

Supplementary Table 1: Study participants

Participant	Study Group	Sex	Age	Time from symptom onset	Disease	Notes
1	1	Male	38	n/a	Pneumonia, Alcohol and drug excess	
2	1	Female	61	n/a	Pneumonia, pulmonary oedema, Granulomatosis with polyangitis	
3	1	Male	68	n/a	Epidural abscess	
4	1	Male	76	n/a	Aspiration pneumonia on background of multifocal motor neuropathy	
5	1	Male	49	n/a	Enterococcal sepsis, subdural haematoma	
6	1	Male	81	n/a	Multiorgan failure	
7	1	Male	29	n/a	Renal infarction	
8	1	Male	64	n/a	Major trauma	
9	1	Female	87	n/a	Pneumonia, acute respiratory distress syndrome	
10	1	Male	64	n/a	Pneumonia, acute kidney injury	
11	1	Female	76	n/a	Rhabdomyolysis, ischaemic stroke	
12	1	Female	50	n/a	Variceal bleed, alcohol misuse	
13	1	Female	33	n/a	Acute asthma	
14	1	Male	49	n/a	Aortic root abscess, aortic valve replacement	
15	1	Female	74	n/a	Aortic valve replacement, disseminated intravascular coagulation	
16	1	Male	50	n/a	Influenza, Staphylococcal pneumonia	
17	1	Female	58	n/a	CMV pneumonitis, pneumonia, HHV8 encephalitis	
18	1	Female	51	n/a	Infective arthritis, acute kidney injury	

19	1	Female	88	n/a	Pneumonia, chronic inflammatory demyelinating polyneuropathy	
20	1	Male	70	n/a	Acute renal failure	
21	1	Female	34	n/a	HELLP syndrome, E coli sepsis, liver abscess	
22	1	Female	30	n/a	Anaphylaxis	
23	1	Male	56	n/a	Pneumonia	
24	1	Male	67	n/a	Out of hospital cardiac arrest	
25	1	Female	76	n/a	Peritonitis, large bowel perforation	
26	1	Female	68	n/a	Neuroleptic malignant syndrome	
27	1	Female	37	n/a	Major trauma	
28	1	Male	74	n/a	Pneumonia	
29	1	Male	75	n/a	ARDS, ventilator associated pneumonia post oesophagectomy	
30	1	Male	67	n/a	Type 2 respiratory failure	
31	1	Male	59	n/a	Upper gastrointestinal bleed, multiorgan failure	
32	1	Female	26	n/a	Acute kidney injury, placental abruption, haemorrhagic shock	
33	2	Male	64	34	COVI D-19	
34	2	Male	60	20	COVI D-19	
35	2	Male	60	23	COVI D-19	
36	2	Male	47	20	COVI D-19	
37	2	Male	50	25	COVI D-19	
38	2	Male	42	17	COVI D-19	
39	2	Male	50	24	COVI D-19	

40	2	Male	67	13	COVI D-19	Ankylosing spondylitis and colitis, not on treatment
41	2	Male	60	18	COVI D-19	
42	2	Male	52	16	COVI D-19	Previous reactive arthritis (2003) with 1/40 ANA
43	2	Male	71	14	COVI D-19	
44	2	Male	39	25	COVI D-19	
45	2	Male	21	14	COVI D-19	Primary immunodeficie ncy
46	2	Female	51	20	COVI D-19	
47	2	Male	71	16	COVI D-19	
48	2	Female	44	21	COVI D-19	
49	2	Male	69	12	COVI D-19	
50	2	Female	56	13	COVI D-19	
51	2	Male	55	22	COVI D-19	
52	2	Male	51	26	COVI D-19	

53	2	Male	58	21	COVI D-19	
54	2	Male	49	10	COVI D-19	
55	2	Male	52	30	COVI D-19	
56	2	Male	61	17	COVI D-19	
57	2	Female	63	13	COVI D-19	
58	3	Female	55	112	COVI D-19	
59	3	Male	48	105	COVI D-19	
60	3	Male	47	118	COVI D-19	
61	3	Male	56	98	COVI D-19	
62	3	Male	45	100	COVI D-19	
63	3	Male	51	117	COVI D-19	
64	3	Male	37	82	COVI D-19	
65	3	Male	51	118	COVI D-19	
66	3	Female	51	116	COVI D-19	
67	3	Male	62	118	COVI D-19	
68	3	Male	56	115	COVI D-19	

69	3	Female	67	130	COVI D-19	
70	3	Male	62	115	COVI D-19	
71	3	Male	56	147	COVI D-19	
72	3	Male	49	147	COVI D-19	
73	3	Male	54	178	COVI D-19	Rheumatoid arthritis (CCP+ RF+, ANA-)
74	3	Female	57	169	COVI D-19	
75	3	Female	70	204	COVI D-19	
76	3	Male	43	153	COVI D-19	
77	3	Male	45	176	COVI D-19	
78	3	Male	60	125	COVI D-19	Type 1 diabetes, seronegative inflammatory arthritis
79	3	Male	37	173	COVI D-19	
80	3	Male	65	179	COVI D-19	Renal transplant (primary renal disease unknown)
81	3	Male	33	165	COVI D-19	
82	3	Male	49	172	COVI D-19	
83	3	Male	65	180	COVI D-19	
84	3	Male	69	172	COVI D-19	
85	3	Female	54	151	COVI D-19	
86	3	Male	50	161	COVI D-19	

87	3	Male	62	192	COVI D-19	
88	3	Male	22	170	COVI D-19	Primary immunodeficie ncy
89	3	Male	63	166	COVI D-19	
90	3	Male	46	148	COVI D-19	
91	3	Male	61	176	COVI D-19	
92	3	Male	56	163	COVI D-19	
93	4	Female	39	45	COVI D-19	
94	4	Female	51	41	COVI D-19	
95	4	Female	35	38	COVI D-19	
96	4	Female	43	47	COVI D-19	
97	4	Female	63	43	COVI D-19	
98	4	Female	41	34	COVI D-19	
99	4	Female	50	29	COVI D-19	
100	4	Male	45	47	COVI D-19	
101	4	Female	27	32	COVI D-19	
102	4	Female	49	46	COVI D-19	
103	4	Female	32	42	COVI D-19	
104	4	Female	57	37	COVI D-19	
105	4	Female	51	26	COVI D-19	
106	4	Unkno wn	36	30	COVI D-19	
107	4	Male	45	37	COVI D-19	

108	4	Female	31	22	COVI D-19	
109	4	Female	49	32	COVI D-19	
110	4	Male	49	47	COVI D-19	
111	4	Female	51	45	COVI D-19	
112	4	Female	57	30	COVI D-19	
113	4	Female	29	39	COVI D-19	
114	4	Male	34	39	COVI D-19	
115	4	Female	48	38	COVI D-19	
116	4	Female	41	32	COVI D-19	

Supplementary Table 2: Summary of initial serum dilutions for indirect immunofluorescence assays and typical clinical association of autoantibodies

Tissue	Isotype	Method	Starting dilution	Threshold for strong positive	Clinical association
Adrenal	IgG	Indirect immunofluorescence using Inova kit	1/5	Qualitative	Addison's Disease
Autoimmune encephalitis screen	IgG	Indirect immunofluorescence using Euroimmun kit	1/10	Qualitative	Autoimmune encephalitis, paraneoplastic encephalitis
ANA	IgG	Indirect immunofluorescence using Inova kit	1/100	Equal to or greater than 1/100	Non-specific; high sensitivity for systemic lupus erythematosus, drug induced lupus
ANCA	IgG	Indirect immunofluorescence using Inova kit	1/20	Equal to or greater than 1/40	Small vessel vasculitis
Cardiac	IgG	Indirect immunofluorescence using Inova kit	1/5	Qualitative	Dressler's syndrome
Endomysial	IgA	Indirect immunofluorescence using Inova kit	1/10	Qualitative	Coeliac disease
Epidermal (IC)	IgG	Indirect immunofluorescence using Inova kit	1/10	Qualitative	Pemphigus vulgaris
Epidermal (BM)	IgG	Indirect immunofluorescence using Inova kit	1/10	Qualitative	Bullous pemphigoid
Islet cell antibodies	IgG	Indirect immunofluorescence using Inova kit	1/5	Qualitative	Type 1 diabetes
Purkinje cell antibodies	IgG	Indirect immunofluorescence using Inova kit	1/50	Qualitative	Paraneoplastic encephalitis
Smooth muscle antibodies	IgG	Indirect immunofluorescence using Inova kit	1/20	Equal to or greater than 1/40	Autoimmune hepatitis (type 1)
Gastric parietal cell antibodies	IgG	Indirect immunofluorescence using Inova kit	1/20	Qualitative	Atrophic gastritis Pernicious anaemia
Skeletal muscle antibodies	IgG	Indirect immunofluorescence using Inova kit	1/5	Qualitative	Myasthenia gravis (typically when associated with thymoma)