



Guangdong Wesail Biotech Co., Ltd. 

COVID-19 Neutralizing Antibody Test Kit (Colloidal gold) Clinical evaluation report

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1. Introduction

The novel coronavirus spread in the world in early 2020, and the COVID-19 has brought great impact to world public health. When the virus invades the body, the body will produce protective neutralizing antibody, which can reduce the invasion of the virus. By vaccinating with the COVID-19 vaccination to producing neutralizing antibodies, which can help people prevent and treat the COVID-19.

SARS-CoV-2 has several structural proteins including spike (S), envelope (E), membrane (M) and nucleocapsid (N). The viral Spike protein is an important receptor binding protein that is located on the surface of coronavirus. It contains a receptor binding domain (RBD), which can recognize the angiotensin converting enzyme-2 (ACE2) receptor on the surface of target cells, mediating the membrane fusion of coronavirus and cell. Those neutralizing antibodies develop either in response to natural infection or to vaccination, then subsequently bind to the virus and block infection. The interaction between the RBD of the viral spike glycoprotein and the neutralizing antibody, thereby specifically prevent cells from being infected by SARS-CoV-2. To measure a vaccine's effectiveness, it is critical to identify both the presence of these neutralizing antibodies as well as quantitatively assess the likely level needed to protect against future encounters with the virus.

Guangdong Wesail Biotech Co., Ltd COVID-19 Neutralizing Antibody Test Kit is a colloidal gold chromatographic immunoassay for semi-quantitative detection of SARS-CoV-2 neutralizing antibody. The kit is simple to operate, rapid and highly sensitive. During testing, the capture of SARS-CoV-2 neutralizing antibody forms a colored line in test line region. Users can easily determine the presence of the SARS-CoV-2 neutralizing antibody in human serum, plasma or whole blood samples. This kit is helpful to assist in assessing the protective effect of the COVID-19 vaccination. The test results are for clinical reference only and cannot be used as a basis for diagnosis.

2. Abstract

COVID-19 Neutralizing Antibody Test Kit was used to carry out clinical studies to evaluate its comparative accuracy. The sensitivity and specificity were measured with 613 samples, including 505 negative samples and 108 positive samples, in a blinded experiment. The results revealed sensitivity (positive percent agreement) of 95.4% and specificity (negative percent agreement) of 98.4%. The overall percent agreement was 97.9%.

3. Aim of the research

The purpose is to evaluate the performance of the Guangdong Wesail Biotech Co., Ltd COVID-19 Neutralizing Antibody Test Kit for rapid semi-quantitative detection of SARS-CoV-2 neutralizing antibody in human serum, plasma or whole blood samples.

4. Management

This clinical study was conducted by Guangdong Wesail Biotech Co., Ltd. Clinical samples were provided by voluntary blood donors who have received COVID-19 vaccination from the local hospital. Throughout the research process, the test reagents should be under effective quality control to ensure the accuracy and repeatability of the test data. Guangdong Wesail Biotech Co., Ltd was responsible for providing the test reagents and other related expenses for this research.

5. Experimental design

5.1 Overall experimental design

This clinical study applied a blinded experiment to evaluate the results of test reagent. Negative samples of unvaccinated persons and positive samples of vaccinated persons at different stages were collected by the first operator and the samples were randomly coded. Another operator performed the test once using the randomly coded samples according to the instructions and recorded the results. After the experiment was completed, the operator was unblinded and the results were compared.

5.2 Bias reduction

- ✧ The experimental population should be strictly selected according to the standardized criteria of clinical research to reduce selection bias.
- ✧ Participated researchers should receive professional training in the use of protocol and test reagents prior to the clinical study to ensure that the experimental procedures and operation are properly followed.
- ✧ The researchers should conduct a pilot study to identify potential problem areas and deficiencies in the research instruments and protocol in preparation of the complete study to minimize errors.
- ✧ The researchers must operate in strict accordance with the research plan and supervised by inspectors during the study to ensure that the protocol and operation is strictly followed.
- ✧ After the clinical study is completed, the researchers must ensure that all research data is stored securely. When problems are found, the database administrator should review the data through data query form to avoid recording errors.

5.3 Selection of clinical samples

Selection criteria: Sufficient amount of sample, clear tracking records. Sample collection and processing comply with reagent instructions or relevant regulation. The relevant information of the sample is complete and clear, including age, gender, date of vaccination and date of sample collection.

Exclusion criteria: Positive COVID-19 sample without date of vaccination and sample collection time. Negative sample not confirmed as unvaccinated sample. Sample that not been stored as required. Sample that the researcher considers as unqualified.

5.4 Clinical sample size

In this clinical study, 613 samples were tested with WESAIL COVID-19 Neutralizing Antibody Test Kit. It includes 505 negative samples and 108 positive samples.

5.5 Clinical evaluation criteria

Evaluate clinical performance of WESAIL COVID-19 Neutralizing Antibody Test Kit, and calculate the sensitivity (positive percent agreement) and specificity (negative percent agreement).

6. Result

6.1 Clinical performance

108 positive samples and 505 negative samples were tested with test reagent. Among the 108 positives samples tested, 5 of the results were tested negative. Among 505 negative samples tested, 8 of the results were tested positive. Based on these formulas:

$$\text{Sensitivity} = \frac{\text{Number of True Positive Test}}{(\text{Number of True Positive test} + \text{Number of False Negative Test})}$$

$$\text{Specificity} = \frac{\text{Number of True Negative Test}}{(\text{Number of True Negative test} + \text{Number of False Positive Test})}$$

The sensitivity (positive percent agreement) and specificity (negative percent agreement) were calculated as 95.4% and 98.4% respectively. The overall percent agreement was 97.9%. The results are shown in Table 1.

Table 1. Results of WESAIL COVID-19 Neutralizing Antibody Test Kit

WESAIL COVID-19 Neutralizing Antibody Test Kit	Positive	Negative	Total
Positive	103	8	111
Negative	5	497	502
Total	108	505	613
Sensitivity	95.4% (103/108)		
Specificity	98.4% (497/505)		
Overall percent agreement	97.9% (600/613)		

6.2 Consistency of different sample types

Serum, EDTA-treated plasma, and whole blood samples of 15 negative and 15 positive patients were tested. The results of whole blood and plasma samples were 100% consistent with the results of serum samples. The results are shown in Table 2.

Table 2. Consistency of different sample types

No.	Serum	Plasma	Whole Blood
1	++	++	++
2	+	+	+
3	+++	+++	+++
4	++	++	++
5	+	+	+
6	+	+	+
7	++	++	++
8	+	+	+
9	+	+	+
10	+	+	+
11	++	++	++
12	+	+	+
13	++++	++++	++++
14	+	+	+
15	+	+	+
16	-	-	-
17	-	-	-

18	-	-	-
19	-	-	-
20	-	-	-
21	-	-	-
22	-	-	-
23	-	-	-
24	-	-	-
25	-	-	-
26	-	-	-
27	-	-	-
28	-	-	-
29	-	-	-
30	-	-	-
True positive rate (vs. serum)		100.0%	100.0%
True negative rate (vs. serum)		100.0%	100.0%
Accuracy		100.0%	100.0%

*“+”, “++”, “+++” and “++++” indicates the result of clinical diagnosis or test reagent is positive.

** “-” indicates the result of clinical diagnosis or test reagent is negative.

6.3 Conclusion

Evaluate clinical performance of WESAIL COVID-19 Neutralizing Antibody Test Kit, the sensitivity of WESAIL COVID-19 Neutralizing Antibody Test Kit was 95.4%, the specificity was 98.4% and the overall percent agreement was 97.9%.

Appendix 1. Evaluation data sheet of sample test results

(sample type: Serum)

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
1	40	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
2	36	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
3	43	Male	Serum	+++	2020/12/17	2020/10/21	2020/11/18
4	33	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
5	37	Female	Serum	+++	2020/12/17	2020/10/21	2020/11/18
6	40	Female	Serum	+++	2020/12/17	2020/10/21	2020/11/18
7	39	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
8	24	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
9	25	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
10	25	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
11	26	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
12	30	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
13	45	Female	Serum	-	2020/12/17	2020/8/12	2020/9/9
14	25	Male	Serum	++	2020/12/17	2020/8/12	2020/9/9
15	24	Male	Serum	+++	2020/12/17	2020/8/12	2020/9/9
16	27	Male	Serum	++++	2020/12/17	2020/8/12	2020/9/9
17	39	Female	Serum	+++	2020/12/17	2020/10/21	2020/11/18
18	39	Female	Serum	+++	2020/12/17	2020/10/21	2020/11/18
19	24	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
20	28	Male	Serum	+++	2020/12/17	2020/8/12	2020/9/9
21	23	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
22	24	Female	Serum	+++	2020/12/17	2020/10/21	2020/11/18
23	20	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
24	22	Male	Serum	+	2020/12/17	2020/8/12	2020/9/9
25	33	Female	Serum	+++	2020/12/17	2020/10/21	2020/11/18
26	28	Male	Serum	++	2020/12/17	2020/8/12	2020/9/9
27	47	Female	Serum	+	2020/12/17	2020/10/21	2020/11/18
28	33	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
29	25	Male	Serum	+	2020/12/17	2020/10/21	2020/11/18
30	47	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
31	35	Male	Serum	++	2020/12/17	2020/8/12	2020/9/9
32	26	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
33	39	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
34	33	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
35	23	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
36	44	Male	Serum	+++	2020/12/17	2020/10/21	2020/11/18
37	44	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
38	30	Female	Serum	+++	2020/12/17	2020/10/21	2020/11/18
39	47	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
40	39	Male	Serum	+++	2020/12/17	2020/8/12	2020/9/9
41	21	Male	Serum	++	2020/12/17	2020/10/21	2020/11/18
42	26	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
43	22	Female	Serum	+	2020/12/17	2020/10/21	2020/11/18
44	22	Female	Serum	+	2020/12/17	2020/10/21	2020/11/18
45	49	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
46	35	Male	Serum	++	2020/12/17	2020/10/21	2020/11/18
47	24	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
48	37	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
49	31	Female	Serum	+	2020/12/17	2020/10/21	2020/11/18
50	30	Male	Serum	+++	2020/12/17	2020/10/21	2020/11/18
51	50	Female	Serum	-	2020/12/17	2020/8/12	2020/9/9
52	34	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
53	28	Female	Serum	+++	2020/12/17	2020/10/21	2020/11/18
54	39	Female	Serum	+++	2020/12/17	2020/10/21	2020/11/18
55	46	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
56	47	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
57	42	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
58	45	Male	Serum	+	2020/12/17	2020/8/12	2020/9/9
59	31	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
60	22	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
61	49	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
62	38	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
63	34	Male	Serum	+++	2020/12/17	2020/8/12	2020/9/9
64	39	Male	Serum	+	2020/12/17	2020/8/12	2020/9/9
65	28	Male	Serum	+++	2020/12/17	2020/8/12	2020/9/9
66	50	Male	Serum	++	2020/12/17	2020/8/12	2020/9/9
67	24	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
68	25	Female	Serum	+	2020/12/17	2020/10/21	2020/11/18
69	44	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
70	42	Male	Serum	++	2020/12/17	2020/10/21	2020/11/18
71	36	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
72	45	Female	Serum	-	2020/12/17	2020/8/12	2020/9/9
73	49	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
74	26	Male	Serum	++	2020/12/17	2020/10/21	2020/11/18
75	46	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
76	25	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
77	30	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
78	42	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
79	28	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
80	47	Female	Serum	+++	2020/12/17	2020/10/21	2020/11/18
81	44	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
82	46	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
83	23	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
84	24	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
85	30	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
86	37	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
87	47	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
88	46	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
89	36	Female	Serum	-	2020/12/17	2020/8/12	2020/9/9
90	33	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
91	20	Male	Serum	+++	2020/12/17	2020/8/12	2020/9/9
92	47	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
93	22	Male	Serum	++	2020/12/17	2020/10/21	2020/11/18
94	20	Female	Serum	+++	2020/12/17	2020/10/21	2020/11/18

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
95	40	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
96	24	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
97	49	Male	Serum	+++	2020/12/17	2020/10/21	2020/11/18
98	23	Female	Serum	+++	2020/12/17	2020/8/12	2020/9/9
99	41	Male	Serum	+	2020/12/17	2020/8/12	2020/9/9
100	34	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
101	23	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
102	23	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
103	28	Female	Serum	++	2020/12/17	2020/10/21	2020/11/18
104	35	Male	Serum	+++	2020/12/17	2020/8/12	2020/9/9
105	39	Female	Serum	++	2020/12/17	2020/8/12	2020/9/9
106	28	Female	Serum	-	2020/12/17	2020/10/21	2020/11/18
107	45	Male	Serum	+++	2020/12/17	2020/8/12	2020/9/9
108	42	Female	Serum	+	2020/12/17	2020/8/12	2020/9/9
109	49	Male	Serum	-	2020/12/17	/	/
110	39	Female	Serum	-	2020/12/17	/	/
111	37	Male	Serum	-	2020/12/17	/	/
112	33	Male	Serum	-	2020/12/17	/	/
113	27	Female	Serum	+	2020/12/17	/	/
114	48	Female	Serum	-	2020/12/17	/	/
115	47	Female	Serum	-	2020/12/17	/	/
116	31	Female	Serum	-	2020/12/17	/	/
117	39	Female	Serum	-	2020/12/17	/	/
118	29	Female	Serum	-	2020/12/17	/	/
119	27	Female	Serum	-	2020/12/17	/	/
120	37	Female	Serum	-	2020/12/17	/	/
121	25	Female	Serum	-	2020/12/17	/	/
122	31	Female	Serum	-	2020/12/17	/	/
123	31	Female	Serum	+	2020/12/17	/	/
124	44	Female	Serum	-	2020/12/17	/	/
125	50	Male	Serum	-	2020/12/17	/	/
126	33	Male	Serum	+	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
127	50	Female	Serum	-	2020/12/17	/	/
128	26	Female	Serum	-	2020/12/17	/	/
129	26	Female	Serum	-	2020/12/17	/	/
130	46	Female	Serum	-	2020/12/17	/	/
131	48	Female	Serum	-	2020/12/17	/	/
132	36	Female	Serum	-	2020/12/17	/	/
133	49	Female	Serum	-	2020/12/17	/	/
134	23	Male	Serum	-	2020/12/17	/	/
135	30	Female	Serum	-	2020/12/17	/	/
136	24	Female	Serum	-	2020/12/17	/	/
137	37	Male	Serum	-	2020/12/17	/	/
138	39	Female	Serum	-	2020/12/17	/	/
139	50	Female	Serum	-	2020/12/17	/	/
140	34	Female	Serum	-	2020/12/17	/	/
141	23	Female	Serum	-	2020/12/17	/	/
142	39	Male	Serum	-	2020/12/17	/	/
143	47	Female	Serum	-	2020/12/17	/	/
144	23	Male	Serum	-	2020/12/17	/	/
145	35	Female	Serum	-	2020/12/17	/	/
146	25	Female	Serum	-	2020/12/17	/	/
147	35	Female	Serum	-	2020/12/17	/	/
148	29	Female	Serum	-	2020/12/17	/	/
149	24	Female	Serum	-	2020/12/17	/	/
150	45	Female	Serum	-	2020/12/17	/	/
151	33	Female	Serum	-	2020/12/17	/	/
152	35	Female	Serum	-	2020/12/17	/	/
153	24	Male	Serum	++	2020/12/17	/	/
154	22	Female	Serum	-	2020/12/17	/	/
155	30	Female	Serum	-	2020/12/17	/	/
156	35	Female	Serum	-	2020/12/17	/	/
157	23	Male	Serum	-	2020/12/17	/	/
158	30	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
159	30	Female	Serum	-	2020/12/17	/	/
160	45	Male	Serum	-	2020/12/17	/	/
161	40	Female	Serum	-	2020/12/17	/	/
162	32	Female	Serum	-	2020/12/17	/	/
163	25	Male	Serum	-	2020/12/17	/	/
164	25	Male	Serum	-	2020/12/17	/	/
165	21	Female	Serum	-	2020/12/17	/	/
166	35	Female	Serum	-	2020/12/17	/	/
167	33	Female	Serum	-	2020/12/17	/	/
168	31	Male	Serum	-	2020/12/17	/	/
169	49	Female	Serum	-	2020/12/17	/	/
170	46	Female	Serum	-	2020/12/17	/	/
171	39	Male	Serum	-	2020/12/17	/	/
172	23	Female	Serum	-	2020/12/17	/	/
173	36	Female	Serum	-	2020/12/17	/	/
174	43	Male	Serum	-	2020/12/17	/	/
175	43	Male	Serum	-	2020/12/17	/	/
176	32	Female	Serum	-	2020/12/17	/	/
177	36	Female	Serum	-	2020/12/17	/	/
178	21	Female	Serum	-	2020/12/17	/	/
179	35	Female	Serum	+	2020/12/17	/	/
180	49	Female	Serum	-	2020/12/17	/	/
181	42	Female	Serum	-	2020/12/17	/	/
182	48	Female	Serum	-	2020/12/17	/	/
183	20	Female	Serum	-	2020/12/17	/	/
184	48	Female	Serum	-	2020/12/17	/	/
185	25	Male	Serum	-	2020/12/17	/	/
186	36	Female	Serum	-	2020/12/17	/	/
187	36	Male	Serum	-	2020/12/17	/	/
188	29	Female	Serum	-	2020/12/17	/	/
189	32	Male	Serum	-	2020/12/17	/	/
190	32	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
191	21	Female	Serum	-	2020/12/17	/	/
192	45	Female	Serum	-	2020/12/17	/	/
193	23	Female	Serum	-	2020/12/17	/	/
194	23	Male	Serum	-	2020/12/17	/	/
195	49	Female	Serum	-	2020/12/17	/	/
196	34	Female	Serum	-	2020/12/17	/	/
197	36	Female	Serum	++	2020/12/17	/	/
198	25	Male	Serum	-	2020/12/17	/	/
199	29	Male	Serum	-	2020/12/17	/	/
200	40	Female	Serum	-	2020/12/17	/	/
201	33	Female	Serum	-	2020/12/17	/	/
202	50	Male	Serum	-	2020/12/17	/	/
203	41	Female	Serum	-	2020/12/17	/	/
204	21	Female	Serum	-	2020/12/17	/	/
205	22	Female	Serum	-	2020/12/17	/	/
206	29	Female	Serum	-	2020/12/17	/	/
207	22	Female	Serum	-	2020/12/17	/	/
208	35	Female	Serum	-	2020/12/17	/	/
209	33	Male	Serum	-	2020/12/17	/	/
210	46	Female	Serum	-	2020/12/17	/	/
211	47	Female	Serum	-	2020/12/17	/	/
212	32	Male	Serum	-	2020/12/17	/	/
213	38	Female	Serum	-	2020/12/17	/	/
214	24	Female	Serum	-	2020/12/17	/	/
215	40	Female	Serum	+	2020/12/17	/	/
216	36	Female	Serum	-	2020/12/17	/	/
217	39	Female	Serum	-	2020/12/17	/	/
218	42	Female	Serum	-	2020/12/17	/	/
219	48	Female	Serum	-	2020/12/17	/	/
220	20	Female	Serum	-	2020/12/17	/	/
221	50	Male	Serum	-	2020/12/17	/	/
222	23	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
223	37	Female	Serum	-	2020/12/17	/	/
224	50	Female	Serum	-	2020/12/17	/	/
225	21	Female	Serum	-	2020/12/17	/	/
226	47	Female	Serum	-	2020/12/17	/	/
227	26	Female	Serum	-	2020/12/17	/	/
228	25	Female	Serum	-	2020/12/17	/	/
229	22	Female	Serum	-	2020/12/17	/	/
230	32	Male	Serum	-	2020/12/17	/	/
231	32	Female	Serum	-	2020/12/17	/	/
232	30	Female	Serum	-	2020/12/17	/	/
233	23	Female	Serum	-	2020/12/17	/	/
234	37	Female	Serum	-	2020/12/17	/	/
235	22	Male	Serum	-	2020/12/17	/	/
236	21	Female	Serum	-	2020/12/17	/	/
237	46	Female	Serum	-	2020/12/17	/	/
238	42	Female	Serum	-	2020/12/17	/	/
239	48	Female	Serum	-	2020/12/17	/	/
240	26	Female	Serum	-	2020/12/17	/	/
241	49	Female	Serum	-	2020/12/17	/	/
242	23	Female	Serum	-	2020/12/17	/	/
243	49	Female	Serum	+	2020/12/17	/	/
244	49	Male	Serum	-	2020/12/17	/	/
245	40	Female	Serum	-	2020/12/17	/	/
246	47	Male	Serum	-	2020/12/17	/	/
247	30	Female	Serum	-	2020/12/17	/	/
248	24	Female	Serum	-	2020/12/17	/	/
249	38	Female	Serum	-	2020/12/17	/	/
250	49	Female	Serum	-	2020/12/17	/	/
251	26	Female	Serum	-	2020/12/17	/	/
252	49	Male	Serum	-	2020/12/17	/	/
253	42	Female	Serum	-	2020/12/17	/	/
254	21	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
255	35	Female	Serum	-	2020/12/17	/	/
256	33	Female	Serum	-	2020/12/17	/	/
257	39	Male	Serum	-	2020/12/17	/	/
258	26	Male	Serum	-	2020/12/17	/	/
259	28	Female	Serum	-	2020/12/17	/	/
260	46	Female	Serum	-	2020/12/17	/	/
261	44	Female	Serum	-	2020/12/17	/	/
262	40	Male	Serum	-	2020/12/17	/	/
263	25	Female	Serum	-	2020/12/17	/	/
264	27	Female	Serum	-	2020/12/17	/	/
265	42	Female	Serum	-	2020/12/17	/	/
266	32	Female	Serum	-	2020/12/17	/	/
267	23	Female	Serum	-	2020/12/17	/	/
268	28	Female	Serum	-	2020/12/17	/	/
269	26	Female	Serum	-	2020/12/17	/	/
270	44	Male	Serum	-	2020/12/17	/	/
271	28	Female	Serum	-	2020/12/17	/	/
272	39	Female	Serum	-	2020/12/17	/	/
273	32	Female	Serum	-	2020/12/17	/	/
274	33	Female	Serum	-	2020/12/17	/	/
275	40	Female	Serum	-	2020/12/17	/	/
276	34	Female	Serum	-	2020/12/17	/	/
277	37	Female	Serum	-	2020/12/17	/	/
278	43	Male	Serum	-	2020/12/17	/	/
279	48	Female	Serum	-	2020/12/17	/	/
280	25	Female	Serum	-	2020/12/17	/	/
281	23	Female	Serum	-	2020/12/17	/	/
282	30	Female	Serum	-	2020/12/17	/	/
283	38	Female	Serum	-	2020/12/17	/	/
284	39	Female	Serum	-	2020/12/17	/	/
285	45	Female	Serum	-	2020/12/17	/	/
286	41	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
287	37	Female	Serum	-	2020/12/17	/	/
288	40	Male	Serum	-	2020/12/17	/	/
289	27	Male	Serum	-	2020/12/17	/	/
290	31	Female	Serum	-	2020/12/17	/	/
291	28	Female	Serum	-	2020/12/17	/	/
292	39	Female	Serum	-	2020/12/17	/	/
293	44	Female	Serum	-	2020/12/17	/	/
294	38	Male	Serum	-	2020/12/17	/	/
295	21	Female	Serum	-	2020/12/17	/	/
296	36	Male	Serum	-	2020/12/17	/	/
297	32	Female	Serum	-	2020/12/17	/	/
298	25	Female	Serum	-	2020/12/17	/	/
299	44	Female	Serum	-	2020/12/17	/	/
300	36	Female	Serum	-	2020/12/17	/	/
301	25	Female	Serum	-	2020/12/17	/	/
302	27	Male	Serum	-	2020/12/17	/	/
303	47	Female	Serum	-	2020/12/17	/	/
304	21	Male	Serum	-	2020/12/17	/	/
305	49	Female	Serum	-	2020/12/17	/	/
306	27	Female	Serum	-	2020/12/17	/	/
307	36	Female	Serum	-	2020/12/17	/	/
308	38	Female	Serum	-	2020/12/17	/	/
309	29	Female	Serum	-	2020/12/17	/	/
310	47	Female	Serum	-	2020/12/17	/	/
311	36	Female	Serum	-	2020/12/17	/	/
312	48	Male	Serum	-	2020/12/17	/	/
313	20	Female	Serum	-	2020/12/17	/	/
314	46	Male	Serum	-	2020/12/17	/	/
315	34	Female	Serum	-	2020/12/17	/	/
316	30	Female	Serum	-	2020/12/17	/	/
317	45	Female	Serum	-	2020/12/17	/	/
318	22	Male	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
319	20	Female	Serum	-	2020/12/17	/	/
320	31	Male	Serum	-	2020/12/17	/	/
321	26	Female	Serum	-	2020/12/17	/	/
322	24	Female	Serum	-	2020/12/17	/	/
323	47	Female	Serum	-	2020/12/17	/	/
324	36	Male	Serum	-	2020/12/17	/	/
325	45	Female	Serum	-	2020/12/17	/	/
326	42	Female	Serum	-	2020/12/17	/	/
327	21	Female	Serum	-	2020/12/17	/	/
328	41	Male	Serum	-	2020/12/17	/	/
329	29	Female	Serum	-	2020/12/17	/	/
330	41	Female	Serum	-	2020/12/17	/	/
331	40	Female	Serum	-	2020/12/17	/	/
332	40	Female	Serum	-	2020/12/17	/	/
333	42	Female	Serum	-	2020/12/17	/	/
334	42	Female	Serum	-	2020/12/17	/	/
335	50	Male	Serum	-	2020/12/17	/	/
336	41	Female	Serum	-	2020/12/17	/	/
337	21	Female	Serum	-	2020/12/17	/	/
338	20	Female	Serum	-	2020/12/17	/	/
339	46	Female	Serum	-	2020/12/17	/	/
340	20	Female	Serum	-	2020/12/17	/	/
341	21	Female	Serum	-	2020/12/17	/	/
342	24	Male	Serum	-	2020/12/17	/	/
343	34	Female	Serum	-	2020/12/17	/	/
344	40	Female	Serum	-	2020/12/17	/	/
345	44	Female	Serum	-	2020/12/17	/	/
346	49	Female	Serum	-	2020/12/17	/	/
347	23	Male	Serum	-	2020/12/17	/	/
348	29	Female	Serum	-	2020/12/17	/	/
349	41	Female	Serum	-	2020/12/17	/	/
350	40	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
351	39	Female	Serum	-	2020/12/17	/	/
352	42	Female	Serum	-	2020/12/17	/	/
353	33	Female	Serum	-	2020/12/17	/	/
354	45	Female	Serum	-	2020/12/17	/	/
355	47	Female	Serum	-	2020/12/17	/	/
356	46	Female	Serum	-	2020/12/17	/	/
357	35	Female	Serum	-	2020/12/17	/	/
358	34	Female	Serum	-	2020/12/17	/	/
359	21	Female	Serum	-	2020/12/17	/	/
360	49	Female	Serum	-	2020/12/17	/	/
361	24	Female	Serum	-	2020/12/17	/	/
362	49	Female	Serum	-	2020/12/17	/	/
363	46	Female	Serum	-	2020/12/17	/	/
364	21	Female	Serum	-	2020/12/17	/	/
365	26	Female	Serum	-	2020/12/17	/	/
366	45	Female	Serum	-	2020/12/17	/	/
367	22	Male	Serum	-	2020/12/17	/	/
368	32	Female	Serum	-	2020/12/17	/	/
369	26	Male	Serum	-	2020/12/17	/	/
370	46	Female	Serum	-	2020/12/17	/	/
371	27	Male	Serum	-	2020/12/17	/	/
372	26	Female	Serum	-	2020/12/17	/	/
373	22	Female	Serum	-	2020/12/17	/	/
374	31	Female	Serum	-	2020/12/17	/	/
375	25	Female	Serum	-	2020/12/17	/	/
376	28	Female	Serum	-	2020/12/17	/	/
377	27	Male	Serum	-	2020/12/17	/	/
378	46	Female	Serum	-	2020/12/17	/	/
379	27	Female	Serum	-	2020/12/17	/	/
380	43	Female	Serum	-	2020/12/17	/	/
381	48	Female	Serum	-	2020/12/17	/	/
382	39	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
383	40	Male	Serum	-	2020/12/17	/	/
384	41	Female	Serum	-	2020/12/17	/	/
385	40	Female	Serum	-	2020/12/17	/	/
386	40	Female	Serum	-	2020/12/17	/	/
387	42	Female	Serum	-	2020/12/17	/	/
388	23	Female	Serum	-	2020/12/17	/	/
389	22	Female	Serum	-	2020/12/17	/	/
390	29	Female	Serum	-	2020/12/17	/	/
391	41	Male	Serum	-	2020/12/17	/	/
392	28	Female	Serum	-	2020/12/17	/	/
393	31	Female	Serum	-	2020/12/17	/	/
394	32	Male	Serum	-	2020/12/17	/	/
395	48	Female	Serum	-	2020/12/17	/	/
396	42	Male	Serum	-	2020/12/17	/	/
397	45	Female	Serum	-	2020/12/17	/	/
398	24	Female	Serum	-	2020/12/17	/	/
399	35	Female	Serum	-	2020/12/17	/	/
400	30	Female	Serum	-	2020/12/17	/	/
401	20	Female	Serum	-	2020/12/17	/	/
402	40	Female	Serum	-	2020/12/17	/	/
403	45	Male	Serum	-	2020/12/17	/	/
404	37	Female	Serum	-	2020/12/17	/	/
405	31	Female	Serum	-	2020/12/17	/	/
406	29	Male	Serum	-	2020/12/17	/	/
407	24	Female	Serum	-	2020/12/17	/	/
408	25	Male	Serum	-	2020/12/17	/	/
409	30	Female	Serum	-	2020/12/17	/	/
410	40	Male	Serum	-	2020/12/17	/	/
411	41	Female	Serum	-	2020/12/17	/	/
412	20	Female	Serum	-	2020/12/17	/	/
413	37	Female	Serum	-	2020/12/17	/	/
414	40	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
415	39	Female	Serum	-	2020/12/17	/	/
416	39	Male	Serum	-	2020/12/17	/	/
417	48	Female	Serum	-	2020/12/17	/	/
418	30	Female	Serum	-	2020/12/17	/	/
419	47	Female	Serum	-	2020/12/17	/	/
420	47	Female	Serum	-	2020/12/17	/	/
421	39	Female	Serum	-	2020/12/17	/	/
422	24	Male	Serum	-	2020/12/17	/	/
423	43	Female	Serum	-	2020/12/17	/	/
424	25	Female	Serum	-	2020/12/17	/	/
425	31	Female	Serum	-	2020/12/17	/	/
426	20	Female	Serum	-	2020/12/17	/	/
427	30	Female	Serum	-	2020/12/17	/	/
428	45	Female	Serum	-	2020/12/17	/	/
429	34	Male	Serum	-	2020/12/17	/	/
430	25	Female	Serum	-	2020/12/17	/	/
431	45	Female	Serum	-	2020/12/17	/	/
432	34	Female	Serum	-	2020/12/17	/	/
433	36	Female	Serum	-	2020/12/17	/	/
434	38	Female	Serum	-	2020/12/17	/	/
435	34	Female	Serum	-	2020/12/17	/	/
436	37	Male	Serum	-	2020/12/17	/	/
437	41	Female	Serum	-	2020/12/17	/	/
438	44	Male	Serum	-	2020/12/17	/	/
439	20	Female	Serum	-	2020/12/17	/	/
440	27	Male	Serum	-	2020/12/17	/	/
441	41	Female	Serum	-	2020/12/17	/	/
442	37	Male	Serum	-	2020/12/17	/	/
443	21	Female	Serum	-	2020/12/17	/	/
444	45	Female	Serum	-	2020/12/17	/	/
445	34	Male	Serum	-	2020/12/17	/	/
446	48	Male	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
447	21	Female	Serum	-	2020/12/17	/	/
448	28	Female	Serum	-	2020/12/17	/	/
449	36	Female	Serum	-	2020/12/17	/	/
450	30	Female	Serum	-	2020/12/17	/	/
451	43	Male	Serum	-	2020/12/17	/	/
452	40	Female	Serum	-	2020/12/17	/	/
453	49	Female	Serum	-	2020/12/17	/	/
454	45	Female	Serum	-	2020/12/17	/	/
455	44	Male	Serum	-	2020/12/17	/	/
456	22	Female	Serum	-	2020/12/17	/	/
457	32	Female	Serum	-	2020/12/17	/	/
458	22	Male	Serum	-	2020/12/17	/	/
459	34	Female	Serum	-	2020/12/17	/	/
460	21	Male	Serum	-	2020/12/17	/	/
461	23	Female	Serum	-	2020/12/17	/	/
462	50	Female	Serum	-	2020/12/17	/	/
463	24	Female	Serum	-	2020/12/17	/	/
464	44	Female	Serum	-	2020/12/17	/	/
465	24	Female	Serum	-	2020/12/17	/	/
466	25	Female	Serum	-	2020/12/17	/	/
467	27	Female	Serum	-	2020/12/17	/	/
468	39	Female	Serum	-	2020/12/17	/	/
469	32	Female	Serum	-	2020/12/17	/	/
470	36	Female	Serum	-	2020/12/17	/	/
471	43	Female	Serum	-	2020/12/17	/	/
472	50	Female	Serum	-	2020/12/17	/	/
473	23	Female	Serum	-	2020/12/17	/	/
474	31	Female	Serum	-	2020/12/17	/	/
475	36	Female	Serum	-	2020/12/17	/	/
476	32	Female	Serum	-	2020/12/17	/	/
477	34	Female	Serum	-	2020/12/17	/	/
478	41	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
479	50	Female	Serum	-	2020/12/17	/	/
480	29	Female	Serum	-	2020/12/17	/	/
481	36	Female	Serum	-	2020/12/17	/	/
482	48	Female	Serum	-	2020/12/17	/	/
483	32	Female	Serum	-	2020/12/17	/	/
484	47	Female	Serum	-	2020/12/17	/	/
485	21	Female	Serum	-	2020/12/17	/	/
486	21	Female	Serum	-	2020/12/17	/	/
487	26	Male	Serum	-	2020/12/17	/	/
488	44	Female	Serum	-	2020/12/17	/	/
489	33	Female	Serum	-	2020/12/17	/	/
490	35	Female	Serum	-	2020/12/17	/	/
491	40	Male	Serum	-	2020/12/17	/	/
492	29	Female	Serum	-	2020/12/17	/	/
493	49	Female	Serum	-	2020/12/17	/	/
494	40	Female	Serum	-	2020/12/17	/	/
495	41	Female	Serum	-	2020/12/17	/	/
496	43	Female	Serum	-	2020/12/17	/	/
497	50	Male	Serum	-	2020/12/17	/	/
498	24	Female	Serum	-	2020/12/17	/	/
499	45	Female	Serum	-	2020/12/17	/	/
500	49	Male	Serum	-	2020/12/17	/	/
501	22	Male	Serum	-	2020/12/17	/	/
502	31	Male	Serum	-	2020/12/17	/	/
503	44	Female	Serum	-	2020/12/17	/	/
504	48	Female	Serum	-	2020/12/17	/	/
505	21	Female	Serum	-	2020/12/17	/	/
506	49	Female	Serum	-	2020/12/17	/	/
507	39	Male	Serum	-	2020/12/17	/	/
508	47	Female	Serum	-	2020/12/17	/	/
509	25	Female	Serum	-	2020/12/17	/	/
510	36	Male	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
511	32	Male	Serum	-	2020/12/17	/	/
512	42	Female	Serum	-	2020/12/17	/	/
513	42	Female	Serum	-	2020/12/17	/	/
514	20	Female	Serum	-	2020/12/17	/	/
515	48	Female	Serum	-	2020/12/17	/	/
516	50	Female	Serum	-	2020/12/17	/	/
517	38	Female	Serum	-	2020/12/17	/	/
518	42	Female	Serum	-	2020/12/17	/	/
519	45	Male	Serum	-	2020/12/17	/	/
520	41	Female	Serum	-	2020/12/17	/	/
521	50	Female	Serum	-	2020/12/17	/	/
522	42	Male	Serum	-	2020/12/17	/	/
523	21	Female	Serum	-	2020/12/17	/	/
524	45	Female	Serum	-	2020/12/17	/	/
525	34	Female	Serum	-	2020/12/17	/	/
526	40	Female	Serum	-	2020/12/17	/	/
527	29	Female	Serum	-	2020/12/17	/	/
528	25	Female	Serum	-	2020/12/17	/	/
529	20	Female	Serum	-	2020/12/17	/	/
530	38	Female	Serum	-	2020/12/17	/	/
531	50	Female	Serum	-	2020/12/17	/	/
532	49	Female	Serum	-	2020/12/17	/	/
533	20	Female	Serum	-	2020/12/17	/	/
534	49	Female	Serum	-	2020/12/17	/	/
535	42	Female	Serum	-	2020/12/17	/	/
536	27	Female	Serum	-	2020/12/17	/	/
537	36	Female	Serum	-	2020/12/17	/	/
538	43	Female	Serum	-	2020/12/17	/	/
539	31	Female	Serum	-	2020/12/17	/	/
540	46	Male	Serum	-	2020/12/17	/	/
541	24	Female	Serum	-	2020/12/17	/	/
542	41	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
543	47	Female	Serum	-	2020/12/17	/	/
544	31	Female	Serum	-	2020/12/17	/	/
545	27	Female	Serum	-	2020/12/17	/	/
546	43	Female	Serum	-	2020/12/17	/	/
547	50	Female	Serum	-	2020/12/17	/	/
548	33	Female	Serum	-	2020/12/17	/	/
549	37	Female	Serum	-	2020/12/17	/	/
550	31	Male	Serum	-	2020/12/17	/	/
551	20	Male	Serum	-	2020/12/17	/	/
552	20	Male	Serum	-	2020/12/17	/	/
553	34	Male	Serum	-	2020/12/17	/	/
554	23	Female	Serum	-	2020/12/17	/	/
555	49	Female	Serum	-	2020/12/17	/	/
556	32	Female	Serum	-	2020/12/17	/	/
557	24	Female	Serum	-	2020/12/17	/	/
558	24	Female	Serum	-	2020/12/17	/	/
559	40	Female	Serum	-	2020/12/17	/	/
560	34	Female	Serum	-	2020/12/17	/	/
561	49	Male	Serum	-	2020/12/17	/	/
562	45	Female	Serum	-	2020/12/17	/	/
563	25	Female	Serum	-	2020/12/17	/	/
564	48	Female	Serum	-	2020/12/17	/	/
565	34	Male	Serum	-	2020/12/17	/	/
566	33	Female	Serum	-	2020/12/17	/	/
567	21	Female	Serum	-	2020/12/17	/	/
568	43	Female	Serum	-	2020/12/17	/	/
569	26	Female	Serum	-	2020/12/17	/	/
570	37	Female	Serum	-	2020/12/17	/	/
571	46	Female	Serum	-	2020/12/17	/	/
572	30	Male	Serum	-	2020/12/17	/	/
573	28	Male	Serum	-	2020/12/17	/	/
574	28	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
575	35	Male	Serum	-	2020/12/17	/	/
576	28	Male	Serum	-	2020/12/17	/	/
577	30	Female	Serum	-	2020/12/17	/	/
578	40	Female	Serum	-	2020/12/17	/	/
579	36	Female	Serum	-	2020/12/17	/	/
580	43	Male	Serum	-	2020/12/17	/	/
581	40	Female	Serum	-	2020/12/17	/	/
582	21	Male	Serum	-	2020/12/17	/	/
583	46	Female	Serum	-	2020/12/17	/	/
584	33	Male	Serum	-	2020/12/17	/	/
585	46	Female	Serum	-	2020/12/17	/	/
586	22	Male	Serum	-	2020/12/17	/	/
587	47	Female	Serum	-	2020/12/17	/	/
588	50	Female	Serum	-	2020/12/17	/	/
589	37	Female	Serum	-	2020/12/17	/	/
590	25	Male	Serum	-	2020/12/17	/	/
591	26	Female	Serum	-	2020/12/17	/	/
592	22	Female	Serum	-	2020/12/17	/	/
593	29	Female	Serum	-	2020/12/17	/	/
594	33	Female	Serum	-	2020/12/17	/	/
595	48	Female	Serum	-	2020/12/17	/	/
596	40	Female	Serum	-	2020/12/17	/	/
597	20	Male	Serum	-	2020/12/17	/	/
598	29	Female	Serum	-	2020/12/17	/	/
599	31	Male	Serum	-	2020/12/17	/	/
600	23	Female	Serum	-	2020/12/17	/	/
601	27	Male	Serum	-	2020/12/17	/	/
602	38	Female	Serum	-	2020/12/17	/	/
603	26	Female	Serum	-	2020/12/17	/	/
604	38	Female	Serum	-	2020/12/17	/	/
605	37	Female	Serum	-	2020/12/17	/	/
606	37	Female	Serum	-	2020/12/17	/	/

Sample Number	Age	Gender	Sample type	COVID-19 Neutralizing Antibody Test Kit test result	Sample collection time	Date of first vaccination of COVID-19 vaccination	Date of second vaccination of COVID-19 vaccination
607	26	Female	Serum	-	2020/12/17	/	/
608	40	Female	Serum	-	2020/12/17	/	/
609	31	Male	Serum	-	2020/12/17	/	/
610	32	Female	Serum	-	2020/12/17	/	/
611	26	Female	Serum	-	2020/12/17	/	/
612	33	Female	Serum	-	2020/12/17	/	/
613	24	Female	Serum	-	2020/12/17	/	/