Supplementary Data

Supplementary Table S1

A

Descriptive

	N	Missing	Mean	Median	Minimum	Maximum
Samples	63	0				
Age (years)	62	1	46.9	48	18	81
Time elapsed (days)	56	7	105	91.5	21	328

B

	Lung injury		
Sex	0	1	Total
Female	10	3	13
Male	23	27	50
Total	33	30	63

Samples description. Panel A shows the main features of the samples collected. The time elapsed is the interval between the date of the molecular test positivity and the date of sera collection. Panel B shows the samples reporting lung injury (coded as 0 = non-injury and 1 = injury) stratified by gender.

Supplementary Table S2

Model Fit Measures

							Overall Model Test		
Model	Deviance	AIC	BIC	R^2McF	R^2CS	R^2N	χ^2	df	p
1	68.5	74.5	80.9	0.215	0.257	0.343	18.7	2	0.00009

Omnibus Likelihood Ratio Tests

Predictor	χ^2	df	p
Membrane OD/cut-off	6.169	1	0.013
SPIke_OD/cutoff	0.604	1	0.43691

Model Coefficients - Lung injury

						95% Confidence Interval	
Predictor	Estimate	SE	Z	p	Odds ratio	Lower	Upper
Intercept	-2.886	0.884	-3.266	0.00109	0.0558	0.00988	0.315
Membrane OD/cut-off	1.551	0.756	2.053	0.04009	4.7161	1.0727	20.734
SPIke_OD/cutoff	0.188	0.243	0.776	0.43792	1.2073	0.75003	1.943

Interaction, Membrane-Spike, main effect. The interaction between IgG anti-M antibodies and IgG anti-Spike antibodies, analysed by the logit function, resulted in a loss of statistical significance for the Spike protein and a lower odds ratio for the M protein.

Supplementary Table S3

Model Fit Measures

							Overall Model Test	
Model	Deviance	AIC	BIC	R^2McF	R^2CS	R^2N	χ^2	df	p
1	65.7	71.7	78.1	0.246	0.289	0.386	21.5	2	0.00002

Omnibus Likelihood Ratio Tests

Predictor	χ^2	df	p
Membrane OD/cut-off	12	1	0.00053
Nucl_OD/cutoff	3.35	1	0.06707

Model Coefficients - Lung injury

						95% Confidence Interval	
Predictor	Estimate	SE	Z	p	Odds ratio	Lower	Upper
Intercept	-3.414	0.958	-3.56	0.00037	0.0329	0.00503	0.215
Membrane OD/cut-off	1.619	0.597	2.71	0.00666	5.0489	1.56768	16.261
Nucl_OD/cutoff	0.365	0.203	1.79	0.07312	1.4399	0.96642	2.145

Interaction, Membrane-Nucleocapsid, main effect. As observed for the Spike protein**,** the interaction between IgG anti-M antibodies and IgG anti-Nucleocapsid antibodies, analysed by the logit function, resulted in a loss of statistical significance for the Nucleocapsid protein and a lower odds ratio for the M protein.

Supplementary Table S4

Target genes	Oligonucleotides 5'-3'	Bps position NC_045512	Restriction enzymes	Recombinant proteins
S1 forward	*GATCGATGGATCCTG***GCACTTGACCCTCTCTCAG**	22436-22454	BamHI	YP_009724390 AA 292-573
S1 reverse	*AGCTTCAAGCTTTAAAG***AGTAGTGTCAGCAATGTCTC**	23281-23262	HindIII	
N forward	*GATCGATGGATCCG***AATGTCTGATAATGGACCCCAAA**	28273-28295	BamHI	YP_009724397 AA 1-209
N reverse	*CGGATCAAGCTTTTA***TCTAGCAGGAGAAGTTCCCCTA**	287900-28879	HindIII	
M forward	*GATCGATGGATCCC***CATGTGGTCATTCAATCCA**	26846-26864	BamHI	YP_009724393 AA 109-222
M reverse	*AGCTTCAAGCTT***TTACTGTACAAGCAAAGCAATAT**	27191-27169	HindIII	

Primers used to produce the recombinant proteins. The table shows the three pairs of oligonucleotides used to amplify and clone the three coding sequences. The underlined sequences indicate the restriction sites used for cloning. The bases position of the resulting amplicons and the protein fragments produced with their respective accession numbers are also shown. S = Spike; N = Nucleocapsid; M = Membrane.

Supplementary Table S5

Contingency Table

	AB0				
Lung injury	A	AB	B	0	Total
0	12	3	4	4	23
1	5	0	3	13	21
Total	17	3	7	17	44

χ^2 Test

	Value	df	p
χ^2	10.7	1	0.0133
N	63		

Effect size

	Value
Cramer's V	0.494

Supplementary Table S5. Correlation between AB0 blood group and lung injury. Data on AB0 blood group were available for 44 subjects. The blood group distribution is shown stratified by lung injury (lung injury: 0 = absence; 1 = presence) together with the result of the χ2 association test and the effect size.

Supplementary Table S6

Contingency Tables

	Lung injury		
Age 0-1	0	1	Total
0	7	0	7
1	26	29	55
Total	33	29	62

χ^2 Test

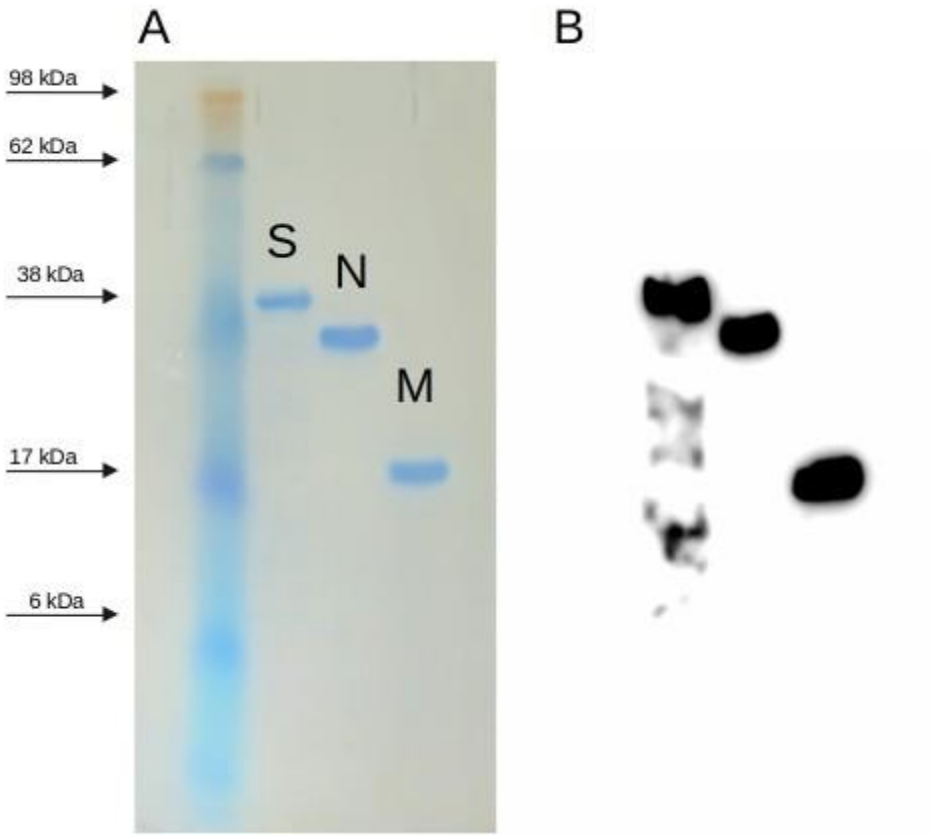
	Value	df	p
χ^2	6.93	1	0.0084
Fisher’s exact test			0.012
N	63		

Effect size

	Value
Cramer's V	0.334

Supplementary Table S6. Correlation between age and lung injury. Subjects were classified into two subgroups by age (age <30 years = 0; age >30 years = 1), stratified by lung injury (lung injury: 0 = absence; 1 = presence) and analyzed using the χ2 association test.

Supplementary Figure S1



Production of recombinant proteins. In Panel A, the three recombinant proteins (Spike, Nucleocapsid, Membrane protein) separated by polyacrylamide gel electrophoresis (PAGE) and stained by Coomassie blue are shown. Panel B depicts a replicate of the same PAGE, where the proteins were subsequently blotted and detected by a monoclonal antibody targeting the polyhistidine tail of the fusion proteins. S = Spike; N = Nucleocapsid; M = membrane.