg	neg
112	f	9	neg	neg	neg
113	f	13	neg	neg	neg
114	f	3	neg	neg	neg
115	m	13	neg	neg	neg
116	m	12	neg	neg	neg
117	m	10	neg	neg	neg
118	f	6	neg	neg	neg
119	f	5	pos	neg	neg
120	f	13	neg	neg	neg
121	m	12	neg	neg	neg
122	m	10	neg	neg	neg
123	f	3	neg	neg	neg
124	m	0	pos	neg	neg
125	f	2	neg	neg	neg
126	f	8	pos	neg	neg
127	m	2	neg	neg	neg
128	m	13	neg	neg	neg
129	f	2	neg	neg	neg
130	f	6	pos	neg	neg
131	m	7	neg	neg	neg
132	m	1	pos	neg	neg
133	f	4	pos	neg	neg
134	f	6	pos	neg	neg
135	m	2	neg	neg	neg
136	m	3	pos	neg	neg
137	f	2	neg	neg	neg
138	f	7	neg	neg	neg
139	m	10	pos	neg	neg
140	m	13	neg	neg	neg
141	f	3	pos	neg	neg

142	f	12	neg	neg	neg
143	f	9	neg	neg	neg
144	f	5	neg	neg	neg
145	f	5	pos	neg	neg
146	f	5	neg	neg	neg
147	m	1	neg	neg	neg
148	m	11	neg	neg	neg
149	f	1	neg	neg	neg
150	m	2	neg	neg	neg
151	f	13	neg	neg	neg
152	f	5	neg	neg	neg
153	m	8	neg	neg	neg
154	f	12	neg	neg	neg
155	f	4	neg	neg	neg
156	m	5	neg	neg	neg
157	m	2	pos	neg	neg
158	f	6	neg	neg	neg
159	m	2	pos	neg	neg
160	m	14	neg	neg	neg
161	f	0	neg	neg	neg
162	m	13	neg	neg	neg
163	f	5	neg	neg	neg
164	f	6	neg	neg	neg
165	f	13	neg	neg	neg
166	f	8	neg	neg	neg
167	m	6	neg	neg	neg
168	f	10	neg	neg	neg
169	m	15	neg	neg	neg
170	f	10	neg	neg	neg
171	m	0	neg	neg	neg
172	m	12	neg	neg	neg
173	f	10	neg	neg	neg
174	m	10	neg	neg	neg
175	m	2	neg	neg	neg
176	f	8	neg	neg	neg
177	m	12	neg	neg	neg
178	f	10	neg	neg	neg
179	m	13	neg	neg	neg
180	m	8	neg	neg	neg
181	f	12	neg	neg	neg
182	m	7	neg	neg	neg
183	m	7	neg	neg	neg
184	m	6	neg	neg	neg
185	m	11	neg	neg	neg
186	f	7	pos	neg	neg
187	m	1	neg	neg	neg
188	m	5	neg	neg	neg
189	m	13	pos	neg	neg
190	f	4	neg	neg	neg

191	f	3	neg	neg	neg
192	f	5	neg	neg	neg
193	f	6	neg	neg	neg
194	f	4	neg	neg	neg
195	m	1	neg	neg	neg
196	f	11	neg	neg	neg
197	f	6	neg	neg	neg
198	f	9	neg	neg	neg
199	f	12	pos	neg	neg
200	m	7	neg	neg	neg
201	m	12	neg	neg	neg
202	m	1	neg	neg	neg
203	m	7	neg	neg	neg
204	m	6	neg	neg	neg
205	m	9	neg	neg	neg
206	f	3	neg	neg	neg
207	m	9	neg	neg	neg
208	m	1	neg	neg	neg
209	m	3	neg	neg	neg
210	m	13	neg	neg	neg
211	m	7	pos	neg	neg
212	f	16	neg	neg	neg
213	m	11	neg	neg	neg
214	m	13	neg	neg	neg
215	f	8	neg	neg	neg
216	m	3	neg	neg	neg
217	m	7	pos	neg	neg
218	f	6	neg	neg	neg
219	f	13	pos	neg	neg
220	m	13	neg	neg	neg
221	f	8	pos	neg	neg
222	m	12	pos	neg	neg
223	f	13	neg	neg	neg
224	f	10	neg	neg	neg
225	f	6	neg	neg	neg
226	m	3	pos	neg	neg
227	m	8	neg	neg	neg
228	f	11	neg	neg	neg
229	f	9	pos	neg	neg
230	m	11	pos	neg	neg
231	f	13	pos	neg	neg
232	f	11	neg	neg	neg
233	m	2	pos	neg	neg
234	m	13	pos	neg	neg
235	f	13	neg	neg	neg
236	f	6	neg	neg	neg
237	f	2	pos	neg	neg
238	m	12	pos	neg	neg
239	m	8	pos	neg	neg

240	f	11	neg	neg	neg
241	f	10	pos	neg	neg
242	f	12	pos	neg	neg
243	f	5	neg	neg	neg
244	m	8	pos	neg	neg
245	m	7	pos	neg	neg
246	f	5	neg	neg	neg
247	m	14	neg	neg	neg
248	f	2	neg	neg	neg
249	f	11	neg	neg	neg
250	m	3	pos	neg	neg
251	f	10	neg	neg	neg
252	m	3	neg	neg	neg
253	m	13	neg	neg	neg
254	f	11	neg	neg	neg
255	m	14	neg	neg	neg
256	f	5	neg	neg	neg
257	f	12	neg	neg	neg
258	f	8	neg	neg	neg
259	m	7	pos	neg	neg
260	f	5	neg	neg	neg
261	f	10	neg	neg	neg
262	f	5	neg	neg	neg
263	f	11	neg	neg	neg
264	f	6	pos	neg	neg
265	f	12	pos	neg	neg
266	f	5	neg	neg	neg
267	m	3	pos	neg	neg
268	f	3	neg	neg	neg
269	f	5	neg	neg	neg
270	f	5	pos	neg	neg
271	m	1	pos	neg	neg
272	m	1	pos	neg	neg
273	f	5	pos	neg	neg
274	f	3	pos	neg	neg
275	f	2	pos	neg	neg
276	m	13	neg	neg	neg
277	m	13	neg	neg	neg
278	m	3	pos	neg	neg
279	f	12	pos	neg	neg
280	f	13	neg	neg	neg
281	m	2	pos	neg	neg
282	m	4	pos	neg	neg
283	f	12	neg	neg	neg
284	m	9	pos	neg	neg
285	f	8	pos	neg	neg
286	f	10	neg	neg	neg
287	f	4	neg	neg	neg
288	m	5	pos	neg	neg

289	m	7	neg	neg	neg
290	f	1	pos	neg	neg
291	m	6	neg	neg	neg
292	m	1	neg	neg	neg
293	m	3	neg	neg	neg
294	f	7	pos	neg	neg
295	f	5	pos	neg	neg
296	f	11	neg	neg	neg
297	m	12	neg	neg	neg
298	f	11	pos	neg	neg
299	f	10	neg	neg	neg
300	m	12	pos	neg	neg
301	f	5	neg	neg	neg
302	f	8	neg	neg	neg
303	m	14	pos	neg	neg
304	f	3	pos	neg	neg
305	f	12	neg	neg	neg
306	f	1	neg	neg	neg
307	m	11	pos	neg	neg
308	f	5	neg	neg	neg
309	f	8	neg	neg	neg
310	f	7	neg	neg	neg
311	m	7	neg	neg	neg
312	f	5	neg	neg	neg
313	m	6	neg	neg	neg
314	m	12	neg	neg	neg
315	m	9	neg	neg	neg
316	m	12	pos	neg	neg
317	f	2	neg	neg	neg
318	f	4	neg	neg	neg
319	f	13	neg	neg	neg
320	m	13	neg	neg	neg
321	f	5	neg	neg	neg
322	m	3	neg	neg	neg
323	m	10	neg	neg	neg
324	m	10	neg	neg	neg
325	f	10	neg	neg	neg
326	m	6	neg	neg	neg
327	f	12	neg	neg	neg
328	f	13	neg	neg	neg
329	f	11	neg	neg	neg
330	m	1	neg	neg	neg
331	m	15	neg	neg	neg
332	m	16	neg	neg	neg
333	m	13	pos	neg	neg
334	f	10	neg	neg	neg
335	f	10	neg	neg	neg
336	m	5	neg	neg	neg
337	f	12	neg	neg	neg

338	f	5	pos	neg	neg
339	m	9	neg	neg	neg
340	m	11	neg	neg	neg
341	m	13	neg	neg	neg
342	f	3	neg	neg	neg
343	f	11	pos	neg	neg
344	m	7	neg	neg	neg
345	f	12	pos	neg	neg
346	f	11	neg	neg	neg
347	m	7	neg	neg	neg
348	f	6	neg	neg	neg
349	m	13	neg	neg	neg
350	m	9	pos	neg	neg
351	f	10	neg	neg	neg
352	f	7	neg	neg	neg
353	f	7	pos	neg	neg
354	f	11	neg	neg	neg
355	m	12	pos	neg	neg
356	f	11	neg	neg	neg
357	f	13	pos	neg	neg
358	m	10	neg	neg	neg
359	f	10	pos	neg	neg
360	f	13	pos	neg	neg
361	f	13	neg	neg	neg
362	f	5	pos	neg	neg
363	m	9	neg	neg	neg
364	f	7	neg	neg	neg
365	m	9	neg	neg	neg
366	m	7	neg	neg	neg
367	m	9	neg	neg	neg
368	f	4	neg	neg	neg
369	m	10	neg	neg	neg
370	m	7	neg	neg	neg
371	m	8	neg	neg	neg
372	m	7	neg	neg	neg
373	m	1	neg	neg	neg
374	m	1	neg	neg	neg
375	m	9	neg	neg	neg
376	m	12	neg	neg	neg
377	m	9	neg	neg	neg
378	m	2	neg	neg	neg
379	m	11	neg	neg	neg
380	f	8	pos	neg	neg
381	f	4	pos	neg	neg
382	m	12	neg	neg	neg
383	f	8	neg	neg	neg
384	f	12	neg	neg	neg
385	f	3	neg	neg	neg
386	f	6	pos	neg	neg

387	f	8	neg	neg	neg
388	m	7	neg	neg	neg
389	m	12	neg	neg	neg
390	m	10	neg	neg	neg
391	f	5	neg	neg	neg
392	f	3	pos	neg	neg
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395	m	10	pos	neg	neg
396	f	11	neg	neg	neg
397	f	3	neg	neg	neg
398	f	1	neg	neg	neg
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400	f	12	pos	neg	neg
401	m	9	pos	neg	neg
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405	f	11	pos	neg	neg
406	m	9	neg	neg	neg
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408	m	3	pos	neg	neg
409	f	5	pos	neg	neg
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411	m	10	neg	neg	neg
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413	m	9	neg	neg	neg
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415	m	13	neg	neg	neg
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420	m	7	neg	neg	neg
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422	f	7	neg	neg	neg
423	f	6	neg	neg	neg
424	f	2	neg	neg	neg
425	f	6	neg	neg	neg
426	m	1	neg	neg	neg
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429	m	8	neg	neg	neg
430	m	3	neg	neg	neg
431	m	8	pos	neg	neg
432	f	12	neg	neg	neg
433	m	8	pos	neg	neg
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435	m	1	neg	neg	neg

436	m	11	neg	neg	neg
437	f	13	neg	neg	neg
438	m	12	neg	neg	neg
439	f	8	pos	neg	neg
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441	m	7	neg	neg	neg
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443	m	7	neg	neg	neg
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446	f	3	neg	neg	neg
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452	m	3	neg	neg	neg
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465	f	5	neg	neg	neg
466	m	3	neg	neg	neg
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473	m	12	neg	neg	neg
474	m	7	neg	neg	neg
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480	m	3	neg	neg	neg
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523	m	10	pos	neg	neg
524	f	6	neg	neg	neg
525	f	11	neg	neg	neg
526	f	8	neg	neg	neg
527	f	11	neg	neg	neg
528	m	13	neg	neg	neg
529	f	6	pos	neg	neg
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533	f	13	neg	neg	neg

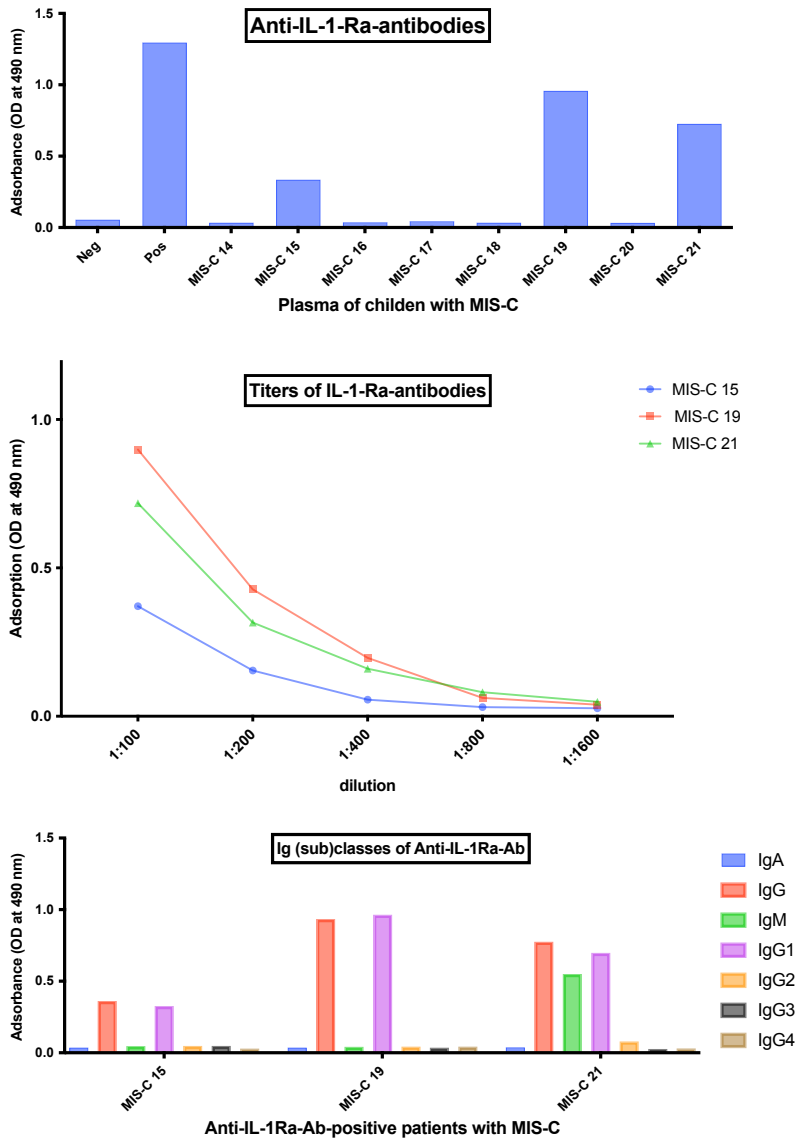
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579	m	13	pos	neg	neg
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585	f	3	pos	neg	neg
586	f	13	neg	neg	neg
587	m	13	neg	neg	neg
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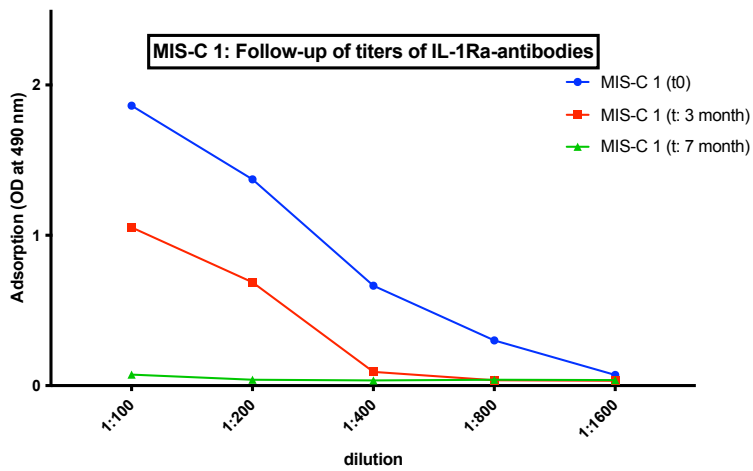
Supplementary Figures

Supplementary Figure 1)

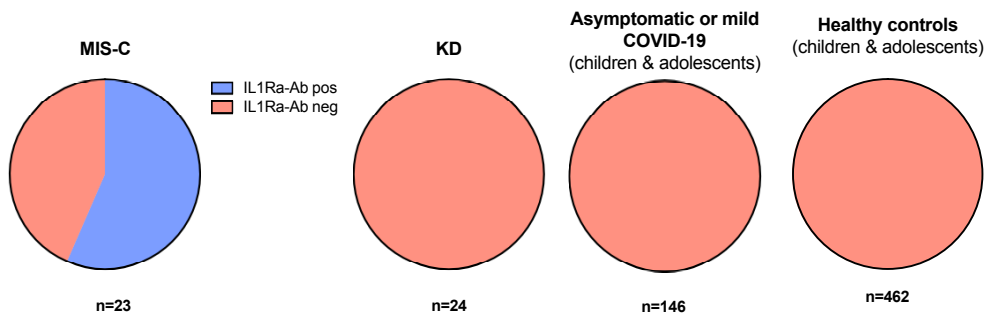
A)



B)

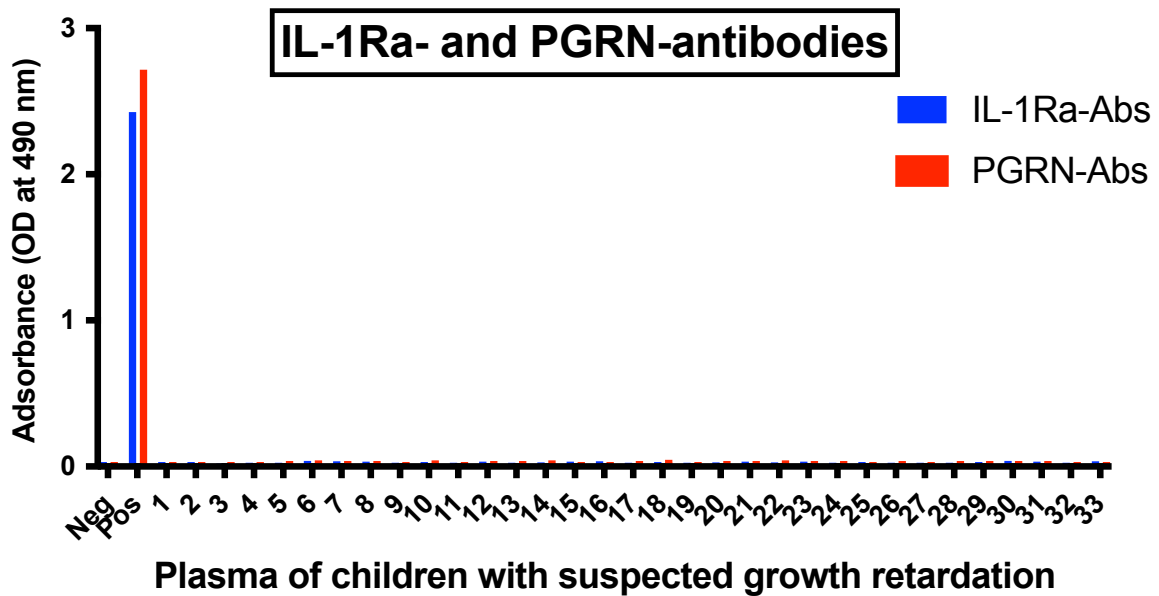


C)



Supplementary Figure 1: A) ELISA of IL-1Ra-Abs of MIS-C-14 to MIS-C-21, and the titers, Ig classes and IgG subclasses of IL-1Ra-Ab-seropositive patients. B) Course of titers of IL-1Ra antibodies of case MIS-C 1 at initial presentation and 3-month and 7-month follow-up. C) Frequency of IL-1Ra-Abs in MIS-C and control groups.

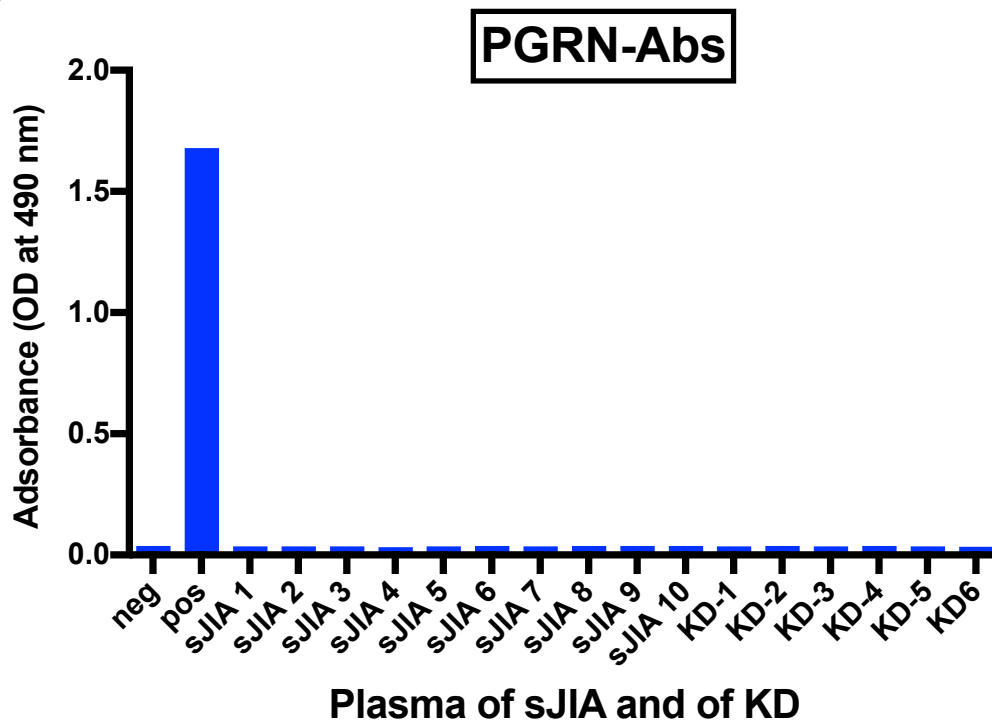
Supplementary Figure 2)



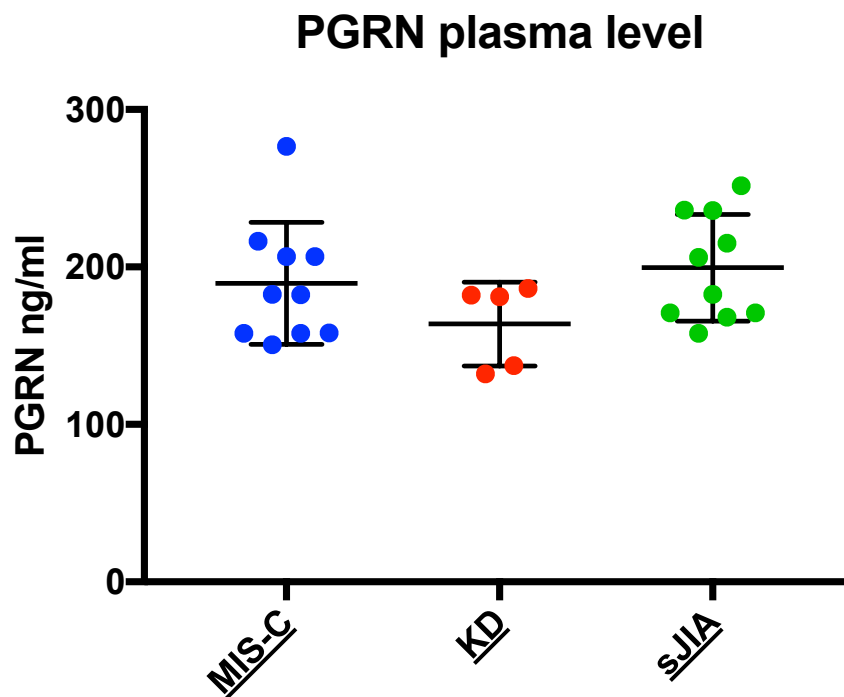
Supplementary Figure 2: ELISA of IL-1Ra-Abs and PGRN-Abs in 33 children with suspected growth retardation as a non-inflammatory control group.

Supplementary Figure 3)

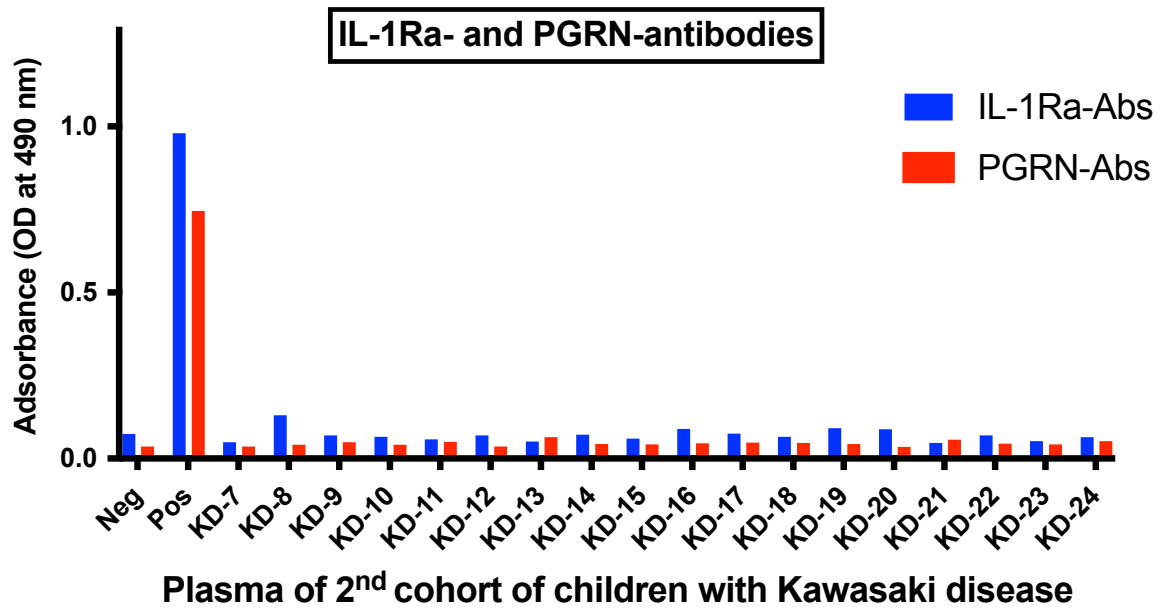
A)



B)

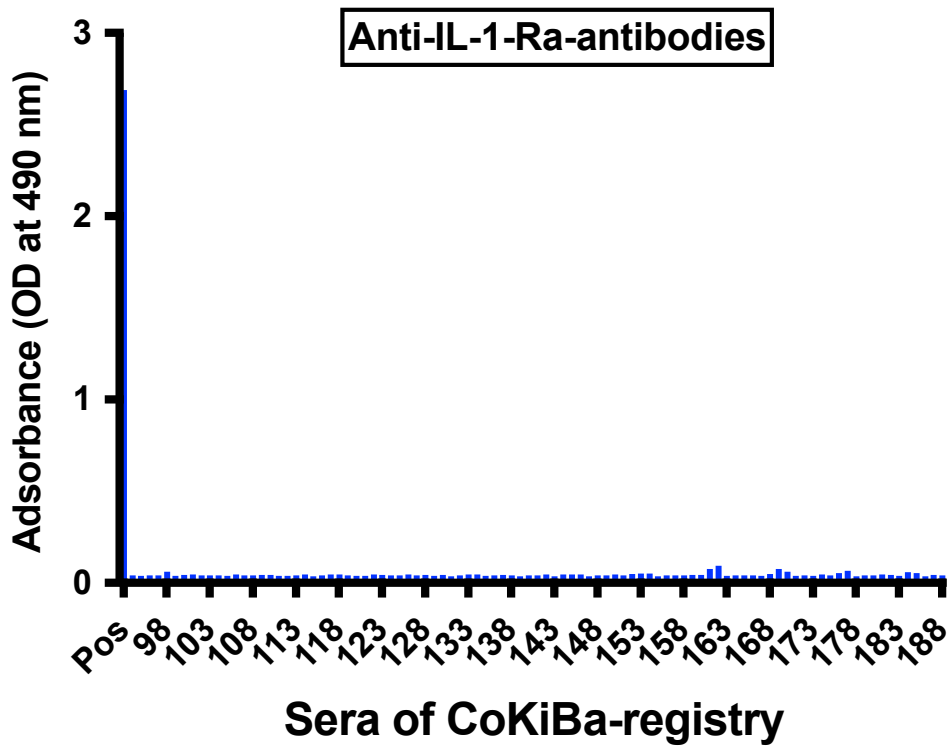
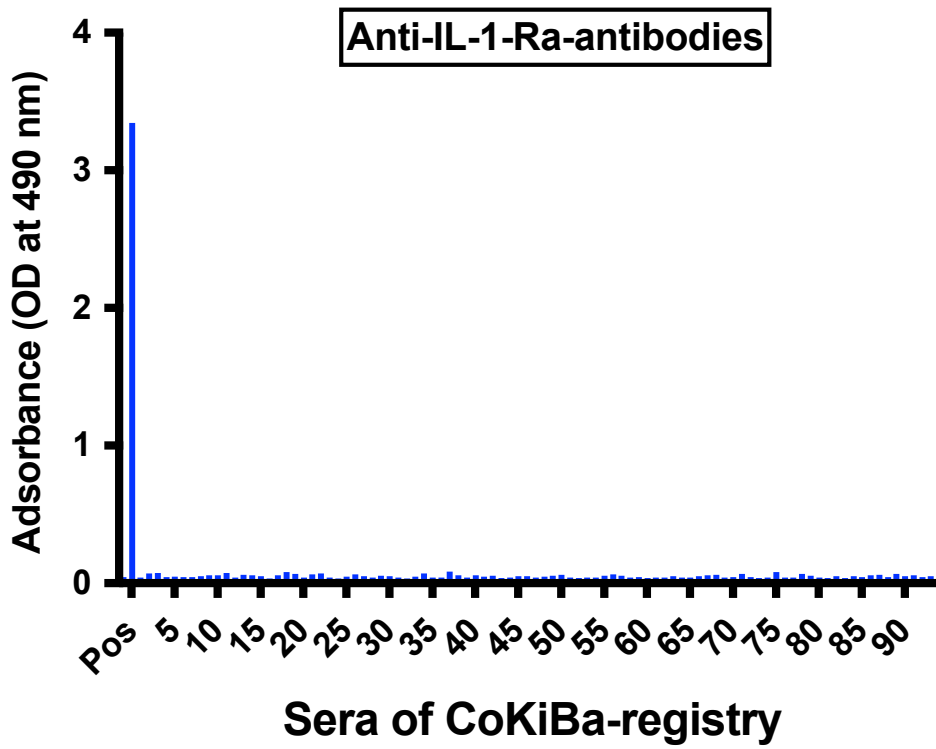


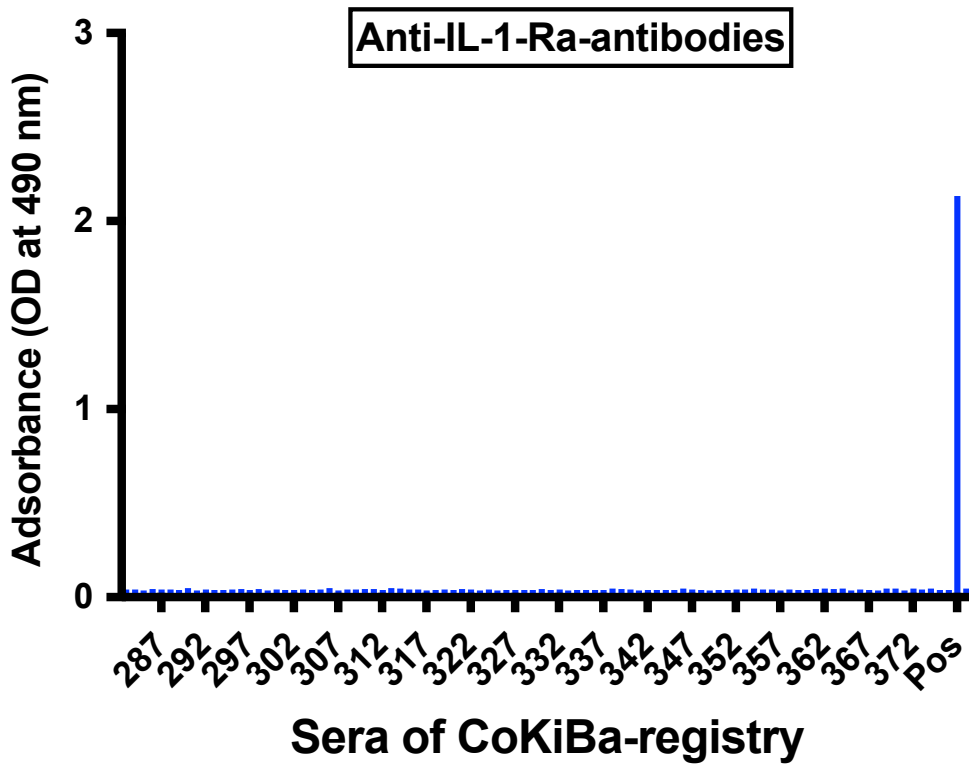
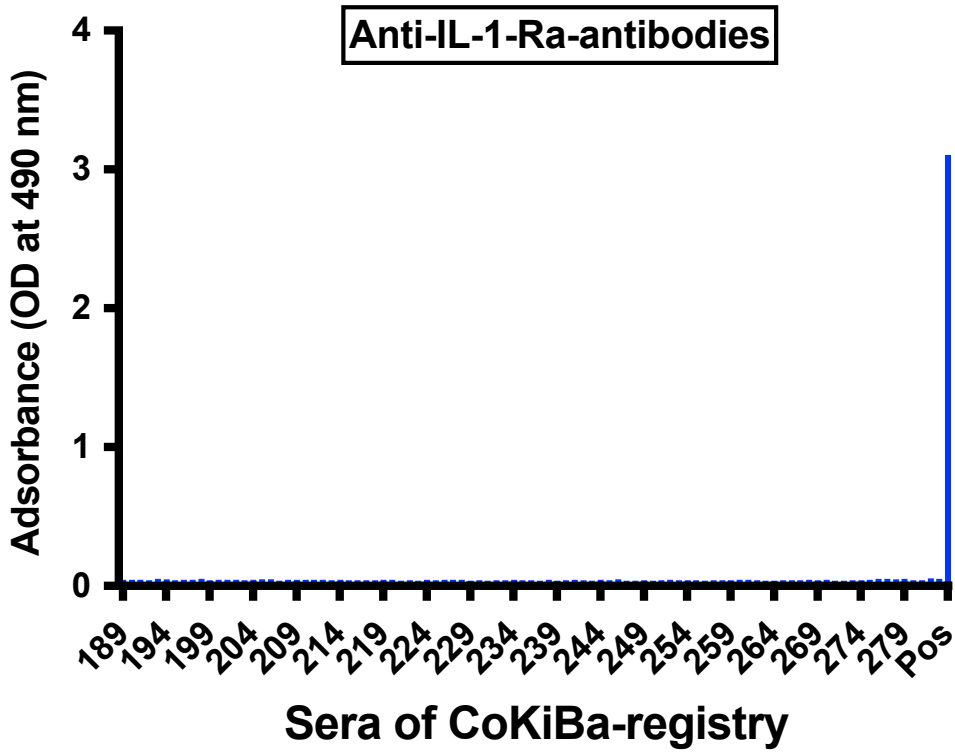
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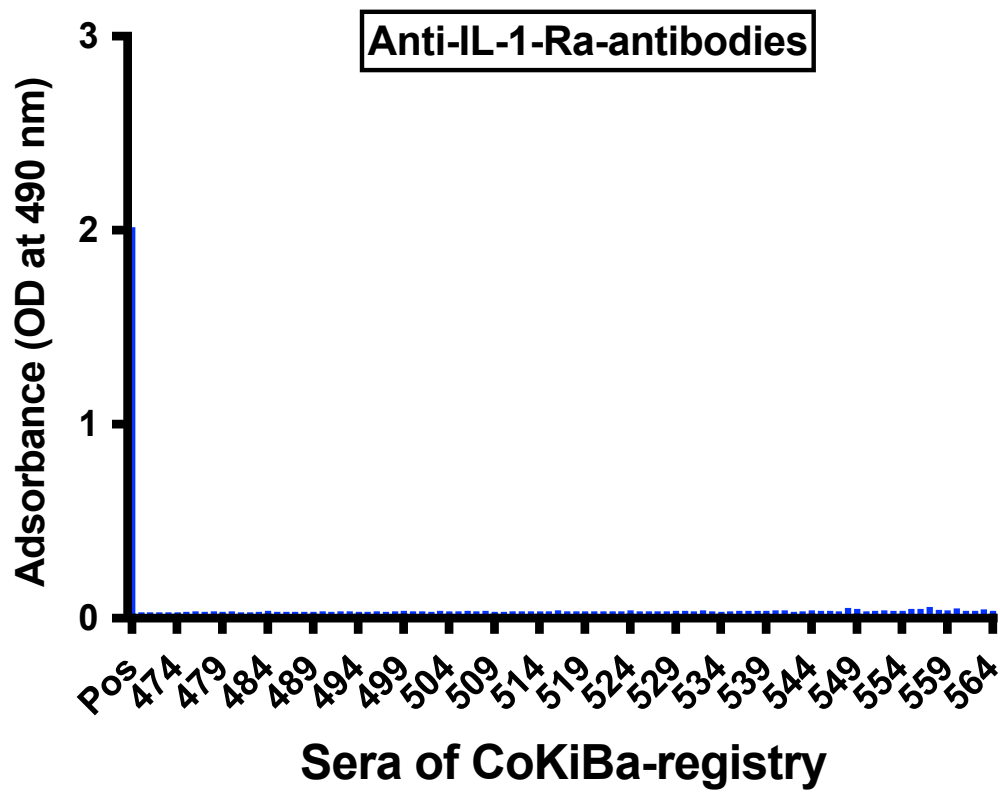
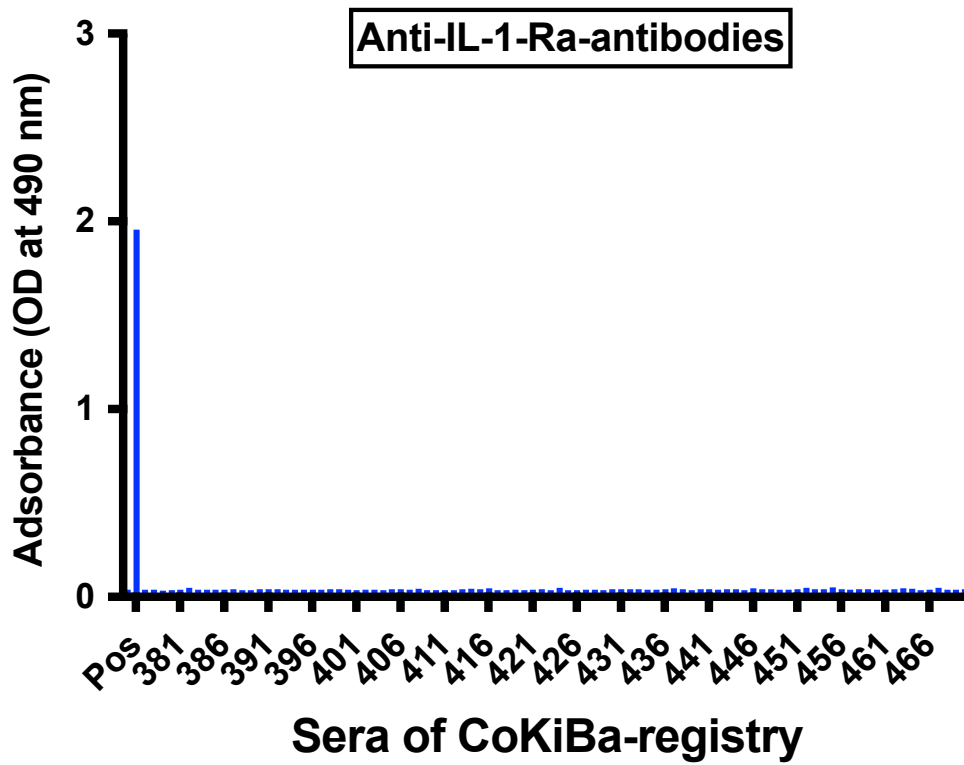


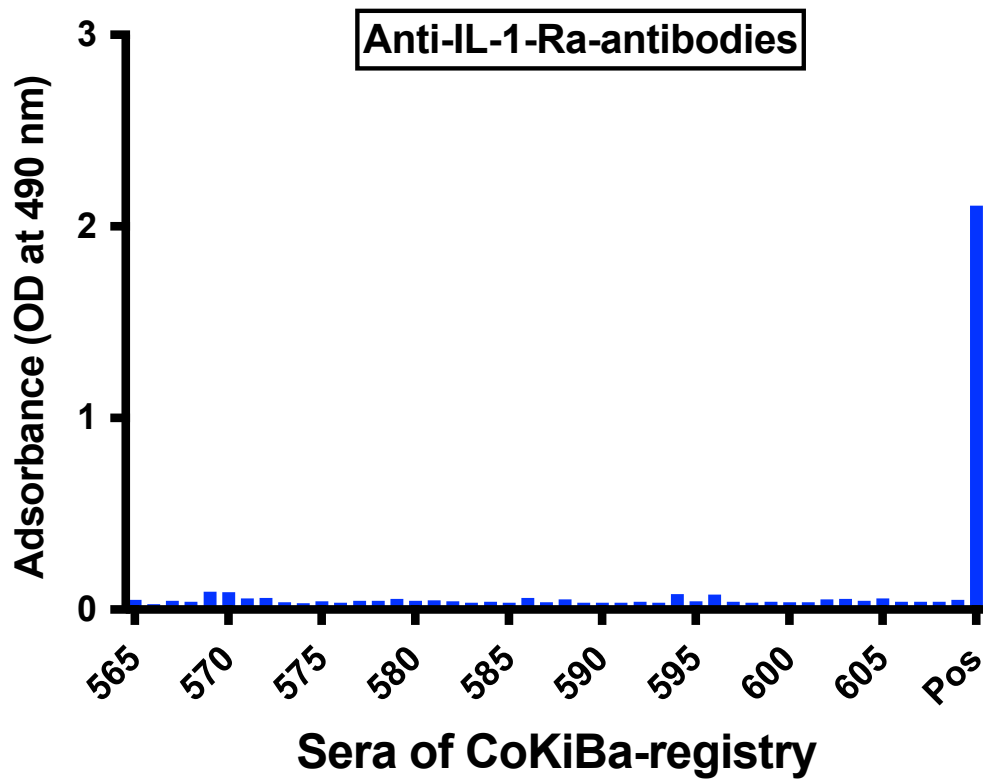
Supplementary Figure 3: A) ELISA of PGRN-Abs in children with sJIA in remission (5 of them under treatment with anakinra), and in IVIG-naive samples of active Kawasaki disease (1st cohort). B) PGRN plasma levels in MIS-C, 1st cohort of patients with KD, and sJIA. C) ELISA of IL-1-Ra-Abs and PGRN-Abs in 18 patients (KD7 to KD24) comprising the 2nd cohort of patients with KD.

Supplementary Figure 4)



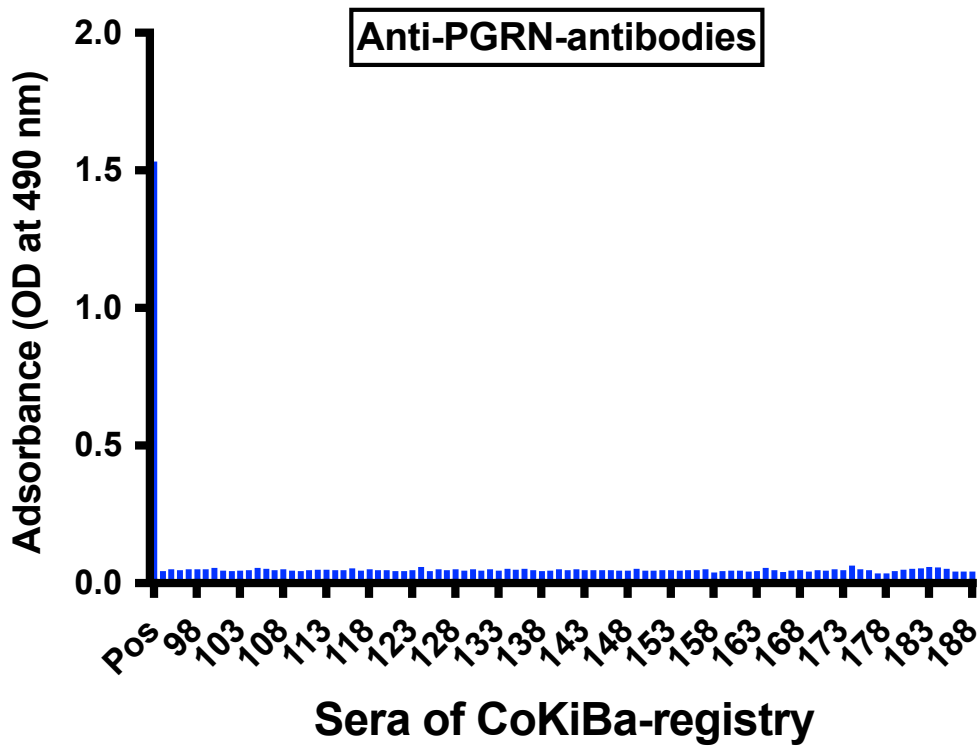
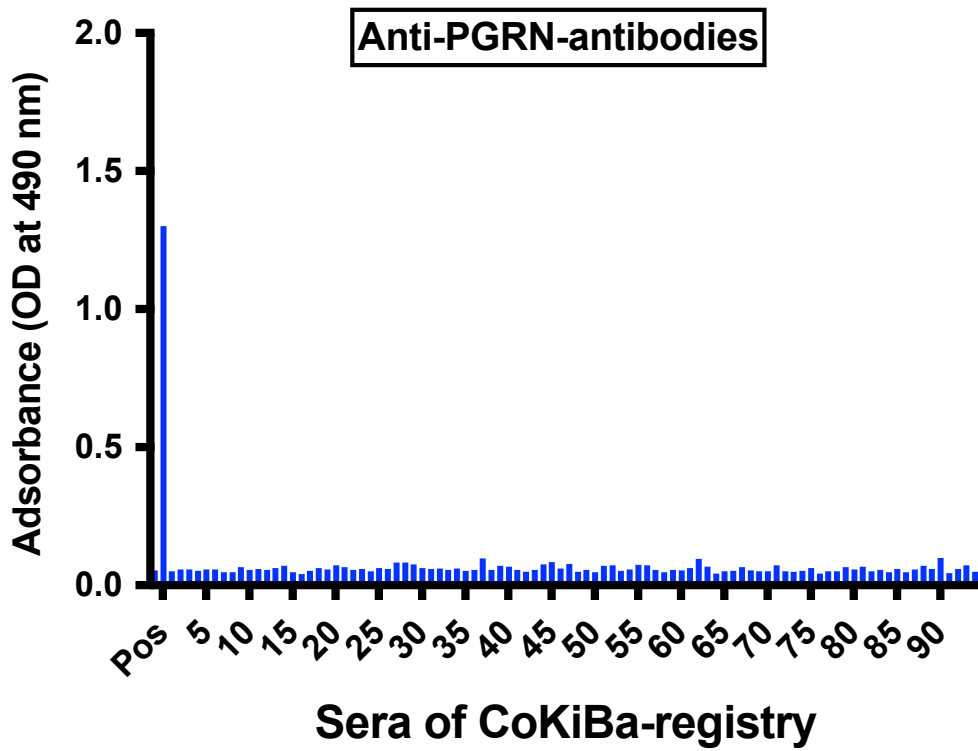


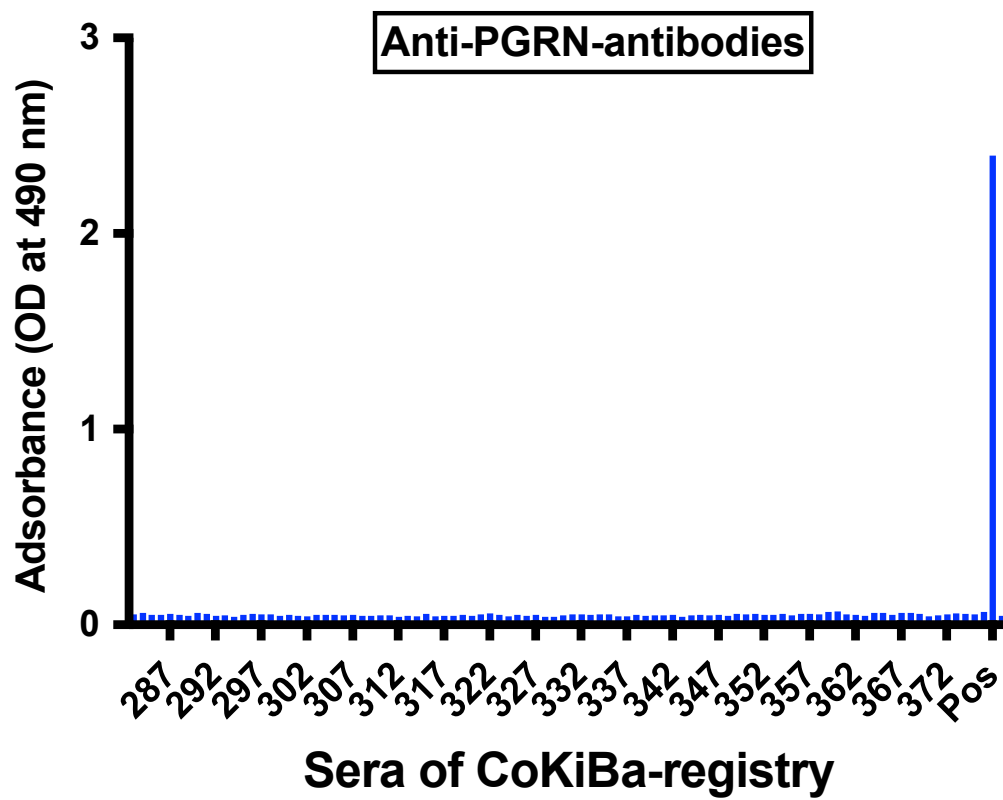
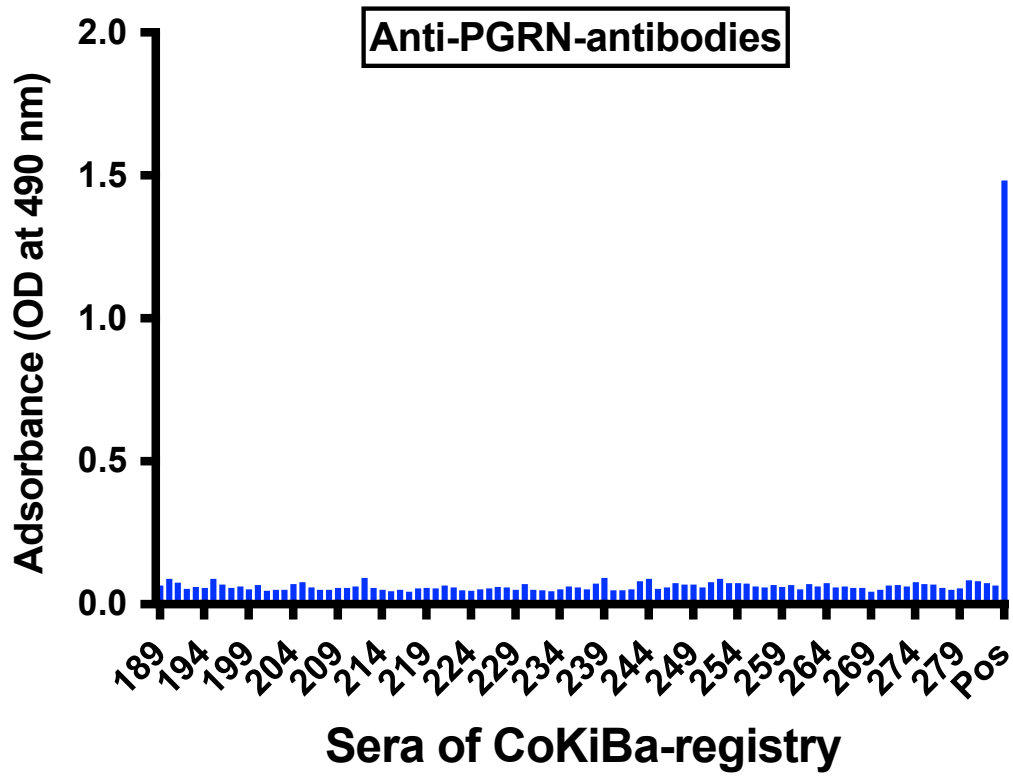


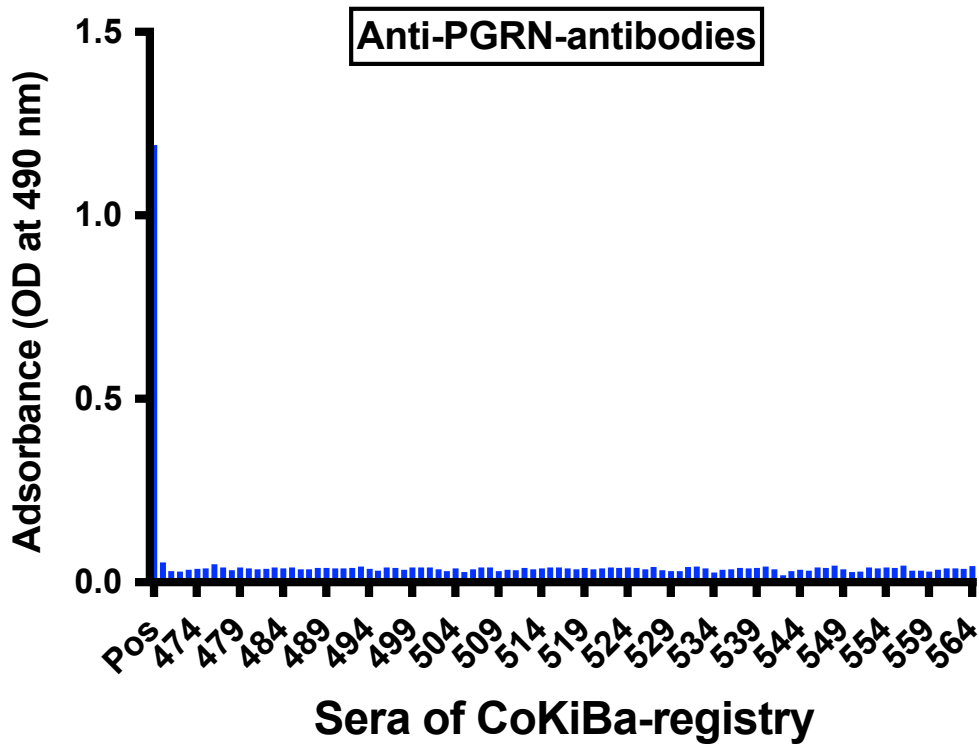
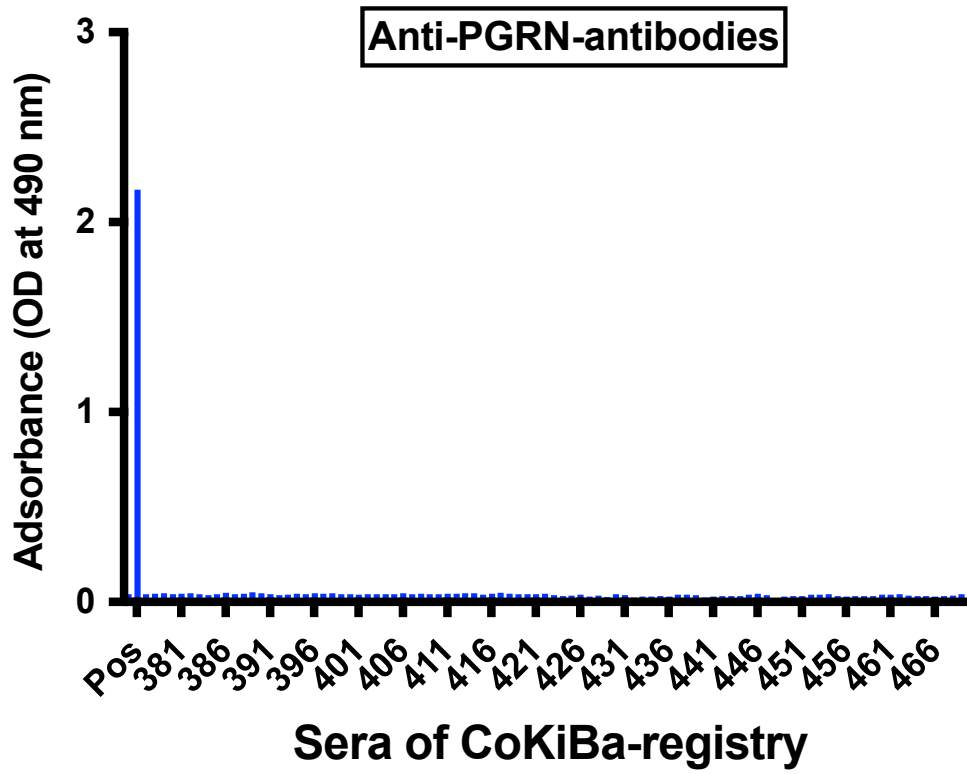


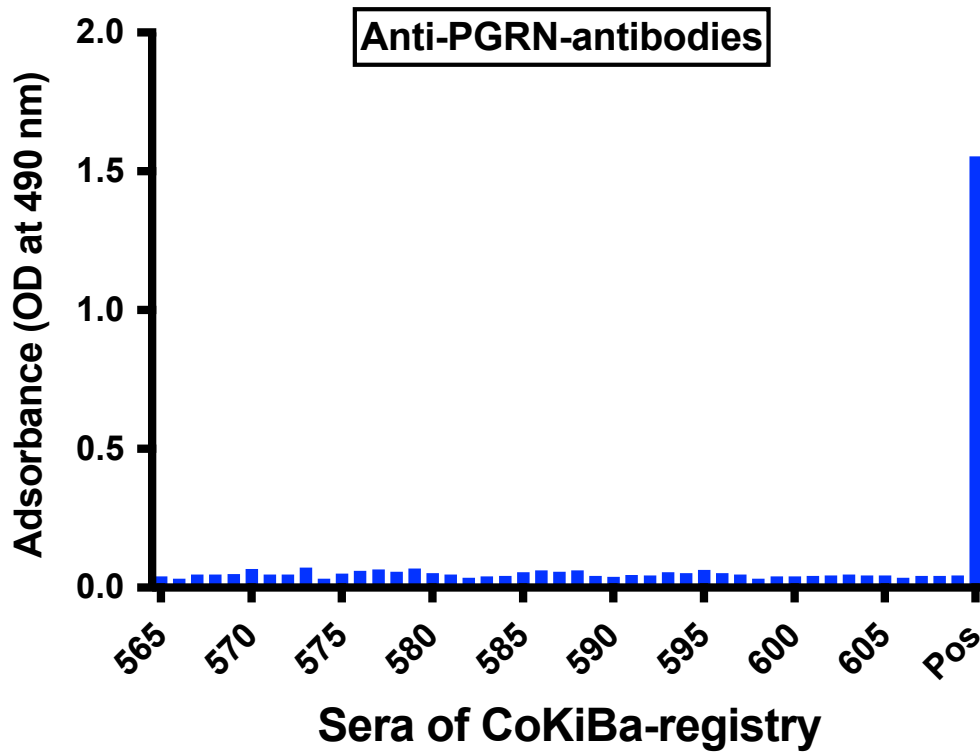
Supplementary Figure 4: ELISA of IL-1-Ra-Abs in samples of 608 children of the CoKiBa registry. Samples were obtained 3 months after the first wave of COVID-19 in Bavaria. 146 children had a positive SARS-CoV-2 serology, 462 had a SARS-CoV-2-negative serology and were healthy controls (see supplementary table 1). ELISA were performed blinded. IL-1-Ra-Abs were not detected in any of the 608 children.

Supplementary Figure 5)



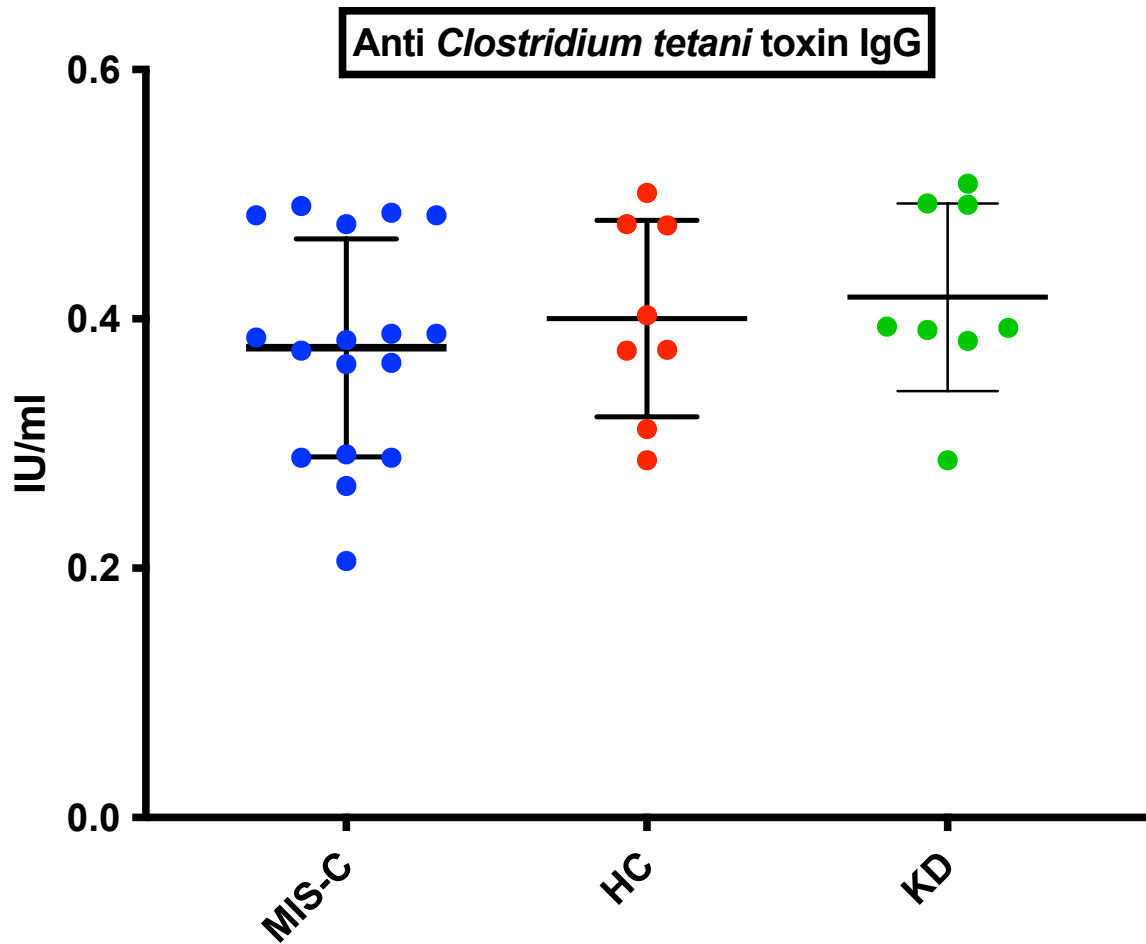






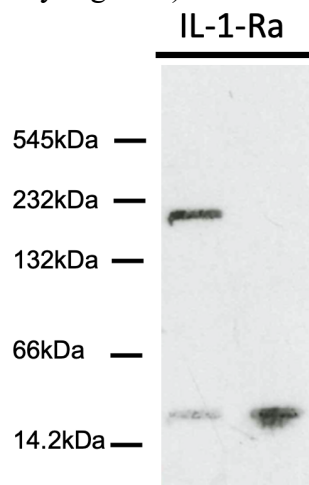
Supplementary Figure 5: ELISA of PGRN-Abs in samples of 608 children of the CoKiBa registry. Samples were obtained 1-3 months after the first wave of COVID-19 in Bavaria. 146 children had a positive SARS-CoV-2 serology, 462 had a SARS-CoV-2-negative serology and were healthy controls (see supplementary table 1). ELISA were performed blinded. PGRN-Abs were not detected in any of the 608 children.

Supplementary Figure 6)



Supplementary Figure 6: Anti *tetanus toxin* IgG antibodies in MIS-C, healthy controls and patients with Kawasaki disease. All individuals had antibody titers compatible with reliable protection.

Supplementary Figure 7)

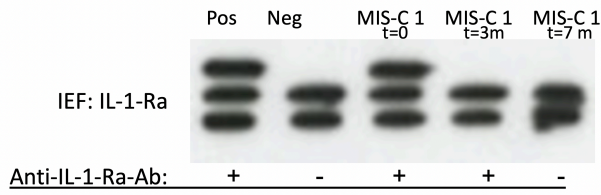


Patient PIMS-I	t=0	t=7m
IL-1-Ra-Ab	pos	neg

Supplementary Figure 7: WB of IL-1-Ra of total plasma protein in a native, gradient gel under non-reducing conditions of patient MIS-C-I at presentation with acute inflammation and seropositive for IL-1-Ra-Abs of IgG class and 7 months later without IL-1-Ra-Abs.

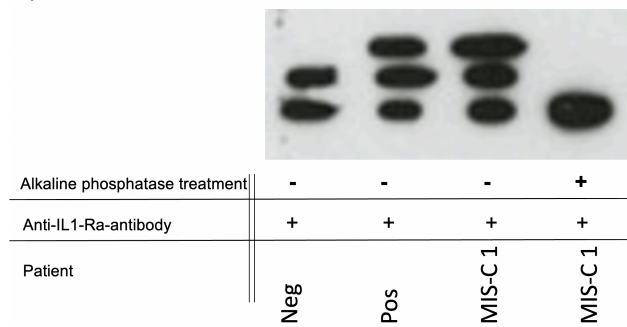
Supplementary Figure 8: **Isoelectric focusing and Western blot of IL-1Ra**

A)



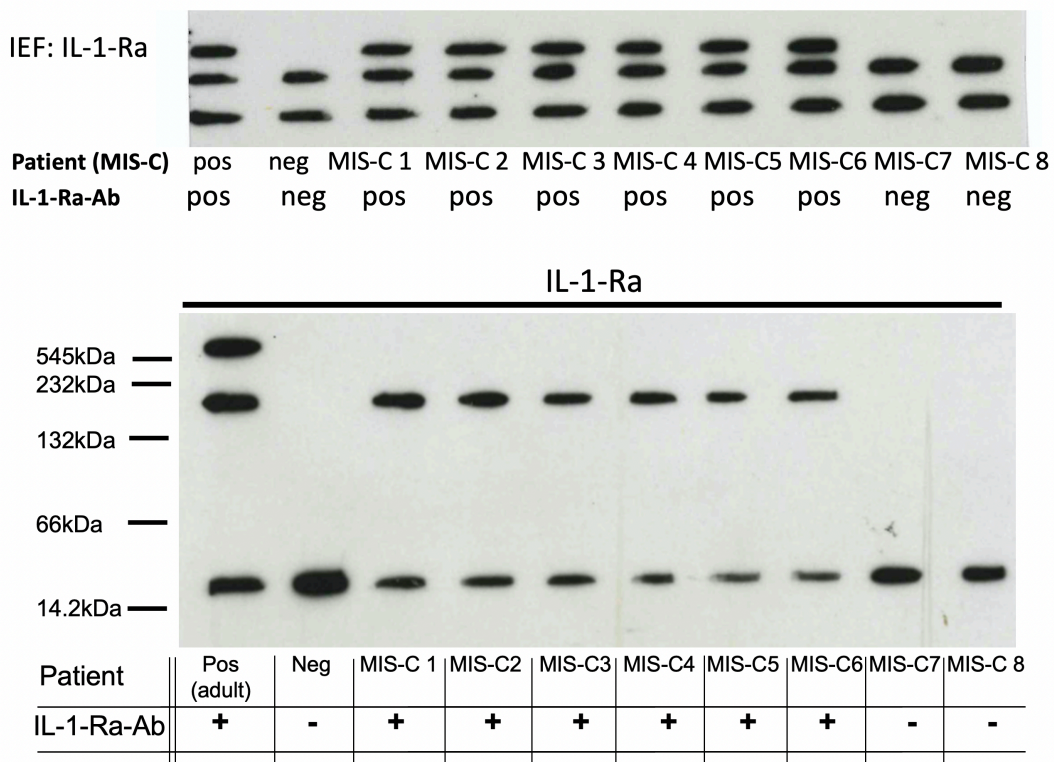
(A) Isoelectric focusing (IEF) of IL-1Ra from samples in course of acute inflammation of one selected MIS-C patient (MIS-C 1) and in the follow-up. Anti-IL-1Ra antibody status of respective samples is indicated by +/-.

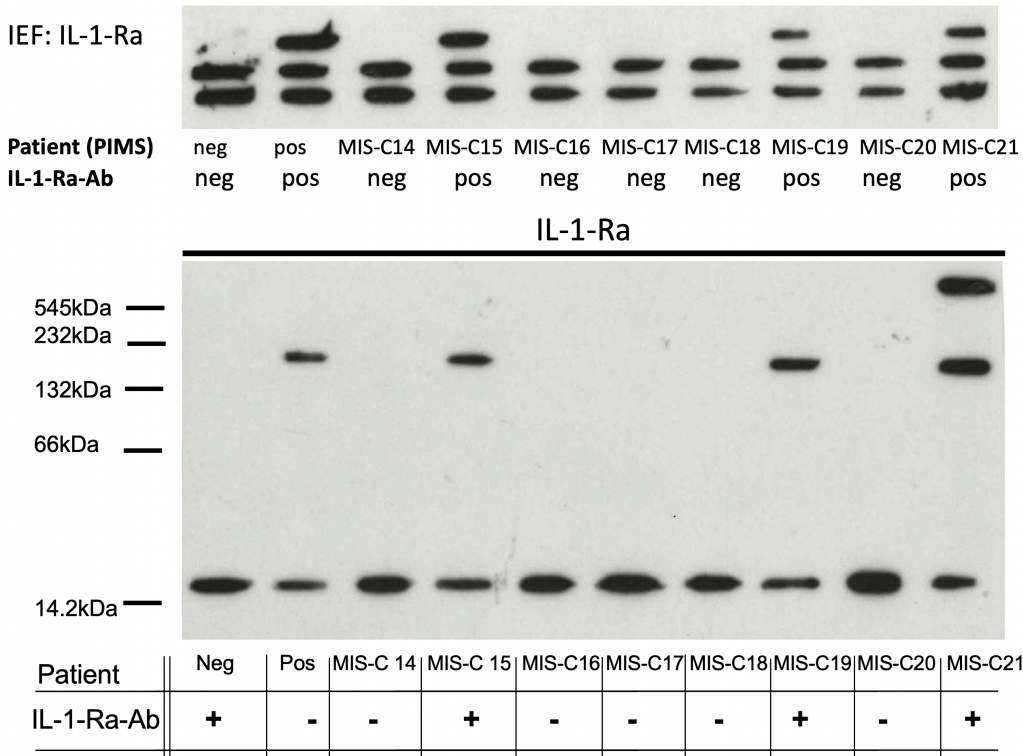
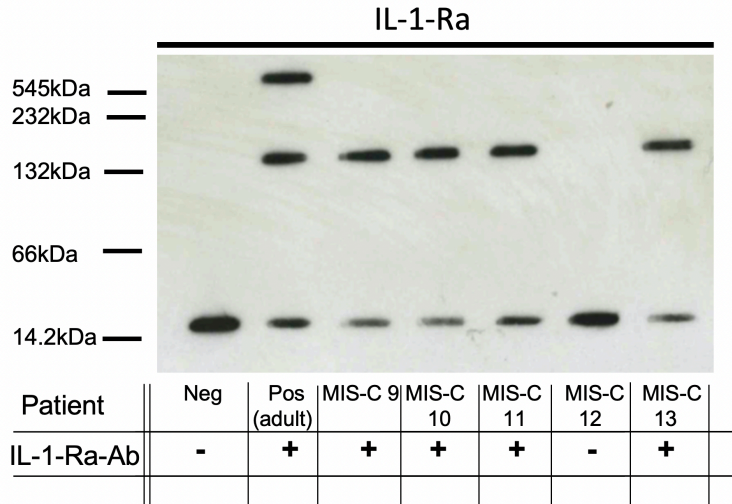
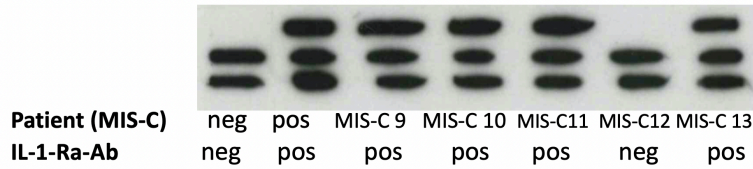
B)



(B) Alkaline phosphatase treatment of IL-1-Ra from the plasma of a single MIS-C patient with available follow-up samples.

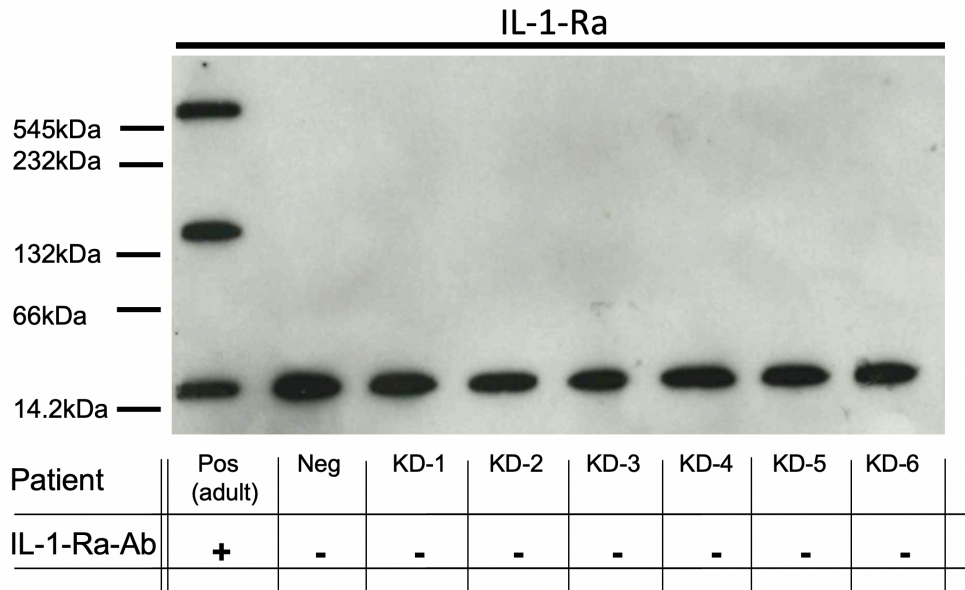
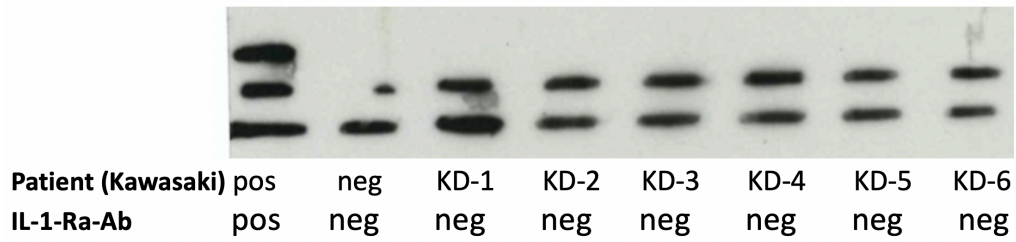
C)





C) IEF and native gradient SDS PAGE and Western-blots of IL-1Ra in 21 consecutive patients with MIS-C (n=21) of IL-1-Ra in patients with MIS-C (C, n=21). Positive control was in the first two gradient SDS PAGEs was plasma of an adult with critical COVID-19 and IL-1-Ra-Abs of IgG and IgM class, and in the third SDS PAGE a patient with IL-1-Ra-Abs of IgG class, negative control of a healthy individual without IL-1-Ra-Abs.

E)



E) IEF and native gradients SDS PAGE and Western-blot of IL-1Ra in patients with Kawasaki disease (KD; D, n=6).

Test details for comparison of IL-1Ra plasma level

Dunnett's T3 multiple comparisons test	Mean Diff,	95.00% CI of diff,	Below threshold?	Summary	ed P Value				
MIS-C (IL-1-RA-Ab neg) vs. MIS-C (IL-1-RA-Ab pos)	1466	1186 to 1747	Yes	****	<0.0001	A-B			
MIS-C (IL-1-RA-Ab neg) vs. KD	708.1	144.5 to 1272	Yes	**	0.0068	A-C			
MIS-C (IL-1-RA-Ab neg) vs. sJIA	467.6	51.81 to 883.3	Yes	*	0.0108	A-D			
MIS-C (IL-1-RA-Ab pos) vs. KD	-758.2	-1361 to -155.6	Yes	**	0.0094	B-C			
MIS-C (IL-1-RA-Ab pos) vs. sJIA	-998.7	-1384 to -613.0	Yes	****	<0.0001	B-D			
KD vs. sJIA	-240.6	-820.6 to 339.5	No	ns	0.6172	C-D			
Test details	Mean 1	Mean 2	Mean Diff,	SE of diff,	n1	n2	t	DF	
MIS-C (IL-1-RA-Ab neg) vs. MIS-C (IL-1-RA-Ab pos)	1746.0	279.4	1466	72.65	8	13	20.18	7733	
MIS-C (IL-1-RA-Ab neg) vs. KD	1746.0	1038	708.1	146.0	8	6	4.85	8.01	
MIS-C (IL-1-RA-Ab neg) vs. sJIA	1746.0	1278	467.6	124.3	8	10	3.76	15.21	
MIS-C (IL-1-RA-Ab pos) vs. KD	279.4	1038	-758.2	128.7	13	6	5.891	5.16	
MIS-C (IL-1-RA-Ab pos) vs. sJIA	279.4	1278	-998.7	103.5	13	10	9.654	9.45	
KD vs. sJIA	1038	1278	-240.6	163.5	6	10	1.471	10.96	

Test details for comparison of IL-1Ra plasma level (with exclusion of 2 MIS-C cases, who had received IVIGs)

Dunnett's T3 multiple comparisons test	Mean Diff,	95.00% CI of diff,	Below threshold?	Summary	ed P Value				
MIS-C (IL-1-RA-Ab neg) vs. MIS-C (IL-1-RA-Ab pos)	1471	1188 to 1754	Yes	****	<0.0001	A-B			
MIS-C (IL-1-RA-Ab neg) vs. KD	708.1	144.5 to 1272	Yes	**	0.0068	A-C			
MIS-C (IL-1-RA-Ab neg) vs. sJIA	467.6	51.81 to 883.3	Yes	*	0.0108	A-D			
MIS-C (IL-1-RA-Ab pos) vs. KD	-762.6	-1367 to -158.3	Yes	**	0.0093	B-C			
MIS-C (IL-1-RA-Ab pos) vs. sJIA	-1003	-1380 to -626.2	Yes	****	<0.0001	B-D			
KD vs. sJIA	-240.6	-820.6 to 339.5	No	ns	0.6172	C-D			
Test details	Mean 1	Mean 2	Mean Diff,	SE of diff,	n1	n2	t	DF	
MIS-C (IL-1-RA-Ab neg) vs. MIS-C (IL-1-RA-Ab pos)	1746	275.0	1471	73.31	8	11	20.06	8.002	
MIS-C (IL-1-RA-Ab neg) vs. KD	1746	1038	708.1	146.0	8	6	4.85	8.01	
MIS-C (IL-1-RA-Ab neg) vs. sJIA	1746	1278	467.6	124.3	8	10	3.76	15.21	
MIS-C (IL-1-RA-Ab pos) vs. KD	275.0	1038	-762.6	129.1	11	6	5.908	5.22	
MIS-C (IL-1-RA-Ab pos) vs. sJIA	275.0	1278	-1003	103.9	11	10	9.653	9.615	
KD vs. sJIA	1038	1278	-240.6	163.5	6	10	1.471	10.96	

Kits and Antibodies

Product/Kit	Source/Provider	City	Country
episomal one-vector system with cytomegalovirus promoter (pSFI)	Bornkamm GW et al., GSF-Institut für Klinische Molekularbiologie und Tumorgenetik	München	Germany
Nunc MaxiSorp plates	eBioscience	Frankfurt a.M.	Germany
murine anti-FLAG (DYKDDDDK) monoclonal antibody F3165	Sigma-Aldrich	München	Germany
biotinylated goat antihuman heavy and light chain IgG	Dianova	Hamburg	Germany
sheep antihuman IgG1, IgG2, IgG3, and IgG4	Binding Site Group	Birmingham	UK
goat antihuman IgM	Dianova	Hamburg	Germany
goat antihuman IgA	Dianova	Hamburg	Germany
Peroxidase-labelled streptavidin	Roche Applied Science	Indianapolis, IN	USA
Anti Clostridium tetani tetanus toxin IgG ELISA #82861	Argio Biolaboratories	Hsinchu City	Taiwan
FastAP Thermosensitive Alkaline Phosphatase #EF0651	Fermentas/VWR	Darmstadt	Germany
IL1RA Human ELISA Kit; #BMS2080	Thermo Fisher Scientific	Waltham, MA	USA
PGRN ELISA kit; AG-45A-0018YEK-KI01	AdipoGen	Incheon	South Korea
HEK-Blue IL-1 β Cells; #hkb-il1bv2	Invivogen	San Diego, CA	USA
QUANTI-Blue; #hkb-il1bv2	Invivogen	San Diego, CA	USA
Recombinant IL-1Ra; #PPT-AF-2000-01RA	Biozol	Eching	Germany
rabbit anti human IL-1Ra antibody; #ABIN2856394	antibodies-online	Aachen	Germany
recombinant SLP2 antibody at 5 μ g/mL #ab191883	Abcam	Cambridge	UK
IL-1 β ; #PPT-200-01B; Biozol	Biozol	Eching	Germany
TNF- α ; #PPT-300-01A	Biozol	Eching	Germany