

Clinical Sensitivity and Specificity Study Report

The “COVID-19 IgG/IgM Rapid Test” developed by Hangzhou Clongene Biotech Co.,Ltd . is a lateral flow immunoassay designed for the qualitative detection of IgG and IgM antibodies to the SARS-CoV-2 virus in whole blood, serum or plasma specimens from individuals suspected of SARS-CoV-2 virus infection by their healthcare provider.

1. Method and working principles

Regarding the IgM test, Testing was performed on approximately 167 clinical specimens of individuals suspected of SARS-CoV-2 virus infection from Professional Point of Care sites. Regarding the IgM test, the result was compared to RT-PCR. We have counted the positive coincidence rate of the 77 patients and the negative coincidence rate of the 90 patients.

Regarding the IgG test, Testing was performed on approximately 167 clinical specimens of individuals suspected of SARS-CoV-2 virus infection from Professional Point of Care sites. Regarding the IgG test, the result was compared to RT-PCR. We have counted the positive coincidence rate of the 77 patients and the negative coincidence rate of the 90 patients. We have counted the SARS-CoV-2 virus IgG positive coincidence rate of the 77 patients during the convalescence period.

We counted the SARS-CoV-2 virus IgG/ IgM positive coincidence rate of 51 specimens samples which were collected with information of Days post symptom onset. We made statistics according to the time of onset between 5 and 15 days and >15 days.

2. Sample

2.1 Sample used for RT-PCR: Nasopharyngeal or oropharyngeal swabs

2.2 Sample used for SARS-CoV-2 virus IgM and IgG detection: Serum or plasma specimen with EDTA anticoagulant.

- Sample collection: The sample we used for SARS-COV-2 Virus IgG/IgM detection were retrospective samples in the COVID-19 2020 outbreak period and high risk area. For positive sample, we included current or prior confirmed SARS-cov-2 Virus infection person with swabs tested RT-PCR positive, we taken their blood specimens in pathogenic period or convalescent stage for SARS-COV-2 Virus IgM and IgG test. For negative sample, we included the blood sample from asymptomatic subjects whom live in high risk area when the epidemic was under control, with swabs tested RT-PCR negative. We blind - coded the samples for testing.

- Sample source and amount: Samples were collected from Wenzhou Central Hospital and Shenzhen Center for Disease Control and Prevention. 77 clinical positive specimens from individuals were finally confirmed positive for SARS-CoV-2 virus infection by RT-PCR. 90 clinical negative specimens from individuals were finally confirmed negative for SARS-CoV-2 virus infection by RT-PCR.
- Sample criteria: Use RT-PCR to test swabs to obtain serum or plasma samples of individuals who have a negative or positive result of SARS-CoV-2 virus infection.

3. Analysis of test results

3.1 SARS-CoV-2 virus IgM

Agreement with RT-PCR

SARS-CoV-2 virus IgM		RT-PCR		Total
		Positive	Negative	
Hangzhou Clongene Biotech	Positive	67	1	68
	Negative	10	89	99
Total		77	90	167

Positive coincidence rate (%) = $67 / (67+10) * 100\% = 87.01\%$ (95% CI: 77.72%, 92.79%)

Negative coincidence rate (%) = $89 / (1+89) * 100\% = 98.89\%$ (95% CI: 93.97 %, 99.80%)

Total Coincidence Rate (%) = $[(67+89) / (67+10+1+89)] = 93.41\%$ (95% CI: 88.59%, 96.28%)

3.2 SARS-CoV-2 virus IgG

Agreement with RT-PCR

SARS-CoV-2 virus IgG		RT-PCR		Total
		Positive	Negative	
Hangzhou Clongene Biotech	Positive	65	0	65
	Negative	12	90	102
Total		77	90	167

Positive coincidence rate (%) = $65 / (65+12) * 100\% = 84.42\%$ (95% CI: 74.41%, 90.85%)

Negative coincidence rate (%) = $90 / (0+90) * 100\% = 100.00\%$ (95% CI: 95.91 %, 100.00%)

Total Coincidence Rate (%) = $[(65+90) / (65+12+0+90)] = 92.81\%$ (95% CI: 87.86%, 95.84%)

3.3 SARS-CoV-2 virus IgG/ IgM

Agreement with RT-PCR

SARS-CoV-2 virus IgG/ IgM		RT-PCR		Total
		Positive	Negative	
Hangzhou Clongene Biotech	Positive	67	1	68
	Negative	10	89	99
Total		77	90	167

Positive coincidence rate (%) = $67 / (67+10) * 100\% = 87.01\%$ (95% CI: 77.72%, 92.79%)
 Negative coincidence rate (%) = $89 / (1+89) * 100\% = 98.89\%$ (95% CI: 93.97 %, 99.80%)
 Total Coincidence Rate (%) = $[(67+89) / (67+10+1+89)] = 93.41\%$ (95% CI: 88.59%, 96.28%)

3.4 SARS-CoV-2 virus IgG during the convalescence period

SARS-CoV-2 virus IgG		Number of patients during the convalescence period	Total
Hangzhou Clongene Biotech	Positive	75	75
	Negative	2	2
Total		77	77

Positive coincidence rate (%) = $75 / (75+2) * 100\% = 97.40\%$ (95% CI: 91.02%, 99.28%)

3.5 Analysis and comparison of the specimens collected within 15 days and above 5 days or after 15 days from the date of symptom onset

Days post symptom onset	#PCR Total positive	Candidate Device		
		# of positive results	PPA	95% CI
≥5 and ≤15	26	24	92.31%	74.87%, 99.05%
>15	25	25	100.00%	86.28%, 100.00%

4. Conclusion

The clinical research is a qualitative test comparison to evaluate the clinical use validity and group professional test applicability of the “COVID-19 IgG/IgM Rapid Test” developed by Hangzhou Clongene Biotech Co., Ltd.

For SARS-CoV-2 virus IgM, when compared to RT-PCR, a statistical comparison was made between the results yielding a positive coincidence rate is 87.01% (95% CI: 77.72%, 92.79%), a negative coincidence rate is 98.89% (95% CI: 93.97 %, 99.80%) and a total agreement is 93.41% (95% CI: 88.59%, 96.28%).

For SARS-CoV-2 virus IgG, when compared to RT-PCR, a statistical comparison was made between the results yielding a positive coincidence rate of 84.42% (95% CI: 74.41%, 90.85%), a negative coincidence rate of 100.00% (95% CI: 95.91 %, 100.00%) and a total agreement of 92.81% (95% CI: 87.86%, 95.84%).

For SARS-CoV-2 virus IgG/IgM, a statistical comparison was made between the results yielding a positive coincidence rate is 87.01% (95% CI: 77.72%, 92.79%), a negative coincidence rate is 98.89% (95% CI: 93.97 %, 99.80%) and a total agreement is 93.41% (95% CI: 88.59%, 96.28%).

We counted the SARS-CoV-2 virus IgG positive rate during the convalescence period, the results yielding a positive coincidence rate of 97.40%.

Based on result of test with positive specimens (clause 4.5), it was found that COVID-19 IgG/IgM Rapid Test was very effective for diagnosis SARS-CoV-2 infection from the time when 15 days after the date of symptom onset. When compared to RT-PCR, a statistical comparison was made between the results yielding a positive coincidence rate is 100.00% (95% CI: 86.28%, 100.00%). Within 5 to 15 days after the onset of symptoms, we compared with RT-PCR, and the statistical comparison between the results reached 92.31% (95% CI: 74.87%, 99.05%). As some cases are not included in the statistics because the time of onset is unknown. We calculated 25 and 26 SARS-CoV-2 infected specimens respectively, and this number is already statistically significant. There will be a delay between the onset of symptoms or a positive nucleic acid test result and a positive serological test. On the other hand, we can guess that the levels of IgM and IgG antibodies usually produced by patients about 15 days after infection have stabilized to the detection limit of the reagent.

Besides, there were still false positive and false negative results. The reasons for the false negative may be due, first, to low antibody concentrations. Both IgM and IgG have a window period from virus infection to antibody production, IgM almost appear after the onset of disease several days, IgG become detectable later following infection. When IgM and IgG levels are below the detection limit (not determined yet) of this rapid test, the test results will be negative. Second, the difference in individual immune response antibody production could be one reason for the false negative results in COVID-19 patients. In some cases, it is hard to know exactly when the patient was infected or how long the patient was infected. However, because of the emergency of outbreak of COVID-19, we could not carry out normal research activities and perform enough tests to verify if there is interference from other IgM and IgG induced by non-SARS-CoV-2 coronavirus infections. This work need be done later.

For the test, it is very important to know the data of infection time point from clinical samples which will be helpful to compare the data of single or double positive. Due to limited time, we do not have complete detailed information for how long each patient was infected or for how long each patient had symptoms when blood sample was collected at all the clinical sites. Further studies and information collection are needed for this.

Clinic Data of Positive Specimens:

No.	PCR		IgG/IgM Test Result				IgG (Convalescence Period) Test Result			
	Test Date	Result	Blood collection data	Days after symptom onset	IgM Result	IgG Result	Blood collection data	Days after symptom onset	Result	
1	Feb.05, 2020	Positive	Feb.06, 2020	10	Positive	Positive	Feb.16, 2020	20	Positive	
2	Feb.04, 2020	Positive	Feb.06, 2020	15	Negative	Negative	Feb.10, 2020	19	Positive	
3	Feb.06, 2020	Positive	Feb.06, 2020	2	Negative	Negative	Feb.20, 2020	16	Negative	
4	Feb.07, 2020	Positive	Feb.07, 2020	4	Negative	Negative	Feb.20, 2020	17	Positive	
5	Feb.05, 2020	Positive	Feb.07, 2020	Unknown	Positive	Positive	Feb.20, 2020	Unknown	Positive	
6	Feb.04, 2020	Positive	Feb.07, 2020	9	Positive	Positive	Feb.20, 2020	22	Positive	
7	Feb.05, 2020	Positive	Feb.07, 2020	17	Positive	Positive	Feb.14, 2020	24	Positive	
8	Feb.07, 2020	Positive	Feb.07, 2020	Unknown	Positive	Positive	Feb.14, 2020	Unknown	Positive	
9	Feb.04, 2020	Positive	Feb.07, 2020	7	Positive	Negative	Feb.19, 2020	19	Positive	
10	Feb.05, 2020	Positive	Feb.07, 2020	9	Positive	Positive	Feb.17, 2020	19	Positive	
11	Feb.04, 2020	Positive	Feb.07, 2020	9	Positive	Positive	Feb.19, 2020	21	Positive	
12	Feb.07, 2020	Positive	Feb.07, 2020	3	Negative	Negative	Feb.21, 2020	17	Positive	
13	Feb.07, 2020	Positive	Feb.07, 2020	Unknown	Positive	Positive	Feb.21, 2020	Unknown	Positive	
14	Feb.08, 2020	Positive	Feb.08, 2020	Unknown	Positive	Positive	Feb.21, 2020	Unknown	Positive	
15	Feb.08, 2020	Positive	Feb.08, 2020	Unknown	Positive	Positive	Feb.27, 2020	Unknown	Positive	
16	Feb.08, 2020	Positive	Feb.08, 2020	4	Negative	Negative	Feb.27, 2020	23	Positive	
17	Feb.08, 2020	Positive	Feb.08, 2020	Unknown	Positive	Positive	Feb.27, 2020	Unknown	Positive	
18	Feb.08, 2020	Positive	Feb.08, 2020	Unknown	Positive	Positive	Feb.27, 2020	Unknown	Positive	
19	Feb.07, 2020	Positive	Feb.08, 2020	3	Negative	Negative	Feb.22, 2020	17	Positive	
20	Feb.04, 2020	Positive	Feb.09, 2020	Unknown	Positive	Positive	Feb.24, 2020	Unknown	Positive	
21	Feb.05, 2020	Positive	Feb.09, 2020	10	Positive	Positive	Feb.19, 2020	20	Positive	
22	Feb.06, 2020	Positive	Feb.09, 2020	4	Negative	Negative	Feb.17, 2020	12	Positive	
23	Feb.09, 2020	Positive	Feb.09, 2020	Unknown	Positive	Positive	Feb.20, 2020	Unknown	Positive	

24	Feb.07, 2020	Positive	Feb.10, 2020	Unknown	Positive	Positive	Feb.20, 2020	Unknown	Positive
25	Feb.05, 2020	Positive	Feb.10, 2020	10	Positive	Positive	Feb.24, 2020	24	Positive
26	Feb.07, 2020	Positive	Feb.11, 2020	11	Positive	Positive	Feb.21, 2020	21	Positive
27	Feb.11, 2020	Positive	Feb.11, 2020	Unknown	Positive	Positive	Feb.22, 2020	Unknown	Positive
28	Feb.07, 2020	Positive	Feb.12, 2020	Unknown	Positive	Positive	Feb.22, 2020	Unknown	Positive
29	Feb.09, 2020	Positive	Feb.12, 2020	6	Positive	Negative	Feb.28, 2020	22	Positive
30	Feb.11, 2020	Positive	Feb.12, 2020	3	Negative	Negative	Feb.26, 2020	17	Positive
31	Feb.12, 2020	Positive	Feb.12, 2020	Unknown	Positive	Positive	Feb.23, 2020	Unknown	Positive
32	Feb.05, 2020	Positive	Feb.12, 2020	10	Positive	Positive	Feb.20, 2020	18	Positive
33	Feb.05, 2020	Positive	Feb.12, 2020	13	Positive	Positive	Feb.19, 2020	20	Positive
34	Feb.05, 2020	Positive	Feb.13, 2020	13	Positive	Positive	Feb.20, 2020	20	Positive
35	Feb.06, 2020	Positive	Feb.13, 2020	14	Positive	Positive	Feb.20, 2020	21	Positive
36	Feb.06, 2020	Positive	Feb.14, 2020	13	Positive	Positive	Feb.21, 2020	20	Positive
37	Feb.09, 2020	Positive	Feb.14, 2020	10	Positive	Positive	Feb.24, 2020	20	Positive
38	Feb.14, 2020	Positive	Feb.14, 2020	12	Positive	Positive	Feb.28, 2020	26	Positive
39	Feb.07, 2020	Positive	Feb.14, 2020	11	Positive	Positive	Feb.21, 2020	18	Positive
40	Feb.10, 2020	Positive	Feb.14, 2020	Unknown	Positive	Positive	Feb.23, 2020	Unknown	Positive
41	Feb.08, 2020	Positive	Feb.14, 2020	12	Positive	Positive	Feb.21, 2020	19	Positive
42	Feb.11, 2020	Positive	Feb.15, 2020	3	Negative	Negative	Feb.25, 2020	13	Positive
43	Feb.05, 2020	Positive	Feb.15, 2020	14	Positive	Positive	Feb.22, 2020	21	Positive
44	Feb.03, 2020	Positive	Feb.15, 2020	20	Positive	Positive	Feb.15, 2020	20	Positive
45	Feb.08, 2020	Positive	Feb.15, 2020	17	Positive	Positive	Feb.22, 2020	24	Positive
46	Feb.05, 2020	Positive	Feb.16, 2020	18	Positive	Positive	Feb.23, 2020	25	Positive
47	Feb.09, 2020	Positive	Feb.16, 2020	10	Positive	Positive	Feb.23, 2020	17	Positive
48	Feb.09, 2020	Positive	Feb.16, 2020	16	Positive	Positive	Feb.23, 2020	23	Positive
49	Feb.10, 2020	Positive	Feb.16, 2020	8	Negative	Negative	Feb.23, 2020	15	Positive
50	Feb.04, 2020	Positive	Feb.16, 2020	16	Positive	Positive	Feb.23, 2020	23	Positive
51	Feb.12, 2020	Positive	Feb.16, 2020	Unknown	Positive	Positive	Feb.26, 2020	Unknown	Positive

52	Feb.16, 2020	Positive	Feb.16, 2020	Unknown	Positive	Positive	Feb.27, 2020	Unknown	Negative
53	Feb.17, 2020	Positive	Feb.17, 2020	Unknown	Positive	Positive	Feb.24, 2020	Unknown	Positive
54	Feb.07, 2020	Positive	Feb.17, 2020	15	Positive	Positive	Feb.24, 2020	22	Positive
55	Feb.05, 2020	Positive	Feb.17, 2020	17	Positive	Positive	Feb.23, 2020	23	Positive
56	Feb.05, 2020	Positive	Feb.17, 2020	18	Positive	Positive	Feb.25, 2020	26	Positive
57	Feb.11, 2020	Positive	Feb.18, 2020	10	Positive	Positive	Feb.26, 2020	18	Positive
58	Feb.06, 2020	Positive	Feb.18, 2020	14	Positive	Positive	Feb.23, 2020	21	Positive
59	Feb.07, 2020	Positive	Feb.19, 2020	18	Positive	Positive	Feb.26, 2020	25	Positive
60	Feb.05, 2020	Positive	Feb.19, 2020	16	Positive	Positive	Feb.26, 2020	23	Positive
61	Feb.11, 2020	Positive	Feb.19, 2020	16	Positive	Positive	Feb.26, 2020	23	Positive
62	Feb.07, 2020	Positive	Feb.20, 2020	20	Positive	Positive	Feb.26, 2020	26	Positive
63	Feb.06, 2020	Positive	Feb.20, 2020	17	Positive	Positive	Feb.27, 2020	24	Positive
64	Feb.09, 2020	Positive	Feb.20, 2020	16	Positive	Positive	Feb.27, 2020	23	Positive
65	Feb.05, 2020	Positive	Feb.20, 2020	19	Positive	Positive	Feb.28, 2020	27	Positive
66	Feb.05, 2020	Positive	Feb.21, 2020	21	Positive	Positive	Feb.28, 2020	28	Positive
67	Feb.08, 2020	Positive	Feb.21, 2020	19	Positive	Positive	Feb.28, 2020	26	Positive
68	Feb.15, 2020	Positive	Feb.21, 2020	10	Positive	Positive	Feb.27, 2020	16	Positive
69	Feb.07, 2020	Positive	Feb.21, 2020	18	Positive	Positive	Feb.29, 2020	26	Positive
70	Feb.07, 2020	Positive	Feb.21, 2020	Unknown	Positive	Positive	Feb.29, 2020	Unknown	Positive
71	Feb.07, 2020	Positive	Feb.22, 2020	17	Positive	Positive	Feb.29, 2020	24	Positive
72	Feb.10, 2020	Positive	Feb.22, 2020	17	Positive	Positive	Feb.29, 2020	24	Positive
73	Feb.11, 2020	Positive	Feb.23, 2020	16	Positive	Positive	Mar.01, 2020	23	Positive
74	Feb.08, 2020	Positive	Feb.24, 2020	18	Positive	Positive	Feb.29, 2020	23	Positive
75	Feb.13, 2020	Positive	Feb.25, 2020	19	Positive	Positive	Feb.28, 2020	22	Positive
76	Feb.09, 2020	Positive	Feb.25, 2020	18	Positive	Positive	Feb.29, 2020	22	Positive
77	Feb.12, 2020	Positive	Feb.27, 2020	19	Positive	Positive	Feb.29, 2020	21	Positive

Clinic Data of Negative Specimens:

No.	PCR		IgG/ IgM Test Result		
	Test Date	Result	Blood collection data	IgM Result	IgG Result
1	Feb.02, 2020	Negative	Feb.02, 2020	Negative	Negative
2	Feb.05, 2020	Negative	Feb.05, 2020	Negative	Negative
3	Feb.05, 2020	Negative	Feb.05, 2020	Negative	Negative
4	Feb.05, 2020	Negative	Feb.05, 2020	Negative	Negative
5	Feb.05, 2020	Negative	Feb.05, 2020	Negative	Negative
6	Feb.05, 2020	Negative	Feb.05, 2020	Negative	Negative
7	Feb.05, 2020	Negative	Feb.05, 2020	Negative	Negative
8	Feb.05, 2020	Negative	Feb.05, 2020	Negative	Negative
9	Feb.05, 2020	Negative	Feb.05, 2020	Negative	Negative
10	Feb.05, 2020	Negative	Feb.05, 2020	Negative	Negative
11	Feb.06, 2020	Negative	Feb.06, 2020	Negative	Negative
12	Feb.06, 2020	Negative	Feb.06, 2020	Negative	Negative
13	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
14	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
15	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
16	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
17	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
18	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
19	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
20	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
21	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
22	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
23	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
24	Feb.07, 2020	Negative	Feb.07, 2020	Negative	Negative
25	Feb.08, 2020	Negative	Feb.08, 2020	Negative	Negative
26	Feb.08, 2020	Negative	Feb.08, 2020	Negative	Negative
27	Feb.08, 2020	Negative	Feb.08, 2020	Negative	Negative
28	Feb.08, 2020	Negative	Feb.08, 2020	Negative	Negative
29	Feb.08, 2020	Negative	Feb.08, 2020	Negative	Negative
30	Feb.08, 2020	Negative	Feb.08, 2020	Negative	Negative
31	Feb.09, 2020	Negative	Feb.09, 2020	Negative	Negative
32	Feb.09, 2020	Negative	Feb.09, 2020	Negative	Negative
33	Feb.09, 2020	Negative	Feb.09, 2020	Negative	Negative
34	Feb.09, 2020	Negative	Feb.09, 2020	Negative	Negative
35	Feb.09, 2020	Negative	Feb.09, 2020	Negative	Negative
36	Feb.09, 2020	Negative	Feb.09, 2020	Negative	Negative
37	Feb.10, 2020	Negative	Feb.10, 2020	Negative	Negative
38	Feb.10, 2020	Negative	Feb.10, 2020	Negative	Negative
39	Feb.10, 2020	Negative	Feb.10, 2020	Negative	Negative
40	Feb.10, 2020	Negative	Feb.10, 2020	Negative	Negative

41	Feb.11, 2020	Negative	Feb.11, 2020	Negative	Negative
42	Feb.11, 2020	Negative	Feb.11, 2020	Negative	Negative
43	Feb.11, 2020	Negative	Feb.11, 2020	Negative	Negative
44	Feb.11, 2020	Negative	Feb.11, 2020	Negative	Negative
45	Feb.11, 2020	Negative	Feb.11, 2020	Negative	Negative
46	Feb.11, 2020	Negative	Feb.11, 2020	Negative	Negative
47	Feb.11, 2020	Negative	Feb.11, 2020	Negative	Negative
48	Feb.12, 2020	Negative	Feb.12, 2020	Negative	Negative
49	Feb.12, 2020	Negative	Feb.12, 2020	Negative	Negative
50	Feb.12, 2020	Negative	Feb.12, 2020	Negative	Negative
51	Feb.12, 2020	Negative	Feb.12, 2020	Negative	Negative
52	Feb.12, 2020	Negative	Feb.12, 2020	Negative	Negative
53	Feb.12, 2020	Negative	Feb.12, 2020	Negative	Negative
54	Feb.12, 2020	Negative	Feb.12, 2020	Negative	Negative
55	Feb.13, 2020	Negative	Feb.13, 2020	Negative	Negative
56	Feb.13, 2020	Negative	Feb.13, 2020	Negative	Negative
57	Feb.13, 2020	Negative	Feb.13, 2020	Negative	Negative
58	Feb.13, 2020	Negative	Feb.13, 2020	Negative	Negative
59	Feb.14, 2020	Negative	Feb.14, 2020	Positive	Negative
60	Feb.14, 2020	Negative	Feb.14, 2020	Negative	Negative
61	Feb.14, 2020	Negative	Feb.14, 2020	Negative	Negative
62	Feb.14, 2020	Negative	Feb.14, 2020	Negative	Negative
63	Feb.14, 2020	Negative	Feb.14, 2020	Negative	Negative
64	Feb.15, 2020	Negative	Feb.15, 2020	Negative	Negative
65	Feb.15, 2020	Negative	Feb.15, 2020	Negative	Negative
66	Feb.17, 2020	Negative	Feb.17, 2020	Negative	Negative
67	Feb.17, 2020	Negative	Feb.17, 2020	Negative	Negative
68	Feb.18, 2020	Negative	Feb.18, 2020	Negative	Negative
69	Feb.18, 2020	Negative	Feb.18, 2020	Negative	Negative
70	Feb.18, 2020	Negative	Feb.18, 2020	Negative	Negative
71	Feb.18, 2020	Negative	Feb.18, 2020	Negative	Negative
72	Feb.19, 2020	Negative	Feb.19, 2020	Negative	Negative
73	Feb.20, 2020	Negative	Feb.20, 2020	Negative	Negative
74	Feb.20, 2020	Negative	Feb.20, 2020	Negative	Negative
75	Feb.21, 2020	Negative	Feb.21, 2020	Negative	Negative
76	Feb.21, 2020	Negative	Feb.21, 2020	Negative	Negative
77	Feb.21, 2020	Negative	Feb.21, 2020	Negative	Negative
78	Feb.21, 2020	Negative	Feb.21, 2020	Negative	Negative
79	Feb.22, 2020	Negative	Feb.22, 2020	Negative	Negative
80	Feb.22, 2020	Negative	Feb.22, 2020	Negative	Negative
81	Feb.22, 2020	Negative	Feb.22, 2020	Negative	Negative
82	Feb.22, 2020	Negative	Feb.22, 2020	Negative	Negative
83	Feb.23, 2020	Negative	Feb.23, 2020	Negative	Negative
84	Feb.23, 2020	Negative	Feb.23, 2020	Negative	Negative

85	Feb.24, 2020	Negative	Feb.24, 2020	Negative	Negative
86	Feb.24, 2020	Negative	Feb.24, 2020	Negative	Negative
87	Feb.25, 2020	Negative	Feb.25, 2020	Negative	Negative
88	Feb.26, 2020	Negative	Feb.26, 2020	Negative	Negative
89	Feb.28, 2020	Negative	Feb.28, 2020	Negative	Negative
90	Feb.28, 2020	Negative	Feb.28, 2020	Negative	Negative