Clinical Validation Report on IVD Reagents

Product name: 2019-nCoV Antigen Rapid Test Kit (Colloidal Gold Immunochromatography)

Model & specification: 25 tests/kit, each test strip packaged separately

Type of clinical trial: Clinical validation

Start date of clinical trial: Nov. 2, 2020

Completion date of clinical trial: Nov. 12, 2020

Testing agency: IPE Center for Clinical Laboratory

Abstract

To evaluate the 2019-nCoV Antigen Rapid Test Kit (Colloidal Gold Immunochromatography) (the "Test Kit" for short) produced by Beijing Lepu Medical Technology Co., Ltd. ("the Company" for short) for clinical application in qualitative detection of the content of 2019-nCoV antigen in clinical samples (nasal swab samples), IPE Center for Clinical Laboratory conducted a clinical study on the test strip contained therein. A total of 415 nasal swab samples were selected as the study objects, including 150 positive samples and 265 negative samples confirmed by the COVID-19 diagnosis and treatment protocol. The 2019-nCoV PCR Kit (fluorescent PCR method) (GXZZ 20203400179) (the "Reference Kit" for short) produced by Beijing Applied Biological Technologies Co., Ltd. was used as a reference kit. Based on the test result of the Reference Kit, the study objects were divided into 2019-nCoV positive group and 2019-nCoV negative group. At the same time, these samples were tested with the Test Kit, and the test results of the Test Kit and the Reference Kit were compared and statistically analyzed. The results showed that the diagnostic specificity of the Test Kit is 99.63%, the sensitivity 92.00%, the total coincidence rate 96.87%, as well as 94.37% for the sensitivity Ct $\leq$32 and 97.32% for sensitivity Ct $\leq$25. The above results show a good consistency between the Test Kit and the Reference Kit. The test kit is suitable for clinical diagnosis as an auxiliary means.

I. Introduction

As a large virus family, 2019-nCoV is a single strand plus RNA virus with an envelope. It can cause major diseases such as colds, Middle East Respiratory Syndrome (MERS), and severe acute respiratory syndrome (SARS). 2019-nCoV was officially named by the World Health Organization on January 12, 2020. The core protein of 2019-nCoV is N protein (Nucleocapsid) inside. It is relatively conserved among β-coronaviruses and is often used as a means for the diagnosis of coronaviruses. As the key receptor for 2019-nCoV to enter the cells, ACE2 is of great significance to study the viral infection mechanism.

Currently, the research on the Company's 2019-nCoV Antigen Rapid Test Kit (Colloidal Gold Immunochromatography) has been completed. In order to validate its clinical suitability and accuracy, we are prepared to carry out clinical validation. Entrusted by Beijing Lepu Medical Technology Co., Ltd., IPE Center for Clinical Laboratory undertook the clinical trial on the 2019-nCoV Antigen Rapid Test Kit (Colloidal Gold Immunochromatography) produced hereby in the clinical study.

II. Objective

To evaluate the suitability and accuracy of 2019-nCoV Antigen Rapid Test Kit (Colloidal Gold Immunochromatography) (the "Test Kit" for short) produced by Beijing Lepu Medical Technology Co., Ltd. ("the Company" for short) for clinical application, its clinical performance should be investigated systematically.

The purpose of this clinical trial: To conduct the comparative experimental study on the same clinical samples with the Test Kit "2019-nCoV Antigen Rapid Test Kit (Colloidal Gold Immunochromatography)" produced by the Company and the Reference Kit produced by Beijing Applied Biological Technologies Co., Ltd. Statistical analysis was carried out on the test results to calculate the diagnostic specificity, the percent of the sensitivity to the total coincidence rate, as well as Sensitivity Ct ≤32 and Sensitivity Ct ≤25. According to the results of statistical analysis, it was validated that the Test Kit is equivalent to the Reference Kit, so as to prove the suitability and accuracy of the Test Kit for clinical auxiliary diagnosis.

The results of clinical trial are an important basis for evaluating the efficacy and safety of the test kit.

III. Test Management

1. Overview of management structure

This clinical trial was conducted by Beijing IPE Center for Medical Laboratory. As the applicant, Beijing Lepu Medical Technology Co., Ltd. was responsible for communication and contact during the clinical trial.

2. Quality control of the laboratory

1) All investigators participating in this clinical trial passed the qualification examination and had professional background and capacity related to clinical trial. Before clinical trial, all investigators had enough understanding and knowledge for specific contents of the clinical trial protocol and all indicators through training.

2) The quality control of the laboratory met the requirements of quality control of clinical laboratory to ensure the standardization of experimental operating instructions.

3) Quality control before the analysis: Check whether sample collection and processing meet the requirements, and whether sample number and other information are correct.

4) Regularly inspect the implementation and completion of the clinical trial. Check integrity and accuracy of clinical sample information and verify test results.

3. Statistics and data management

1) All selected cases were filled in clinical outcome summary, including subject sample number, age, gender, etc. Experimenters filled the test results of both the Reference Kit and the test kit in the clinical outcome summary.

2) After finishing data entry, main investigators, experimenters and applicant reviewed the data together and locked data without any doubt.

3) The clinical outcome summary was then submitted to analysts for statistics and analysis. The obtained statics and analysis results were filled in corresponding parts of clinical report.

4. Data preservation

The test unit and the applicant kept one copy of clinical trial data respectively, including the following: Clinical Test Agreement, Clinical Test Protocol, Ethics Committee Instructions, Clinical Test Report (test unit reports), General Report on Clinical Test, and Clinical Outcome Summary.

5. Problems found during investigation and measures

In clinical trials, when a small number of samples are tested, the results of the Reference Kit and the Test Kit may be inconsistent. In this case, the clinical quantitative data of te samples involved in the test and the other common clinical trial reagents produced with the same principle are used for re-test.

IV. Test Design

1. Description of overall test design and protocol

With reference to the *Guideline of Clinical Study on In Vitro Diagnostic Reagents*, the appropriate study objects were selected and the marketed 2019-nCoV PCR Kit (fluorescent PCR method) (GXZZ 20203400179) was used as a reference kit to conduct blinding simultaneous comparison, for analyzing the diagnostic specificity, and percentage of diagnostic sensitivity to the total coincidence rate of the Test Kit and the Reference Kit.

A total of 417 nasal swab samples were clinically selected as the study objects. Based on the test result of the Reference Kit, the samples were divided into a positive group and a negative group. The samples were tested with the Test Reagent and the reference reagent, to compare the test results obtained with the two types of product. Statistical analysis was carried out on the test results to calculate the diagnostic specificity, the percentage of the sensitivity to the total coincidence rate, as well as Sensitivity Ct $\leq$32 and Sensitivity Ct $\leq$25. According to the results of statistical analysis, the suitability and accuracy of the Test Kit were judged, so as to determine whether the test result of the Test Kit is consistent with that of the Reference Kit.

2. Research method

1) Sample collection, storage and transportation methods

After sample collection, the sample was put in the treatment fluid, stored at 2--8℃ and tested within 24h. The samples cannot be placed at room temperature for a long period of time.

2) Determination of reference method

Since the 2019-nCoV PCR Kit (fluorescent PCR method) produced by Beijing Applied Biological Technologies Co., Ltd. (GXZZ 20203400179) is a 2019-nCoV PCR Kit officially marketed in China earlier, it is 2019-nCoV antigen test kit just like the Test Kit produced by the Company, both of which are new coronavirus detection products and widely used in clinical practice and generally considered to be of good quality. The purpose and scope of clinical application of the product are the same as the test kit. The product is therefore selected as a reference reagent for clinical study.

The samples with inconsistent test results in the test group and the control group can be compared and checked by clinical quantitative results and clinical diagnosis results.

3) Names, specifications, sources, lot number, expiry dates and preservation conditions of the products for clinical study

The product name for clinical study is 2019-nCoV Antigen Rapid Test Kit (Colloidal Gold Immunochromatography), and the specification is 25 tests/kit. The product is provided by the Company. The lot number is 20CG2701X, and its shelf-life is 12 months and the storage condition is 4℃~30℃.

The Reference Kit is 2019-nCoV PCR Kit (fluorescent PCR method) (GXZZ 20203400179)produced by Beijing Applied Biological Technologies Co., Ltd., the specification is 48 tests/kit, its shelf-life is 6 months and thestorage condition is dark place with -20℃±5℃.

4) Methods of quality control

Regularly inspect the implementation and completion of the clinical trial. Check integrity and accuracy of clinical sample information and verify test results.

5) Clinical trial method

After all the subject samples were tested with the Reference Kit and the Test Kit in synchronization respectively, and the test results were compared. A statistical analysis on the recorded test result of the test kit and that of the Reference Kit was carried out after all the clinical samples were tested, followed by calculating the diagnostic specificity, the percentage of diagnostic sensitivity to the total coincidence rate, as well as Sensitivity Ct ≤32 and Sensitivity Ct ≤25.

6) Statistical analysis methods for clinical study data

The samples were tested with the Test Kit and the Reference Kit, to compare the test results obtained with the two types of product. Statistical analysis was carried out by calculating the diagnostic specificity, the percentage of the sensitivity to the total coincidence rate, as well as Sensitivity Ct ≤32 and Sensitivity Ct ≤25. According to the results of statistical analysis, the suitability and accuracy of the were judged, to calculation the test and statistical results of the Test Kit in testing different types of samples. Meanwhile, different types of samples were tested with the Test Kit and the Reference Kit in synchronization respectively, and the test results were compared. After all the clinical samples were tested, a statistical analysis on the recorded test results was carried out and followed by calculating the diagnostic specificity,

the percentage of diagnostic sensitivity to the total coincidence rate, as well as Sensitivity Ct ≤32and Sensitivity Ct ≤25. Then, both kits were evaluated for their equivalency based on these statistical indicators.

7) Final clinical evaluation

Compared with the Reference Kit officially marketed, the coincidence rate was calculated. The product performance shall meet the following requirements.

1) Diagnostic specificity: It means the proportion of samples tested negative with the Test Kit and the Reference Kit in those tested negative with the Reference Kit. The diagnostic specificity should be greater than 90%.

2) Diagnostic sensitivity: It means the proportion of samples tested positive with the Test Kit and the Reference Kit in those tested positive with the Reference Kit.

3) Sensitivity Ct ≤32: It means for the sample with Ct value ≤32, the proportion of samples tested positive with the Test Kit in those tested positive with the Reference Kit. The sensitivity should be greater than 90%.

4) Sensitivity Ct ≤25: It means for the sample with Ct value ≤25, the proportion of samples tested positive with the Test Kit in those tested positive with the Reference Kit. The sensitivity should be greater than 90%.

a. Diagnostic specificity and sensitivity

	Test results of nucleic acid		Total
Test kit	Positive	Negative	
Positive	True positive (A)	False positive (B)	A+B
Negative	False negative (C)	True negative (D)	C+D
Total	A+C	B+D	A+B +C+D

In general, the formula for diagnostic specificity, diagnostic sensitivity and total coincidence rate are as follows:

Diagnostic sensitivity =A /(A+C) ×100%

Diagnostic specificity=D /(B+D) ×100%

Total coincidence rate= (A+D)/(A+B+C+D) ×100%

b. Sensitivity Ct ≤32

	Test results of nucleic acid
Test kit	Positive (Ct≤32)
Positive	True positive (E)
Negative	False negative (F)

Total	E+F

Calculation formula: Sensitivity =E /(E+F) ×100%

c. Sensitivity Ct ≤25

	Test results of nucleic acid
Test kit	Positive (Ct≤25)
Positive	True positive (G)
Negative	Falsc negative (H)
Total	G+H

Calculation formula: Sensitivity =G /(G+H) ×100%

The diagnostic specificity and sensitivity meet the clinical requirements, and the two methods or products are considered to be equivalent; if the difference between diagnostic specificity and sensitivity is too large, the clinical trial protocol should be redesigned.

8) Modification of the protocol during the research

No modification.

V. Results and Analysis of Clinical Trial

A total of 415 nasal swab samples were selected as the study objects, including 150 positive samples and 265 negative samples confirmed by the COVID-19 diagnosis and treatment protocol. All selected samples were tested.

Consistency statistics for the 2019-nCoV Antigen Rapid Test Kit (Colloidal Gold Immunochromatography) (Test Kit) produced by the Company and 2019-nCoV nucleic acid detection results was carried out to analyze the diagnostic sensitivity, diagnostic specificity, total coincidence rate, as well as Sensitivity Ct ≤32 and Sensitivity Ct ≤25 of the Test Kit and nucleic acid detection results, and summarize the indicators in the form of four-fold table. The results are as follows:

Table 1 Summary of the Test Kit and Nucleic Acid Detection Results

	Reference kit tested positive	Reference kit tested negative	Total
Test Kit tested positive	138	1	139
Test Kit tested negative	12	264	276
Total	150	265	415

Table 2 Summary of Diagnostic Sensitivity and Specificity Results

Item	Formula	Result	95% CI
Diagnostic sensitivity (%)	A /(A+C) ×100%	92.00%	86.54% ~ 95.37%
Diagnostic specificity (%)	D /(B+D) ×100%	99.63%	97.92%~99.93%
Total coincidence rate (%)	(A+D) / (A+B+C+D) ×100%	96.87%	

Table 3 Summary of PCR Ct≤32 Results with the Test Kit (Sensitivity Ct ≤32 Result)

	Test results of nucleic acid
Test kit	Positive (Ct≤32)
Positive	134
Negative	8
Total	142
Sensitivity	94.37%
95% CI	89.28%~97.12%

Table 4 Summary of PCR Ct≤25 Results with the Test Kit (Sensitivity Ct ≤25 Result)

	Test results of nucleic acid
Test kit	Positive (Ct≤25)
Positive	109
Negative	3
Total	112
Sensitivity	97.32%
95% CI	92.42%~99.09%

Table 5 Data Analysis

Diagnostic Sensitivity (95% CI), N	92.00% (86.54, 95.37), 150
Sensitivity Ct ≤32, N	94.37% (89.28, 97.12), 142
Sensitivity Ct ≤25, N	97.32% (92.42, 99.09), 112
Diagnostic Specificity (95% CI), N	99.63% (97.92, 99.93), 265

It can be seen from Table 1 that among the 150 samples in the positive group, 138 cases are positive and 12 cases are negative. Among the 265 samples in the negative group, 264 cases are negative and 1 case is positive. The diagnostic specificity, diagnostic sensitivity and total coincidence rate are all over 90%, Sensitivity Ct ≤32 is 94.37%, and Sensitivity Ct ≤25 is 97.32%, which indicates that the Test Kit has good diagnostic sensitivity and specificity, and is in good consistency with the Reference Kit.

VI. Discussion and Conclusion

(I) Discussion

The 2019-nCoV Antigen Rapid Test Kit (Colloidal Gold Immunochromatography) produced by Beijing Lepu Medical Technology Co., Ltd. contains the monoclonal antibody of 2019-nCoV N protein marked with colloidal gold pre-coated on the gold conjugate pad, the monoclonal antibody of 2019-nCoV

N protein immobilized in the test area and the corresponding antibody in the quality control area (C). The 2019-nCoV antigen in the nasal swab samples can be quickly detected for screening of COVID-19 pneumonia patients. The purpose of the clinical trial was to evaluate the clinical performance of the product. The test can be summarized as follows:

The comparative analysis results between the Test Kit and 2019-nCoV PCR Kit (fluorescent PCR method) (GXZZ 20203400179) produced by Beijing Applied Biological Technologies Co., Ltd. are as follows:

Test results obtained with the Test Kit and the Reference Kit: With the Test Kit, the diagnostic specificity is 99.63%, the diagnostic sensitivity 92.00% and total coincidence rate 96.87%, Sensitivity Ct ≤32, 94.37% and Sensitivity Ct <25, 97.32%, which indicates that the two systems are equivalent and the Test Kit is of good consistency with the nucleic acid detection results.

(II) Test conclusion

Compared with the Test Kit and 2019-nCoV PCR Kit (fluorescent PCR method) (GXZZ 20203400179) produced by Beijing Applied Biological Technologies Co., Ltd., the test results show that the diagnostic specificity, diagnostic sensitivity, total coincidence rate percentage, Sensitivity Ct ≤32 and Sensitivity Ct ≤25 of the Test Kit are relatively high. The above analysis results can demonstrate that the Test Kit is in good consistency with the Reference Kit, and the two systems are equivalent.

VII. Description of Special Circumstances in Clinical Investigation

There are no special circumstances to be stated in this clinical investigation

Annex I Clinical Trial Data

Sample Number	Test result of Product tested	Test result of reference product
1	Positive	Positive (ct:22)
2	Negative	Negative
3	Positive	Positive (ct:26)
4	Negative	Negative
5	Negative	Negative
6	Negative	Negative
7	Positive	Positive (ct:23)
8	Positive	Positive (ct:31)
9	Positive	Positive (ct:20)
10	Negative	Negative
11	Negative	Negative
12	Negative	Negative
13	Positive	Positive (ct:19)
14	Positive	Positive (ct:28)
15	Positive	Positive (ct:20)
16	Negative	Negative
17	Negative	Negative
18	Positive	Negative
19	Positive	Positive (ct:20)
20	Negative	Negative
21	Negative	Negative
22	Negative	Negative
23	Negative	Negative
24	Negative	Negative
25	Positive	Positive (ct:23)
26	Negative	Negative
27	Negative	Negative
28	Positive	Positive (ct:22)
29	Negative	Negative
30	Negative	Negative
31	Negative	Negative
32	Negative	Negative
33	Negative	Negative
34	Negative	Negative
35	Positive	Positive (ct:19)
36	Negative	Negative
37	Positive	Positive (ct:20)
38	Negative	Negative
39	Negative	Negative
40	Negative	Negative
41	Positive	Positive (ct:23)
42	Negative	Negative
43	Negative	Negative
44	Negative	Negative

45	Negative	Negative
46	Negative	Negative
47	Positive	Positive (ct:24)
48	Negative	Positive (ct:33)
49	Negative	Negative
50	Positive	Positive (ct:23)
51	Negative	Negative
52	Negative	Negative
53	Positive	Positive (ct:21)
54	Positive	Positive (ct:23)
55	Negative	Positive (ct:23)
56	Positive	Positive (ct:22)
57	Negative	Negative
58	Negative	Negative
59	Negative	Negative
60	Negative	Negative
61	Negative	Negative
62	Positive	Positive (ct:24)
63	Negative	Negative
64	Positive	Positive (ct:29)
65	Negative	Negative
66	Negative	Negative
67	Positive	Positive (ct:21)
68	Negative	Negative
69	Negative	Negative
70	Negative	Negative
71	Negative	Negative
72	Positive	Positive (ct:23)
73	Negative	Negative
74	Negative	Negative
75	Positive	Positive (ct:33)
76	Negative	Negative
77	Positive	Positive (ct:21)
78	Positive	Positive (ct:22)
79	Negative	Negative
80	Positive	Positive (ct:23)
81	Negative	Negative
82	Negative	Negative
83	Positive	Positive (ct:32)
84	Negative	Negative
85	Negative	Negative
86	Negative	Negative
87	Negative	Positive (ct:29)
88	Positive	Positive (ct:17)
89	Negative	Negative
90	Negative	Negative
91	Positive	Positive (ct:22)
92	Negative	Positive (ct:23)
93	Negative	Negative
94	Positive	Positive (ct:28)

95	Positive	Positive (ct:16)
96	Negative	Negative
97	Positive	Positive (ct:17)
98	Negative	Negative
99	Negative	Negative
100	Negative	Negative
101	Negative	Negative
102	Negative	Negative
103	Positive	Positive (ct:20)
104	Negative	Negative
105	Negative	Negative
106	Negative	Negative
107	Positive	Positive (ct:23)
108	Negative	Positive (ct:37)
109	Positive	Positive (ct:16)
110	Positive	Positive (ct:27)
111	Negative	Negative
112	Negative	Negative
113	Negative	Negative
114	Negative	Negative
115	Positive	Positive (ct:17)
116	Negative	Negative
117	Positive	Positive (ct:23)
118	Negative	Negative
119	Negative	Negative
120	Negative	Negative
121	Positive	Positive (ct:22)
122	Positive	Positive (ct:31)
123	Positive	Positive (ct:23)
124	Negative	Positive (ct:31)
125	Negative	Negative
126	Negative	Negative
127	Negative	Negative
128	Positive	Positive (ct:24)
129	Negative	Negative
130	Negative	Negative
131	Positive	Positive (ct:28)
132	Negative	Negative
133	Positive	Positive(ct:19)
134	Negative	Negative
135	Negative	Negative
136	Negative	Negative
137	Negative	Negative
138	Positive	Positive (ct:20)
139	Positive	Positive (ct:16)
140	Negative	Negative
141	Positive	Positive (ct:34)
142	Negative	Negative
143	Negative	Negative
144	Negative	Negative

145	Negative	Negative
146	Positive	Positive (ct:21)
147	Negative	Negative
148	Positive	Positive (ct:28)
149	Negative	Negative
150	Negative	Negative
151	Negative	Negative
152	Negative	Negative
153	Negative	Negative
154	Negative	Negative
155	Negative	Negative
156	Negative	Negative
157	Negative	Negative
158	Negative	Negative
159	Positive	Positive(ct:21)
160	Negative	Negative
161	Negative	Negative
162	Negative	Negative
163	Negative	Negative
164	Negative	Positive (ct:25)
165	Positive	Positive (ct:26)
166	Positive	Positive (ct:20)
167	Negative	Negative
168	Positive	Positive (ct:19)
169	Positive	Positive (ct:35)
170	Negative	Negative
171	Positive	Positive (ct:21)
172	Negative	Negative
173	Negative	Negative
174	Negative	Negative
175	Negative	Negative
176	Negative	Negative
177	Negative	Negative
178	Positive	Positive (ct:29)
179	Negative	Negative
180	Positive	Positive (ct:23)
181	Positive	Positive (ct:23)
182	Positive	Positive (ct:20)
183	Positive	Positive(ct:24)
184	Negative	Negative
185	Negative	Negative
186	Negative	Negative
187	Negative	Negative
188	Negative	Negative
189	Negative	Negative
190	Negative	Negative
191	Negative	Negative
192	Positive	Positive (ct:30)
193	Negative	Negative
194	Negative	Negative

195	Positive	Positive (ct:22)
196	Negative	Negative
197	Positive	Positive (ct:23)
198	Negative	Negative
199	Positive	Positive (ct:29)
200	Negative	Negative
201	Negative	Negative
202	Negative	Negative
203	Negative	Negative
204	Positive	Positive (ct:17)
205	Positive	Positive (ct:21)
206	Negative	Negative
207	Negative	Negative
208	Negative	Negative
209	Positive	Positive (ct:19)
210	Negative	Negative
211	Negative	Negative
212	Negative	Negative
213	Negative	Negative
214	Positive	Positive (ct:20)
215	Negative	Negative
216	Negative	Negative
217	Negative	Negative
218	Positive	Positive (ct:17)
219	Negative	Negative
220	Negative	Negative
221	Negative	Negative
222	Negative	Negative
223	Positive	Positive (ct:19)
224	Positive	Positive (ct:24)
225	Negative	Negative
226	Negative	Negative
227	Positive	Positive (ct:28)
228	Negative	Negative
229	Negative	Negative
230	Negative	Negative
231	Positive	Positive (ct:27)
232	Negative	Negative
233	Negative	Negative
234	Negative	Negative
235	Negative	Negative
236	Positive	Positive (ct:23)
237	Negative	Negative
238	Positive	Positive (ct:22)
239	Negative	Negative
240	Negative	Negative
241	Negative	Negative
242	Negative	Negative
243	Negative	Negative
244	Negative	Negative

245	Negative	Negative
246	Negative	Negative
247	Negative	Negative
248	Negative	Negative
249	Negative	Negative
250	Negative	Negative
251	Positive	Positive (ct:22)
252	Negative	Negative
253	Negative	Negative
254	Negative	Negative
255	Positive	Positive (ct:29)
256	Negative	Negative
257	Negative	Negative
258	Negative	Negative
259	Positive	Positive (ct:18)
260	Positive	Positive (ct:19)
261	Positive	Positive (ct:22)
262	Negative	Negative
263	Negative	Negative
264	Negative	Negative
265	Positive	Positive (ct:19)
266	Positive	Positive (ct:22)
267	Negative	Negative
268	Negative	Negative
269	Negative	Negative
270	Positive	Positive (ct:33)
271	Negative	Negative
272	Positive	Positive (ct:23)
273	Negative	Negative
274	Negative	Negative
275	Positive	Positive (ct:19)
276	Negative	Negative
277	Negative	Negative
278	Negative	Negative
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280	Negative	Negative
281	Positive	Positive (ct:17)
282	Negative	Negative
283	Negative	Positive (ct:32)
284	Negative	Negative
285	Positive	Positive (ct:19)
286	Negative	Negative
287	Negative	Negative
288	Negative	Negative
289	Positive	Positive (ct:23)
290	Negative	Negative
291	Positive	Positive (ct:16)
292	Negative	Negative
293	Positive	Positive (ct:32)
294	Negative	Negative

295	Negative	Negative
296	Negative	Negative
297	Positive	Positive (ct:22)
298	Negative	Negative
299	Positive	Positive (ct:24)
300	Negative	Negative
301	Negative	Negative
302	Positive	Positive (ct:27)
303	Positive	Positive (ct:18)
304	Positive	Positive (ct:24)
305	Negative	Negative
306	Negative	Negative
307	Positive	Positive (ct:23)
308	Positive	Positive (ct:24)
309	Positive	Positive (ct:22)
310	Positive	Positive (ct:24)
311	Negative	Positive (ct:27)
312	Negative	Negative
313	Negative	Negative
314	Negative	Negative
315	Positive	Positive (ct:22)
316	Negative	Negative
317	Positive	Positive (ct:18)
318	Negative	Negative
319	Negative	Negative
320	Positive	Positive (ct:24)
321	Negative	Negative
322	Negative	Negative
323	Negative	Negative
324	Positive	Positive (ct:30)
325	Negative	Negative
326	Positive	Positive (ct:20)
327	Negative	Negative
328	Negative	Negative
329	Positive	Positive (ct:19)
330	Negative	Negative
331	Negative	Negative
332	Negative	Negative
333	Positive	Positive (ct:27)
334	Negative	Negative
335	Positive	Positive (ct:20)
336	Negative	Negative
337	Positive	Positive (ct:24)
338	Negative	Negative
339	Negative	Negative
340	Negative	Negative
341	Negative	Negative
342	Positive	Positive (ct:18)
343	Negative	Negative

344	Positive	Positive (ct:20)
345	Negative	Negative
346	Negative	Negative
347	Negative	Positive (ct:35)
348	Positive	Positive (ct:23)
349	Negative	Negative
350	Negative	Negative
351	Negative	Negative
352	Positive	Positive (ct:23)
353	Negative	Negative
354	Positive	Positive (ct:23)
355	Negative	Negative
356	Positive	Positive (ct:27)
357	Positive	Positive (ct:24)
358	Negative	Negative
359	Negative	Negative
360	Positive	Positive (ct:23)
361	Negative	Negative
362	Positive	Positive (ct:26)
363	Negative	Negative
364	Positive	Positive (ct:20)
365	Negative	Negative
366	Negative	Negative
367	Positive	Positive (ct:22)
368	Negative	Negative
369	Positive	Positive (ct:24)
370	Negative	Negative
371	Negative	Negative
372	Positive	Positive (ct:23)
373	Negative	Negative
374	Negative	Negative
375	Positive	Positive (ct:28)
376	Negative	Negative
377	Positive	Positive (ct:20)
378	Negative	Negative
379	Positive	Positive (ct:19)
380	Negative	Positive (ct:34)
381	Negative	Negative
382	Negative	Negative
383	Positive	Positive (ct:24)
384	Negative	Negative
385	Positive	Positive (ct:23)
386	Negative	Negative
387	Positive	Positive (ct:19)
388	Negative	Negative
389	Positive	Positive (ct:23)
390	Negative	Negative
391	Negative	Negative
392	Negative	Negative
393	Negative	Negative

394	Positive	Positive (ct:18)
395	Negative	Negative
396	Positive	Positive (ct:20)
397	Positive	Positive (ct:29)
398	Negative	Negative
399	Negative	Negative
400	Positive	Positive (ct:24)
401	Negative	Negative
402	Positive	Positive (ct:23)
403	Negative	Negative
404	Negative	Negative
405	Positive	Positive (ct:22)
406	Positive	Positive (ct:24)
407	Negative	Negative
408	Negative	Negative
409	Positive	Positive (ct:16)
410	Negative	Negative
411	Negative	Negative
412	Negative	Negative
413	Negative	Positive (ct:29)
414	Negative	Negative
415	Negative	Negative