

ISSN Online: 2162-4526 ISSN Print: 2162-450X

# **Analysis of Commercial Assays for the Detection of SARS-CoV-2 Antibodies or Antigens**

John M. González#, William J. Shelton\*, Manuel Díaz-Vallejo\*, Victoria E. Rodriguez-Castellanos\*, Juan Diego H. Zuluaga\*, Diego F. Chamorro\*, Daniel Arroyo-Ariza\*

Biomedical Sciences Group, School of Medicine, Universidad de los Andes, Bogotá, DC, Colombia Email: \*johgonza@uniandes.edu.co

How to cite this paper: González, J.M., Shelton, W.J., Díaz-Vallejo, M., Rodriguez-Castellanos, V.E., Zuluaga, J.D.H., Chamorro, D.F. and Arroyo-Ariza, D. (2020) Analysis of commercial assays for the detection of SARS-CoV-2 antibodies or antigens. *Open Journal of Immunology*, **10**, 21-35. https://doi.org/10.4236/oji.2020.102003

Received: April 27, 2020 Accepted: June 15, 2020 Published: June 18, 2020

Copyright © 2020 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

http://creativecommons.org/licenses/by/4.0/





#### **Abstract**

Background: COVID-19 produced by SARS-CoV-2 infection has spread worldwide. There is a growing need for immunological assays to detect viral specific antibodies or viral antigen. Current standard of diagnosis is reverse-transcriptase polymerase chain reaction (RT-PCR) in nasopharyngeal swabs. However, serological tests can be used to determine previous exposure to the virus and complement the diagnosis. IgM and IgG SARS-CoV-2 specific antibodies can be detected as early as one week after infection and assays can be useful to test large groups of individuals. This work revised the available information concerning assays that detect antibodies and antigens for SARS-CoV-2. Methods: Three sources of information were used: technical data sheets (TDS), web pages of the company's products, and published articles in Pubmed with reference to the use of diagnostic kits. All the information was revised until April 5th 2020. Results: There were 226 tests coming from 20 countries, mainly from China. TDS were found only in 50 (22.1%). Most assays detect specific antibodies (n 180) based on immunochromatography methods (n 110) and use blood-derived samples (n 105). Assays for antibodies detection measured mainly IgM/IgG (n 112) and the most common procedure time was <20 min (n 83). Internal control referred as sensitivity and specificity was found only in 18.6% (n 42) of the assays. The majority of the tests are currently for in vitro diagnosis (IVD). A total 165 articles were found on PubMed, 15 were included and only 4 used the commercial kits reviewed. Conclusions: Due to the urgency of producing diagnostic tests for SARS-CoV-2, there is a broad offer of kits. Many tests need additional information for their application. The data collected may be useful in the selection of assays, but more and higher quality information is needed.

# **Keywords**

Antibody, Antigen, Coronavirus, Immunoassay, SARS

<sup>\*</sup>These authors contributed equally to this work.

#### 1. Introduction

Nidoviruses are positive-sense single-stranded RNA viruses that infect a large number of vertebrates. Within these is the family of coronaviruses, which has four groups, that caused three epidemic outbreaks in recent decades [1]. Coronaviruses were described as causing common respiratory symptoms in the 1960's [2]. They may be responsible for between 7% and 15% of uncomplicated upper respiratory infections [3]. SARS (severe acute respiratory syndrome) in 2002, from China, was the first report of a coronavirus outbreak with a mortality around 10%. The virus was presumably transmitted to humans by a mammal (civet cat), probably derived from bats. The second outbreak was MERS (Middle East respiratory syndrome), originated in Saudi Arabia, transmitted by camels, but also probably derived from bats; with a mortality close to 40% [1]. Now, we have a third epidemic, the coronavirus (CoV) SARS-CoV-2, which produces COVID-19 (coronavirus disease 2019). The outbreak began in the Wuhan province in China, but has now turned into a pandemic. The sequence of the virus genome isolated from patients is similar to a bat virus [4]. In China, the infection produced mild respiratory symptoms in about 80% of those infected, however, 5% were admitted to the Intensive Care Unit (ICU), 2.3% received mechanical ventilation and the mortality rate was 1.3% [5]. The rapid case growth around the world means that in a short time the health systems could saturate rapidly [6]. The current standard assay for COVID-19 diagnosis is the detection of viral RNA in nasopharyngeal swabs using reverse-transcriptase polymerase chain reaction (RT-PCR) [7]. Rapid and simple immunoassay tests have been developed to detect viral antigen or antibodies against the SARS-CoV-2 virus in human blood even within 15 minutes. Antibody response can be detected as early as 5 days post-infection [8] and the antibody-secreting cells peak around day 7 - 8 post-infection [9] [10]. One of the first peer reviewed studies of this kind of assays showed a sensitivity of 88.66% and a specificity of 90.63% in 397 patients with SARS-CoV-2 confirmed by PCR [11]. There are currently more than 200 immunoassays for SARS-CoV-2 to detect antigens or specific antibodies [12]. The goal of this study is to carry out a comprehensive review of the wide offer of serological kits to detect SARS-CoV-2 antigen or antibodies, in order to help institutions and policymakers define the best option for massive testing. There is an urgent need for rapid serological assays for SARS-CoV-2 that will be a useful tool for public health in the upcoming days.

#### 2. Methods

#### 2.1. Test Search

We conducted web searches for pages listing serology assays for SARS-CoV-2. Descriptive information from each assay was obtained from technical data sheets (TDS) or their respective company web page. Variables obtained were: country of origin, type of immuno-assay, procedure time, sample type, fixed antibody for direct assays, fixed antigen and antibody isotype for indirect assays, sensitivity,

specificity, current regulatory status and published studies. We used not reported (N/R) to specify when information about a variable was not found; and N/A when a variable did not apply.

#### 2.2. Literature Search

A search was conducted using Pubmed based on the PRISMA guidelines (<a href="http://www.prisma-statement.org/">http://www.prisma-statement.org/</a>) for articles describing studies of serology with human samples for SARS-CoV-2. For our search strategy we used the terms: Human + (serology OR antibodies) + (nCoV OR SARS-CoV-2 OR COVID-19) and also (serology OR antibodies) + (nCoV OR SARS-CoV-2 OR COVID-19). Inclusion criteria incorporated articles published in English that involved studies with serological tests for SARS-CoV-2 diagnosis. The following articles were rejected: all those that did not contain serological assays for SARS-CoV-2 diagnosis; studies in another language different than English and studies that were not related to SARS-CoV-2. We examined the articles, looking for ones that mentioned the use of commercial antigen or antibody detection kits. Data was obtained until April 5<sup>th</sup> 2020.

### 2.3. Data Analysis and Report

Information was stored in an Excel file (Microsoft, Redmond, WA). Data was randomly chosen to be verified by two authors. Information was presented as percentages and means. No statistical analysis was applied.

#### 2.4. Ethics Statement

There were no patients or clinical data involved in the development of this study, thus no approval by any Institutional Review Board was needed.

#### 3. Results

#### 3.1. Tests' Characteristics

We scanned the internet for web pages listing immunoassays for SARS-CoV-2 until April 5th of 2020, and four were used: <a href="https://www.finddx.org/">https://www.finddx.org/</a> (n 213), <a href="https://www.finddx.org/">https://www.finddx.org/</a> (n 213), <a href="https://www.modernhealthcare.com/">https://www.finddx.org/</a> (n 54) and <a href="https://www.minsal.cl/">https://www.minsal.cl/</a> (n 12), <a href="https://www.minsal.cl/">Supplementary Table S1</a>. The last web page was included because it had information about assays developed in South America, not found in the other lists. Information about kits and companies was crossed to complete or eliminate entries. We used companies' web pages and technical data sheets (TDS), the official document provided by the manufacturer including specific characteristics, instructions for use, clinical and analytical performance. We found a total of 226 immunoassays from 20 different countries, 80.1% came from 4 countries, China, USA, South Korea and Germany. These countries represent 48.7%, 21.7%, 9.7% and 3.5% of the assays, respectively. TDSs were found in 22.1% of assays. Assays were divided in antigen detection (direct) or antibody detection (indirect), according to each TDS. When the TDS

was not available (n 176), the assay type was assigned according to the description of the tests' name. From the reported (n 219), 82.2% were indirect and 17.8% were direct assays. Samples used to carry out the tests were categorized in: blood-derived (blood, serum, plasma) and naso-oropharyngeal swab and other fluids (oropharyngeal swab, bronchoalveolar lavage or sputum). For 112 of the assays, the sample type was not identified and from the reported, 92.1% use blood-derived samples, and only 7.9% swabbing samples. All of the samples obtained from naso-oropharyngeal swabs were for direct assays.

From the antigen assays (direct n 39), only two reported the specific monoclonal antibodies fixed to the plate, against viral nucleocapsid (N) protein. From the antibody assays (indirect n 180) 25 reported the antigen used for antibody detection: 2 whole viral antigen and 23 recombinant proteins including the spike (S) protein (n 3), nucleocapsid (n 1) and recombinant unspecified viral antigen (n 19). Only 172 assays reported the method used for evaluation. Most of these assays were based on immunochromatography (63.6%), followed by ELISA (23.1%) and different methods for fluorescence detection (6.4%). For the tests that describe the strategy of result interpretation (n 166), as most of the assays are based on immunochromatography, results are visualized as bands in 65% and 35% are automated. There are also techniques based on chemiluminescence, immunoturbidimetry and bioelectronic detection. Of the total group of antibody assays, some analyzed a unique antibody isotype: IgA one assay (0.5%), IgG 22 assays (11.7%) and IgM 24 assays (12.8%); others analyzed two isotypes simultaneously: 112 assays detected IgM/IgG (59.6%), 2 IgM/IgA (1.1%) and 2 measured three isotypes, IgA/IgG/IgM (1.1%). A total of 5 assays (2.7%) reported measuring total antibodies, **Table 1**. Procedure time was not found in 124 (55%) and 102 (45%) reported the specific time. Of these, 43 assays are done in 10 min or less, 40 between 10 to 20 min (42.2% and 39.2%, respectively), 4 between 20 to 30 min (3.9%), one between 30 min and 1 hour (1%), and 14 take more than an hour (13.7%), some of them reaching even two hours.

A total of 18.6% of the assays reported internal validation, defined here as the data either found in the TDS or provided by the manufacturer web page. The number of assays that reported sensitivity or specificity was 41 (18.1%) and 42 (18.6%) respectively. The sensitivity of the assays ranged between 45% and 100%, **Table 2**. On the other hand, the specificity of the assays ranged between 90.3% and 100%, **Table 3**. Only 33 (14.1%) provided the number of individuals evaluated for the sensitivity and specificity analysis. The average number of individuals tested was 274, including 12 with less than 100 individuals and 1 kit with more than 1000 individuals tested. The average percentage of infected individuals was 36.1% of the tested individuals. More specific data on sensitivity, specificity and the number of people tested can be found in **Supplementary Table S2**. Regarding the intent to use and regulatory status no current label requirement was found for 46 assays (20.4%). From the reported, 113 (62.8%) qualified for in-vitro diagnostics (IVD), 37 (20.6%) for research use only (RUO),

Table 1. Antibody isotypes measured by indirect serological assays.

Antibody isotype	n	Percentage (%)
Total antibodies	5	2.7
IgA	1	0.5
IgG	22	11.7
IgM	24	12.8
IgA/IgM	2	1.1
IgM/IgG	112	59.6
IgA/IgG/IgM	2	1.1
N/R	20	10.6
Total	188	100

N/R: Not reported.

**Table 2.** Reported sensitivity of the serological assays (internal validation).

Sensitivity %	IgM	IgG	IgM + IgG
≤80%	6 (23.1%)	2 (7.7%)	1 (5.2%)
80% - 90%	15 (57.7%)	6 (23.1%)	3 (15.8%)
90% - 95%	3 (11.5%)	4 (15.4%)	9 (47.4%)
95% - 97.5%	1 (3.8%)	4 (15.4%)	3 (15.8%)
≥97.5%	1 (3.8%)	10 (38.5%)	3 (15.8%)
Total	26 (100%)	26 (100%)	19 (100%)

**Table 3.** Reported specificity of the serological assays (internal validation).

Specificity %	IgM	IgG	IgM + IgG
≤90%	0 (0%)	0 (0%)	0 (0%)
90% - 95%	1 (4%)	1 (4.2%)	3 (16.7%)
95% - 97.5%	7 (28%)	4 (16.7%)	7 (38.9%)
≥97.5%	17 (68%)	19 (79.2%)	8 (44.4%)
Total	25 (100%)	24 (100%)	18 (100%)

29 (16.1%) were in development and 1 (0.6%) was classified as IVD/RUO. Only 17 have received regulatory certification (of emergency use) issued by a health authority. The number of assays approved for use in the following countries is; Australia (TGA) 3, Brazil (ANVISA) 6, China (NMPA) 4, European Community (CE) 6, India (ICMR) 1, Singapore (HSA) 2 and USA (FDA) 1; some assays may be certified in more than one country. Additionally, the FDA has received documentation to request approval for 56 assays.

#### 3.2. Literature Review

We reviewed the literature published until April 5<sup>th</sup> 2020, where they used the

serological assays listed. We found 165 articles, 95 duplicates were removed which left 70 articles for screening and 15 were selected of which only 4 used the listed kits [9] [11] [13] [14]. PRISMA summary is shown in **Supplementary Figure S1**.

#### 4. Discussion

The current standard for COVID-19 diagnosis is the amplification of viral RNA by RT-PCR. However, this technique requires special equipment and trained individuals [7]. Also, detection of the virus is dependent on the sample origin and time of sampling [15] [16]. Detection of virus specific SARS-CoV-2 antibodies could help determine the exposure of a large population to the virus [5] [8] [9] [10]. In infected individuals, antibody detection by ELISA using nucleocapsid protein as antigen was identified at day 5 for IgM and at day 14 for IgG [17]. IgM antibodies are known to be produced early during a viral infection, followed by the presence of IgG antibodies, which have a longer lifespan and are responsible for the memory response [18]. Besides diagnosing the disease, it is important to determine the immune status of the individual against the SARS-CoV-2 using detection of specific antibodies. Now, there is an offer of more than 200 diagnostic assays that detect viral antigen or specific antibodies, all of them in different stages of validation.

Initial reports of the new SARS-CoV-2 causing acute respiratory distress syndrome came up in Wuhan, China. Since then, several assays have been developed in order to improve the diagnosis, most of them from China [4] [19]. As expected, most of the available assays detect antibodies using blood-derived samples. Although RT-PCR is considered the most sensitive detection method in respiratory fluid samples, it increases the risk of contamination of healthcare workers [20]. Blood-derived samples are easier to obtain, and compared to RT-PCR, serological assays are faster, require less training and less equipment, so they can be used in almost any setting [11]. The most common method behind is immunochromatography [21]. These assays have a long shelf-life, do not require refrigeration and visual results exclude the need for additional equipment compared with other methods such as ELISA [22]. Antigens used for detection are very important; the genome of SARS-CoV-2 codifies for several structural proteins, including the spike (S), membrane (M), envelope (E), and nucleocapsid (N) proteins [23]. The most common antigens used for indirect assays are the recombinant spike and nucleocapsid proteins [16] [17]. The S protein contains the domain that allows attachment to the human host cells [24], and the nucleocapsid protein is one of the major structural components involved in many processes of the virus, including viral replication, transcription, and assembly [18]. Interestingly, there is a 90.5% homology among nucleocapsid proteins of SARS-CoV-1 and SARS-CoV-2 [17]. Also SARS-CoV-2 showed a homology of about 85% with a coronavirus isolated from bats [4] [16].

Assay specificity and sensitivity are key for determining the role of these tests

in diagnosis and public health programs [25]. Unfortunately, only a minority of the assays present this information, maybe due to the short development time. However, most of them present a sensitivity and specificity over 90%, but with a low number of infected individuals. Nonetheless, some have sensibility as low as 45%. Patients with RT-PCR confirmed disease began developing specific viral antibodies around 7 days from disease onset [8] [9]. Some studies showed that IgM seroconversion occurs earlier in the course of illness, followed by IgG seroconversion [8] [9] [11], while others describe a simultaneous seroconversion [26]. All studies agree that the seroconversion rate for IgG and IgM increases with time [8] [9] [26]. The detection rate of molecular based methods decreased to as low as 45% in the first 2 weeks [9] [15] [27], while antibodies were detected in 100% of the patients after a month of disease onset [8] [9] [26]. The latter shows that the sensitivity of each immunoassay is variable depending on the time of onset, with more positive results given in a later time of the disease [17]. Most tests evaluate the presence of IgG and IgM simultaneously. The dual detection of IgG-IgM improves the sensitivity in comparison with individual IgG or IgM antibody assays [11], suggesting a possible improvement in infection detection. Additionally, the different samples that can be used for serological diagnosis offer more consistent results. No significant differences were found when using samples from whole blood, serum or plasma [11]. This is opposed to the great variability from samples used in viral RNA detection (blood, sputum, naso/oropharyngeal swabs, anal swabs and bronchoalveolar lavage) [8] [15] [27] [28]. In terms of efficiency, serological assays have a shorter procedure time compared to molecular diagnostic methods, which means greater testing capacity. RT-PCR and antibody assays have their own advantages, the combination of both can provide more accuracy to the initial diagnosis of SARS-CoV-2 infection [11] [20]. Apart from this, current label requirements showed that most of the offered immunoassays (50%) are intended for in-vitro diagnosis and this application represents the usefulness in a clinical environment. Limitations to our study include the lack of support by literature and/or certification by government regulation agencies of the majority of the tests that we found. It is worth mentioning that at the time of this review only few months had passed since the spread of the virus worldwide so, fewer studies and tests were available compared to a more advanced pandemic. Nevertheless, we consider the information found was the best obtainable evidence at the time of the review.

At this point of the pandemic, it would be difficult to suggest which assays are the best for clinical application. However, the information here presented sheds light into the large number of assays available, and the number increases day by day, so it has to be analyzed carefully. We suggest that researchers and policy-makers focus on the tests with the most information available, such as a rigorous internal validation data and well-defined TDS. More research is needed, especially studies that compare between different assays; which provide more accurate information than studies testing assays individually [29]. Yet, the initial data looks promising and immunoassays could help screen larger populations in less

time, increasing the detection rate and increasing the testing capacity; which is needed to decrease the SARS-CoV-2 spread. Recent studies show that convalescent patients have high levels of SARS-CoV-2 neutralizing antibodies (NAbs), which increased with patients' age [30]. Interestingly, transfusion of convalescent plasma obtained from COVID-19 cases, improved clinical outcomes of patients with severe disease [31]; thus, suggesting that the antibodies produced by COVID-19 patients during the infection have a posterior protective effect. Large serological studies to detect virus-specific antibodies will be needed to determine the infected asymptomatic population and also could help to suspend social isolation in seropositive individuals.

# **Acknowledgements**

The authors want to thank Manuel Franco MD, PhD from Pontificia Universidad Javeriana, Bogotá DC, Colombia for critical revision of the manuscript.

#### **Conflicts of Interest**

The authors declare no conflicts of interest regarding the publication of this paper.

#### References

- [1] Cheng, V.C.C., Lau, S.K.P., Woo, P.C.Y. and Kwok, Y.Y. (2007) Severe Acute Respiratory Syndrome Coronavirus as an Agent of Emerging and Reemerging Infection. *Clinical Microbiology Reviews*, 20, 660-694. https://doi.org/10.1128/CMR.00023-07
- [2] Tyrrell, D.A.J. and Bynoe, M.L. (1965) Cultivation of a Novel Type of Common-Cold Virus in Organ Cultures. *British Medical Journal*, 1, 1467-1470. https://doi.org/10.1136/bmj.1.5448.1467
- [3] Mäkelä, M.J., Puhakka, T., Ruuskanen, O., Leinonen, M., Saikku, P., Kimpimäki, M., et al. (1998) Viruses and Bacteria in the Etiology of the Common Cold. *Journal of Clinical Microbiology*, 36, 539-542. https://doi.org/10.1128/JCM.36.2.539-542.1998
- [4] Zhou, P., Yang, X.L., Wang, X.G., Hu, B., Zhang, L., Zhang, W., et al. (2020) A Pneumonia Outbreak Associated with a New Coronavirus of Probable Bat Origin. *Nature*, 579, 270-273. https://doi.org/10.1038/s41586-020-2012-7
- [5] Guan, W., Ni, Z., Hu, Y., Liang, W., Ou, C., He, J., et al. (2020) Clinical Characteristics of Coronavirus Disease 2019 in China. The New England Journal of Medicine, 382, 1708-1720. https://doi.org/10.1101/2020.02.06.20020974
- [6] Livingston, E. and Bucher, K. (2020) Coronavirus Disease 2019 (COVID-19) in Italy. *JAMA*, 323, 1335. https://doi.org/10.1001/jama.2020.4344
- [7] Corman, V.M., Landt, O., Kaiser, M., Molenkamp, R., Meijer, A., Chu, D.K., et al. (2020) Detection of 2019-nCoV by RT-PCR. Eurosurveillance, 25, 1. <a href="https://doi.org/10.2807/1560-7917.ES.2020.25.3.2000045">https://doi.org/10.2807/1560-7917.ES.2020.25.3.2000045</a>
- [8] Zhang, W., Du, R.H., Li, B., Zheng, X.S., Yang, X.L., Hu, B., et al. (2020) Molecular and Serological Investigation of 2019-nCoV Infected Patients: Implication of Multiple Shedding Routes. Emerging Microbes & Infections, 9, 386-389. https://doi.org/10.1080/22221751.2020.1729071

- [9] Zhao, J., Yuan, Q., Wang, H., Liu, W., Liao, X., Su, Y., et al. (2020) Antibody Responses to SARS-CoV-2 in Patients of Novel Coronavirus Disease 2019. Clinical Infectious Diseases, ciaa344.
- [10] Thevarajan, I., Nguyen, T.H.O., Koutsakos, M., Druce, J., Caly, L., Van de Sandt, C.E., et al. (2020) Breadth of Concomitant Immune Responses Prior to Patient Recovery: A Case Report of Non-Severe COVID-19. Nature Medicine, 26, 453-455. https://doi.org/10.1038/s41591-020-0819-2
- [11] Li, Z., Yi, Y., Luo, X., Xiong, N., Liu, Y., Li, S., *et al.* (2020) Development and Clinical Application of a Rapid IgM-IgG Combined Antibody Test for SARS-CoV-2 Infection Diagnosis. *Journal of Medical Virology*. <a href="https://doi.org/10.1002/jmv.25727">https://doi.org/10.1002/jmv.25727</a>
- [12] FIND Evaluation Update: SARS-CoV-2 Immunoassays FIND. https://www.finddx.org/covid-19/sarscov2-eval-immuno
- [13] Zeng, H., Xu, C., Fan, J., Tang, Y., Deng, Q., Zhang, W., et al. (2020) Antibodies in Infants Born to Mothers with COVID-19 Pneumonia. *JAMA*. https://doi.org/10.1001/jama.2020.4861
- [14] Lee, N.Y., Li, C.W., Tsai, H.P., Chen, P.L., Syue, L.S., Li, M.C., et al. (2020) A Case of COVID-19 and Pneumonia Returning from Macau in Taiwan: Clinical Course and Anti-SARS-CoV-2 IgG Dynamic. Journal of Microbiology, Immunology and Infection. https://doi.org/10.1016/j.jmii.2020.03.003
- [15] Wang, W., Xu, Y., Gao, R., Lu, R., Han, K., Wu, G., et al. (2020) Detection of SARS-CoV-2 in Different Types of Clinical Specimens. JAMA. https://doi.org/10.1001/jama.2020.3786
- [16] To, K.K.W., Tsang, O.T.Y., Leung, W.S., Tam, A.R., Wu, T.C., Lung, D.C., et al. (2020) Temporal Profiles of Viral Load in Posterior Oropharyngeal Saliva Samples and Serum Antibody Responses during Infection by SARS-CoV-2: An Observational Cohort Study. *The Lancet Infectious Diseases*, 20, 565-574. https://doi.org/10.1016/S1473-3099(20)30196-1
- [17] Guo, L., Ren, L., Yang, S., Xiao, M., Chang, D., Yang, F., *et al.* (2020) Profiling Early Humoral Response to Diagnose Novel Coronavirus Disease (COVID-19). *Clinical Infectious Diseases*.
- [18] Woo, P.C.Y., Lau, S.K.P., Wong, B.H.L., Chan, K.H., Chu, C.M., Tsoi, H.W., et al. (2004) Longitudinal Profile of Immunoglobulin G (IgG), IgM, and IgA Antibodies against the Severe Acute Respiratory Syndrome (SARS) Coronavirus Nucleocapsid Protein in Patients with Pneumonia Due to the SARS Coronavirus. Clinical and Diagnostic Laboratory Immunology, 11, 665-668. https://doi.org/10.1128/CDLI.11.4.665-668.2004
- [19] Zhu, N., Zhang, D., Wang, W., Li, X., Yang, B., Song, J., et al. (2020) A Novel Coronavirus from Patients with Pneumonia in China, 2019. The New England Journal of Medicine, 382, 727-733. <a href="https://doi.org/10.1056/NEJMoa2001017">https://doi.org/10.1056/NEJMoa2001017</a>
- [20] Loeffelholz, M.J. and Tangm, Y.W. (2020) Laboratory Diagnosis of Emerging Human Coronavirus Infections—The State of the Art. Emerging Microbes & Infections, 9, 747-756. https://doi.org/10.1080/22221751.2020.1745095
- [21] Anfossi, L., Di Nardo, F., Cavalera, S., Giovannoli, C. and Baggiani, C. (2018) Multiplex Lateral Flow Immunoassay: An Overview of Strategies towards High-Throughput Point-of-Need Testing. *Biosensors*, 9, E2. https://doi.org/10.20944/preprints201811.0405.v1
- [22] Koczula, K.M. and Gallotta, A. (2016) Lateral Flow Assays. *Essays in Biochemistry*, **60**, 111-120. https://doi.org/10.1042/EBC20150012
- [23] Lu, R., Zhao, X., Li, J., Niu, P., Yang, B., Wu, H., et al. (2020) Genomic Characteri-

- sation and Epidemiology of 2019 Novel Coronavirus: Implications for Virus Origins and Receptor Binding. *The Lancet*, **395**, 565-574. https://doi.org/10.1016/S0140-6736(20)30251-8
- [24] Wan, Y., Shangm, J., Grahamm, R., Baricm, R.S. and Li, F. (2020) Receptor Recognition by the Novel Coronavirus from Wuhan: An Analysis Based on Decade-Long Structural Studies of SARS Coronavirus. *Journal of Virology*, 94, 1-9. https://doi.org/10.1128/JVI.00127-20
- [25] Leeflang, M.M.G. (2014) Systematic Reviews and Meta-Analyses of Diagnostic Test Accuracy. Clinical Microbiology and Infection, 20, 105-113. https://doi.org/10.1111/1469-0691.12474
- [26] Hsueh, P.R., Huang, L.M., Chen, P.J., Kao, C.L. and Yang, P.C. (2004) Chronological Evolution of IgM, IgA, IgG and Neutralisation Antibodies after Infection with SARS-Associated Coronavirus. *Clinical Microbiology and Infection*, 10, 1062-1066. https://doi.org/10.1111/j.1469-0691.2004.01009.x
- [27] Yang, Y., Yang, M., Shen, C., Wang, F., Yuan, J., Li, J., et al. (2020) Evaluating the Accuracy of Different Respiratory Specimens in the Laboratory Diagnosis and Monitoring the Viral Shedding of 2019-nCoV Infections. <a href="https://doi.org/10.1101/2020.02.11.20021493">https://doi.org/10.1101/2020.02.11.20021493</a>
- [28] Liu, W., Liu, L., Kou, G., Zheng, Y., Ding, Y., Ni, W., et al. (2020) Evaluation of Nucleocapsid and Spike Protein-Based ELISAs for Detecting Antibodies against SARS-CoV-2. Journal of Clinical Microbiology. https://doi.org/10.1101/2020.03.16.20035014
- [29] Takwoingi, Y., Leeflang, M.M.G. and Deeks, J.J. (2013) Empirical Evidence of the Importance of Comparative Studies of Diagnostic Test Accuracy. *Annals of Internal Medicine*, 158, 544-554. https://doi.org/10.7326/0003-4819-158-7-201304020-00006
- [30] Wu, F., Wang, A., Liu, M., Wang, Q., Chen, J., Xia, S., *et al.* (2020) Neutralizing Antibody Responses to SARS-CoV-2 in a COVID-19 Recovered Patient Cohort and Their Implications. https://doi.org/10.1101/2020.03.30.20047365
- [31] Duan, K., Liu, B., Li, C., Zhang, H., Yu, T., Qu, J., et al. (2020) Effectiveness of Convalescent Plasma Therapy in Severe COVID-19 Patients. Proceedings of the National Academy of Sciences of the United States of America, 117, 9490-9496.

# **Supplementary**

**Supplementary Table S1.** Web pages used to search SARS-CoV-2 immunoassays.

Web page	Entity	Link	Number
FIND	FIND: Foundation for Innovative New Diagnostics. A global non-profit organization driving innovation in the development and delivery of diagnostics.	https://www.finddx.org/covid-19/pipeline/section=immunoassays#diag_tab	213
Modern Healthcare	An independent American publisher of national and regional healthcare news.	https://www.modernhealthcare.com/safe ty/coronavirus-test-tracker-commerciall y-available-covid-19-diagnostic-tests	99
ISP-Chile	Public Health Institute from the Health Ministry-Chile	https://www.minsal.cl/wp-content/uploads/2020/04/Lista-assay-Rapidos-Covid-al-03_04_2020.pdf	12
FDA	The Food and Drug Administration (FDA or USFDA) Federal agency of the United States	https://www.fda.gov/medical-devices/em.ergen- cy-situations-medical-devices/faqs-diagnostic-assaying-sars-cov-2	54

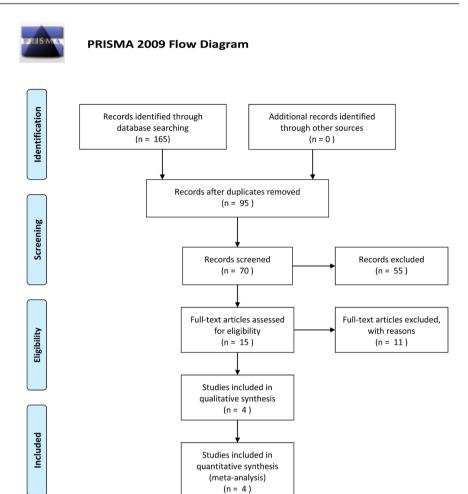
# **Supplementary Table S2.** Complete list of assays and variables included in the study.

Company	Name	Origin	700	Sanyle	Ygoe	Fixed antibody	Fixed artigen	Michael	Messured antibody	Procedure time	biterpretation	No. broked	let, validation	Sensitivity (CI 93%)	Specificity (C) 92%	Requirements	Certification	Publications	Militarya
Noos Bide/rology Ltd	The non-invasine INSGA lest of SAAS CUIV 2	China	NR	NR.	Direct	NR.	NA.	NA.	NA.	NR	MR	NR.	NR.	NR	NR.	Indexelopment	NR	NR	MgcTwnw abuse orBody cont Coalem asp
2 Acute Sie	Lifter Sensitive COS+ 15 Visual Antique Year Kit (CLESA)	USA	NR	MI	Direct	NT	NA.	DISA	NA NA	NR.	Amount	NR.	NR	NR	NR.	In-development	NE	NP	Mps (how abwistle conline-abwo-base) cold 197
3 Academia Sirica	Arti-SARS-CeV-2 nucleosapsid protein human VM/QG rapid dishellor NJ.	Takon	NR	NR	indrect	NX	NR	NR.	1954W	NR	NR.	NR.	NR.	NR	NR.	Indexisposes:	NR	NR	Mpc (howe sinitial education)
6 Academia Sirine	SARS CoV 2 Nucleocopid Proble Rupid Detection fit	Taluan	NE	MS.	Direct	N2	NA.	N/I	NA.	NR.	MI	NR.	NR.	NE	NR.	Indexelopment	ME	NR.	Migra Dimensi pinisa adia balan
s AGRO BIOTECH INC.	Fancia Yests Rapids en Cossets 2019+City lythyM	USA	700	Blood, senum or plasma	Indirect	NA.	NR	Innunchronalography	1,01,01	10 min	Vauditionis	infected 20, Healthy 53, Total 79	Yes	1g0 100% tgW 85%	Power Prome	NO	ANVSABuul	NR	Mps Deve assayyeria con isostanti Acisti 200 dani VAC (80%207 adri). Zilmesi pdi
Acadistratics Ltd	Accurate COVID-19 I (CAME Report THE CHAME)	China	NR	Most, senior or power	Indirect	NX.	NR.	Innunchanagapty	your	10 min	Ministerds	Infected 38, Healthy 143, Total 181	Yes	yo manaya men	fic as ser fin as ser	NO	NR	NR	Mpc/www.acoutertech.com/
7 AVO Biologic Inc.	COVID-19 (gG/lgfir Report Transporteded gold- based)	China	701	Blod, senan or plasma	Indirect	NX.	N.R.	Innunotheralogisphy	iganya.	10 - 15 min	Vausitionis	NR.	Yes	NE	5.97	In development	NE	NR	Mp/lume alvikidash on Uphada 200000/3407600 pdf
8 Arts Scientific Designs Inc.	DrivenFlow COVID-19	USA	NR	NR.	Direct	NR	NA.	NR.	NA	NR	NR	NR	NR	NR	NR.	NO	Nulfee FDA	NR	Mpc Jeves a faccientific comi
9 Anothled Biotednology Co., Ltd.	COVID-13/influenza A virusfinfluenza B virus tylin contro test NE (Fore Easth Nano Fluorescence temperatricipaging)	China	NE	NR.	Indirect	NR.	NR	Innunctionalography	NA.	NR	VisualEands	NR.	NR	NR	NR	NO	NR	NR	Mp/feeds pagine and
9 Amonthed Blokedmobyy Co., Ltd	COVID-181-fluenza A virustrituenza 8 virus test ss glaro Earth Name Russocience temunochromisiopoglejo	China	NR	NR.	NR	NR.	NR	innunotronalography	NR	NR	Visualitands	NR.	NR.	NR	NR.	1/0	NE	NR	Mg/Sudu,Jacjon en'
Anorthed Bosednoings Co., Ltd.	COVID-19 Artigon Test Kit (Rare Earth Name Fluorescence Innounce/Innounce(graphy)	China	NR	NR.	Disc	NT	NA.	innuecononatography	NA NA	NR	Vausitiands	NR	sec.	NR	NR.	NO	NR	NR	Mp/Ison jusper or i
2 Anothled Biolednology Co., UK	COVID-19 IgANgG led kit (New Earth Nano Ruossoance Innunchronatography)	China	NR	NR.	Indirect	NX.	NR.	Innuncinanalogophy	your	NR	Vauditients	NR.	NR.	NR	NR.	ND	NR	NR	MpClassis judgme and
3 Američed Biotechnology Co., Ltd.	COVID-19 IgANING tree list (Collected Code)	China	NR	Dood, serum or plasma	indrect	NA.	NR	innunctionstopsphy	li Colgar	15 min	VirusiEends	infected 102. Healthy 125, Total 207	Yes	196 84-31% 198178-43% Tool 896-40M; 13.13%	90 30 2% QM 98 4%	100	NE	NR.	Mgs Jawa could Chesthox comissions, report pdf
H. Arthui Deep Blue Medical Technology Co., Ltd.	Colloide goid sale; for SARS-Cuit-2 ly S & IgAn	China	700	Blood, senum or plasma	Indirect	NX.	NR.	Innunctionatography	1,01,01	15 min	VisualBands	NR.	NR	NR	NR.	RUO	NR	NR	Mgc/lg a44 com*226/202609/3/COVID_19_TEST_Introduction pdf
s Agamer Geop Ltd	AQu SARS Co I/2 Vine Antique Replic Point of Core Test	UK	NR	NR.	Drest	NX.	NA.	NA.	NA.	NR	NR	NA.	w	NR	NN.	In development	NR	NR	Mije Dwwe aptonegroup as all?
S Assure Tech. (Hengahou) Co., Ltd.	COHO-19 Artigen Rapid Test Device	China	NR	Nassivephoryrgaal swab, bronchoolwoler lavage or spallurs	Direct	NR.	NA.	innunotranslogayky	NA NA	15 min	VauelEende	NR.	88	NR	NR.	In development	NE	N/R	Mp/livne daraspert.com/nevs_debals_45/timl
F Asser Tech (Herginse) Co., Ltd	COVID-19 IgGrigHI Ropin Year Device	China	NR	Blood, senum or plasma	indrect	NX.	NR	Innunchronatography	1954ptr	15 min	Vauciflands	NR	NR	NR	NR.	NO	Number FDA	NR	Mp/luvu-danogort.com/new_ostals_45/honi
S Allomater Ltd	Cuantitative beneuro-binetic accept for Corld 19 typ HgMHgA for a multiantigen panel with CRIP (automated)	UK	NR	NR.	Indirect	NX	NR	NA.	1999pRNyA	NR.	NN.	NR.	NN.	Net	NR.	In development	NE	NM.	Mps (how altonates con)
9 Autobio Diagnossica	Art SARS Cov 2 Right Text	China	705	Blod senan or plasma	Indirect	NX	NR.	Innunohonalography	lyS/lyW	15 min	Houldents	NR.	Yes	96105 (911675	No 802 - PA 802	No	NumFec FDA	NR	Mp/funiv autotic com orien'
9 Avegilio-Tech Co., Ltd	Novel Construitus (2019 + Con/Antitoriy NgC1gM Assay Kit (Collected Cost)	China	NR	Short, sense or plasma	indred	NX	NR	Innuestranatography	li contra	15 min	VaudSands	NR	NN.	NR.	NR.	RUO	NR	NR	Mp/ferry accepts contributed asports (50)
Seja Phytohem	Balyo Royal COVID-19 lgNVgC box No.	Theliand	NR	Nool, seven or plasma	Indirect	NX	NR	Immunolinenskopapky	No.	NR	VezelBenis	NR.	NR.	NR	NR.	Indexignant	NR	NR	Mga (kalpa) yhaham siraka sordiaka
2 Beijing Abook Biology Co., List	COVID-19 Antibody (rgGright) fleet No (Cultural Crief Immunications (Inglity)	China	NR	Blood, senum or plasma	indrect	NR.	NR	innunctionstography	lg Ciright	NR	VisualEands	NR.	MR.	NR	NR.	100	NR	NR	Mgs (Iwws states biology com)
S Belling Roose Blokey Co., Lici	COVID-19 I <sub>S</sub> M AVBANY Two RE(ELER)	Chira	NR	38	Indirect	N8	NR.	EUSA	un.	NR.	Asserted	NR.	58	NR.	NR.	1/0	NR	NR	Mgs: Zewe at a cell biology storic
N Belling Roose Biology Co., List	COVID-19 (pG Anthony Test RR (BUBA)	China	NR	we	indred	NR.	AR	BUSA	les.	NA.	Automobile	NR.	NR.	NR	NR.	10	NE	NR	Magne (Innum phone Minings pom)
5 Beijing Aboox Biology Co., Lid	COVID-19 Visil-Arrigen Text Rt (CL/SA)	China	NR	16	Direct	NR.	NA.	DUSA	NA NA	NR.	Alteroled	N/R	NR.	NR	NR.	1/0	NR	NR	Mgs (Investable Biology com)
S Selling Roose Stategy Co., Ltd	COMD-19 Visit-Arrigan Two KN (Curiotist Guid Incurrect/synthygraphy	China	NR	NR.	Direct	**	NA.	Innunalment lightly	NA.	NR	VisualBands	NR	NR.	NR	NR.	1/0	NR	NR	Mps://www.stoon-likingy.com/
5 Sejing Decombio Biotechnology	Novel Coronsvirus IgN/IgG Contre Repid Tool Cossette	China	NE	MR.	indract	N/R	NE	N/L	(g) Septem	NR.	NR.	NI.	SN	. Nett	NR.	NE	Notified FDA	NR	Migra (Innure decombin-usa zon)
9 Beijing Diagnost Biotechnologies Co., Ltd	2010 - Cutright Antibody Entermination Nil	China	NR	Block senum or pisama	indiscr	NX	NR	innunohonalogophy	lgir	15 min	VisualBands	NR.	NR	NR	NR	100	Notified FDA	NR	Mp/fur diagnost condined_view.cupx??poid=79840=1979740=13.15.3
9 Bejing Diagnost Biotechnologies Co., List	2010 r CeV lgC Archedy Celemon atom Kill	China	NE	Diod, sesun or plasma	indirect	NX.	NR	Innunationalignality	No.	15 min	Vis-officeds	NIE	NN.	NA	N/K	NO	NewFeet FDA	NH	MpcTor dagreel.con/prot_view.orgic??;geld=78884-7888760-03.75.3
0 Selling Holgen Stolech Co., Ltd	Coronavirus diseases (COVID-19) tytologic Antibody Royal Year (Covidar GAI)	China	NR	M	Indirect	NR.	NR	Immunotranskapajky	NOW	NR.	Mountbook	NR.	NR.	NR	NR.	10	NE	NR.	MgcConnectedges com orderdprotedus aspects (dr. 1734 Salvi-1827
the jing Kewel Clinical Chagnonic Reagant Inc.	Kewal COVO 19 Artiger Rapid Test Kt. (Fluoresenes)	China	NR	MR.	Diez	NR	NA.	Fluorecence	NA .	NR	MR	NR	MR	NR	NR	NO	NR	NR	Mp/fer heuridisgroutic.com/
2 Belling Kewel Clinical Diagnostic Reagent Inc.	Kewel COVO-19 Antigen Report Test/All (Collected Scikl)	China	NR	NR.	Died	NR.	NA.	Immuno/monalogophy	NA	NR	Modifieds	NR.	NR.	NR	NR.	NP	NR	NR	Mp/ler hevetilag-cell; sser/

33 Beijing Kevel Clinical Clagnostic Respect Inc.	Kews COVID-1919G (LISA Test Kil	Own	NR	NR	Indeed	NR	NA.	EUSA	No.	NR	Automated	NR	NR	MIX	NA.	NO	NR	NR	http://en.kewnides/nodic.com/
54 Beijing Kewel Clinical Diagnostic Bringwell Inc.	Names COVID-15 IgN TLISA Tear Kit	Own	N.P.	NR.	Indeed	NR	NR.	EUSA	iju.	NR	Automated	NR	NR.	MR	NA.	NO	NR	NE	ntg /fen keweidagnedic comi
35 Beijing Keuni Clinical Clagnostic Reagant Inc.	Kewal COVID 15 lgG/gM Russessons Repid	Owa	AR	NR.	Indeed	NR	NA.	Florespece	устун	NR	NR.	NR	N/K	NN.	NA.	NO	NR.	NA	Mg Jan sawriday rodic con i
36 Beijing Kewel Chical Diagnosis: Rosgart Inc.		Ories	NR.	NR.	Indeed	NR.	MI	innunorinmetromphy	<b>Б</b> СТВИ	NE	Vauditente	NS	89	NO.	NR.	NO.	Notified FDA	Nett	http://en.inwridecyrealic.com/
	Communities disease (CCV/D-18) Total Antibody Report Total (Collected Colle)	China	NR.	Stood, serum or planera	Indext	NA.	NA.	Innueschanelography	зустум	10.min	Maultheris	NR	N/R	NR	N/R	NO	Nation FOA.	NR	http://www.editric.com/lowin
36 Beijing Savan: Biolechnology Co., LM	SARS-Cor-2 Artigor Fluoreceance Rapid Detection RIX	China	N/R	NR.	Elect	NR	NA.	Floresonce	NA.	NR	NR	NR	NR	MR	NA.	ND	NR	NR	http://www.husiietisk.com/
39 Being Tig Sun	Tigrae COVID 18 Contin IgM/gG Repli Test (Litteral Flow Method)	Ove	NR	NR.	Indeed	NA.	NR.	Innuestrandagaphy	мусоум	NR	Vaulibrie	NR	NR	NR	NR.	NR	NR	NR	Mg/Inma Sysue comient
4) Boing Watta Biological Phomocy Emergeo	Warris GARS-Colf-2 IgN ELRIA	Orien	TOS	Serum or pierme	Indeed	NA.	Encontrinent errigen	DUSA	lan.	90 min	Automated	infected 310, Healthy 333, Total 643	Yes	86.65		NO	NE	MI	htps://www.nordichicalm.com/dollers/556-WG-1196-96_CK.ET-L.pdf
45 Being Yuman Balograd Phomosy Encyree	Warrist SAFG-Cold & As Rapid Test	Civa	TOS	Book, serum or plasma	Indeed	NA.	NA.	Innechinelypity	Tital	These	Vessettlands	Intested 137, Feedby 200, 1664 365	Tes	90.15	10.2%	NO	NM	NM	Trigo Tearne scriptulariste com/2018es/208403-2010-00, CE 17U-p0
42 Being Nates Schopal Phomog Craspins		Orina	TOS	Serum or plasma	Indeed	NA.	Facontrinent arrigen	EUSA	Total	90 min	Automated	Infected 310, Healthy 333, Total 643	Yes	9435	,	80	NE	NVBody responses to SURS COV2 in patients of next commodities discours 50% Zheo J, Yean C, Wang H, Liu W, Lieo K, Su Y, Wang X, Yean J, E T, Li J, Gao S, Hong C, Wang F, Liu Y, Yang Z, He Q, LIZ, Yeak J, Wang F, Liu Y, Su	https://www.norticbicoles.com/dollers/256-VKS-1096-VKS_CK_FU.pdf
-																			
43 Benni Group	SARS-COV-2 IgGRyR Antibody Detection RX	Ove	TOS	Bood, serum or plasma	Indeed	NA	NA.	Innunchonskipsphy	Mode	10 min	Vauelibros	NR	NR	WR	NR.	ND	Notified FEA. COE	NIFE	https://www.betringroup.com/up-serrinds.priseds/2020/01/SARS-CoV-2 Antibiody-Defection-Hill-User-Guide pdf
44 BIOHIT HealthCare (Frield Co., Ltd.	SARS-CoV-2 IgMIgS aetbody test kit	Ores	N/R	NR.	Indeed	NA	NR.	MI	NOVOM	15-min.	NR.	NR	MR	NR	NR.	MR	NR.	NE	http://www.bloht.cn/index_en.args
45 Barocu LM	2015 - CuV I (Shight Artifloody Oxfordion Kill	Sirpapore	N/K	Blood, serum or plasma	Indexi	NA	NK.	Innectional graphy	North	10 min	Visual/Wards	NR	Yes	95.96%	WAR	ND	Nelfor FDA 146A Singapore	NR	High Florer hold in com27ft in size agaign artifoly-blaction kill
45 BOMANNA SA	2016-eOcV IgSRgM Rapid Text Cassetts	Paland	TOS	Blood, serum or plasma	Indeed	NA.	NR.	Innunothonalography	усци	10 min	MouelBends	Infected 20, Fleatiny 58, Total 79	Yes	igo 100% (MPL - 100%) (MPROSE (12 1% - 90.3%)	(Az asur (as 42 - 2024) (Az asur (as 42 - 2024)	NO	NE	NE	https://www.inbothema.se/up-contests.picads/2014/1/21-300-8/25- CMO-RGCHT pdf
17 Butteconics, Inc.	COVID-18 IgAngO Dual Anstonly Report free	USA	109	Blood, serum or plasme	Indirect	NA.	Percentinant spike protein	Innerolated sparty	North	N-Wair	Veselibrois	Infected 287, Healthy 129, Total 525	Yes	IgG 20 K2N IgN 82 K1% TakinggG+igN1 88 SIS	Igo se assigenor, ess Take (got-spin) 90.3%	NO	Number FOA	Development and Clinical Aplication of a Regict I <sub>2</sub> M- giG combined articledy sea for SARIS Cond Inflation diagnosis. Lie et 2002 Journal of medical shology as in 1980 (ms. 1979)	Tops:Terms homedonics com/youtubalinfections charges (unid 19-7
45 BuSerse Disposition ApS	Westuck COVE (gAngliftyS.Total); As	Desmark	NR.	NR.	Indeed	NA.	NR.	NA.	Total	10 min	Automated	NR	N/R	NR.	NR.	NR	NE	46.10.1000(mx.25727.	https://bluecroe.disgressics.com/co.id/10-pandemic-whiti-is-going-to- skip-id/
19 Budded-Mec. Inc.	Surveying COVID 19 Ab, systily G	South Konsa	N#	Blood, securi-or plasma	Indext	NA	NR.	THE (Time resolved Sucrescence) immunoessay	усун	NR	NR .	NR	NR.	NR	NR.	NR	18	NR	http://www.boditech.co.k/deng/
50 Bodinsh Med, Inc.	Ichrona COVIC-13, visi antigen	South Korea	NR	NR.	Clean	NR	NA.	TRF (films madved fluorescence) immunossaly	NA.	NR	NR	NR	NR	MR	NR	NR	NR	NE	http://www.beditech.co.kriengi
51 Buddeck-Med, Inc.	AFIKS COVID-19 Ab, \UNitigG (automobil)	South Korea	TOS	Bood, securi or plasma	Indexed	NA.	NA.	THE (Time resolved fluorescence) incrurrossay	North	10 min	Automated	Infested 12, Healthy 145, Total 102	Yes		0,807	NO	NR.	nerc	htp://www.bodiech.co.k/eng.boardhesesToland_view.arg/hum-30139
52 Bodisch Med, Inc.	AFIRS COVID-19, Viral Artigen (automated)	South Korea	NR.	NR.	Direct	NR	NA	TRF (Filme resolved fluorescence) innturnossay	NA.	NR	NR	NR	88	MR	NA.	NR	MI	NR	http://emw.bodisch.co.k/eng/
53 Bright Line Research	Plane 19 Somen Communities (SWISS-Crivia) (ySright Repir Text.	USA	NR.	NR.	Indeed	NR	NR.	NR.	North	NR	NR NR	NR	NR	NR.	NA.	NR.	NR.	NR	15g Jenna Jelg Cinerosean Local collection (see Med
																	-		
Si ETNOSec	Repli Response 00V/D-19 IgSright Test Cassatte	Canada	NR.	Blood, serum or pleame	Indext	NA.	NR.	Innanchonalography	NOTH	15-min	Veselberts	NR	NR.	NR.	NR.	10	Notified FDA	NR	https://www.birx.com/Product?id-9006
55 Contect Diagnostics Ple Ltd	Cantelli COVO 19 Rajid Yesi Ki	Singapore	NR.	Blood, earlier or placera	Indexed	NA.	NR.	Innechonologically	уступ	10 min	VesetBenis	Irisaled NR Healthy 120	Yes	syd son syn son.	ifa aaz ifa aaz	ND	NR	NR	http://conidit.bioscom/control/Controllings_Braches_Ac.pdf
56 Celler Inc.	Cellex qSARS-CoV-2 igSigM Cossette Rapid Text	USA	TOS	Stood, secure or plasma	Indext	NA.	Excendinant origin	Imminorhonalogophy	ысци	15 - 20 min	YavelBands	Infected 128, Healthy 250, Total 375	Yes	(gG 00 19% IgN 80-83% Told (gG-1gM) 93-75% (86.2%, 96.8%)	ING STAIL WESEAN THE (US-NW) SEN (92.6%, STAIL)	NO	FGA / TGA Australia	NR	https://www.lds.gov/media/109029/doverload
57 Changelia Sinocere Inc.	SARS-CVV-2 Artifoldy Yeal Strip	Oire	NR.	NR.	Indirect	NR	NA.	Innered named spraying	NR	NR	Vauditienis	NR	NR	NR	NR.	NR	NR	NR	http://www.ainocare.com/web/about/index_en
58 Chembio Diagnoscio Systems	COP COVID-19 MATUS System	USA	NR.	NR.	Indexed	NR	NA.	NA.	цаци	NR	NR.	NR	NR.	NR.	NR.	NR	Natified FDA / ADV/SA Brasil	NR	https://chembiodiagnosticainc.gov.veb.com/nava-misssasineva-nelssas Juliahu/harribkaannounas-laansh-lipp-sinkhith-sendugisahpinkaan
59 Cure Technology Co. Ltd.	соио гандагуа на тъп	Oire	NR.	NR.	Indexi	NR	NA.	NR.	услум	NR	NR	NR	NR.	NR.	NA.	NR	Nation FDA	NAT	Ng Jimma samirada comi
60 Coris BluCarcept	COVID-19 Respi Selp	Belgium	NR.	Nasphayqualseab	Deat	NR	NA .	Immunochomulography	NA.	15 min	VauelBands	99 132	Yes	60% (40.7 to 75.8%) IC+90% 60.3% (48.1 to 71.3%) IC+90%	100% (93.4 - 100%) 96.5% (98.7 - 99.9%)	ND	NR	NR	https://www.contribio.com/Products/Human-Field/Covid-HSphpii/
61 Creative Diagnostics	SARS-CUV-2 I/G ELISA KIE	USA	TOS	Seuro systems	Indirect	NA.	Wickening lysate artigen	EUSA	No.	72 - 90 min	Automated	Infected 96, Preatily 35, Tural 46	Yes		1	RUO	NR	NR.	Top Plang's creative diagnosis as seed of DBAS, 218 pdf
62 Crustive Diagnostics	SARS-CON 2 Yolid Arribody ELISA Kit	USA	TOS	Serum or places	Indexed	NA	Recondinant origen	EUSA	Total	71 - 90 min	Automated	Infected 310, Healthy 353, Total 613	Yes	9455	1	RUO	NR	NR	http://mg2.cnative-dagronics.com/pd706345i324.pdf
63 Crealive Diagnostics	SARS-Cov-2 IgH ELISA KII	USA	TOS	Seun orphore	Indext	NA.	NR.	EUBA	w	62 - 90 min	Automated	Infected 16. Healthy 30, Total 46	Yes	1	1	RUO	NR	NR	Top Fire 2 creative diagnosis is sanity (TDENS), 200 p.(f
64 Crasilvo Diagnostica	SARS-CoV-2 Arrigon EL/SA-Nit	VSA	TOS	Seum or plasma	Direct	NR.	NA.	EUSA	NA.	120 - 140 min	Automated	NR	NR.	NR.	NA.	nuo .	NR.	NR	ring /ling2.creative-diagnostics.com/pdf/060A2820.pdf
65 CEX Bloomb, Inc.	Online COVID-19 IgGINGS Rupid Trus	USA	NR.	Stool, serum or plasma	Indexed	NA.	NA.	Innectional graphy	услум	10.40	Yearthros	NR	NR	96.95	98.6%	ND	Nelfed FOA / TOA Autobie	NIFE	https://drive.google.com/fileid/1_2HtyH68.DH2-UpodeCH2-web30cgHe
																	ARTSIN		
05 EAVIT Evagnorius	CART COVID-16 (manual)	Forkgol	NR.	NR	NR.	NR	NA.	NK.	MR.	NR	NR	NR	NR	NR	NR	NR	NR	NET	Migra/Ferrier Bart-Congradation comit
66 EART Depositor  67 Everyme Laboratories	CANTI COVID-18 (HIBMUNE)  Claryma CX-LITE SANS-CoV-2-lyG, IgM CLIA Kiles	Forkgel	NR NR	N/R Soun or pleane	NR Indeed	NR NA	NR NR	SUR Chemiskuminescene	NK NGC(M	NR Main	N/III	NR NR	N/R Yes	NA NEW YORK STATES	igo so an igu ar an.	NR ND	NH New FOA	1691 1691	http://www.decryma.com/de-like-sams-caw-2
57 Elasyme Laboratories	Clauryma CX-LITE SAVIS-Cov-2-tyG, light CLIA Niles	USA	NR.	Sonor or pieces	indeed	NA	NA.	Cherrolumousonee	арстри	Mass	Automated	NR	Yes	ganza ganza	19G 50 355 1994 57 595	NO	Noticed FOA.	NATE	http://www.docsyma.com/do-like-sums-cou-2
67 Everyme Laboratories 68 EVES international, Inc.	Diseyme DZ-LITE SAMS-CoV-2-IgG, IgM CLIA Kibs COVID-19 IgM, EIA-6547	USA	NR NR	South or places	Indext	NA NA	NA NA	Chamberinescens EUSA	Berlin.	Mass. Mass.	Automated	NR NR	Yes	genze gwaze	No. or see show as our	NO HUO	Notice FOA	NATE	The Prime despite condition on sev 2  The Prime despite condition on sev 3  The Prime despite condition on s
67 Congress annotation 68 CHG International, Inc. 60 CHG International, Inc.	Changes COLUTE SAMS GAV2 byG, byM COLA New COMO 10 byG, EU-AGN2 COMO 10 byG, EU-AGN2 2010 ICCOM yG/byG Feyd Twe	USA Gamany Germany	NR NR	Serum or placena Serum Serum	Indeed Indeed	NA NA	NR NR	Chemisteriorea	igotigas igas	34 min 80 min 80 min	Automated Automated	N/R N/R N/R	Yes N/C	196 91 25 194 70 25 1949 1949	igo so se iga er en. Nati	NO RUO	Notice FDA.	1661 1661 1661	TOT, THE PART AND
Dispersions Dispersion inc.	CONSTRUCTION OF THE CONTROL OF THE C	Germany Germany China Grice	AR AR AR	Servin or places Servin Servin Servin Servin Servin Servin or places	Indeed Indeed Indeed Indeed Indeed	NIA NIA NIA NIA	NATE NATE NATE NATE NATE	Grenduminescores  EUSA  EUSA  Innurationalography  Innurationalography	Model Me Me Me	34 min 80 min 90 min 100 min 100 min	Automated Automated Automated Valuationated Valuationates	NR NR NR NR NR	Yes Are Are Are Are Are	Ness Ness Ness Ness Ness	igis no see igus se nos.  Note:  Note	NO RUO NO NO	Nesfeet FDA.  NATI  NATI  NASI'N. Crossa  Flesfied FDA.	14/0 16/0 14/0 14/0 14/0	Top Free dissipate annich die von des 2   Participate ge- generatie gestelle gestell
Displace Constraints Displace	Description COL LETT SLARES COLD IT SIGN SPECIAL NO.  COMES THE SPECIAL COLD IT SIGN SPECIAL NO.  COMMISSION SPECIAL SPECIAL COLD IT SIGN SPECIAL COLD ITS SPECIAL	USA Gennery Gennery Otea Otea	AR AR AR TOO	South or plants Servin Servin Servin South, servin or passine NVII South, servin or passine	Indeed Indeed Indeed Indeed Indeed Indeed	NIA. NIA. NIA. NIA. NIA.	NATE NATE NATE NATE NATE NATE NATE	Constitutions are a second of the second of	Model Model Model Model Model	34 min 30 min 30 min 30 min 10 min 10 min 10 min 10 min 10 min	Automated Automated Automated Visual Bands Visual Bands Visual Bands	NR N	Yes NYC	95 91 75 194 92 75 NH N	INTERPORTURE	NO N	PARTIES FOR.  NAT.  NATE  NATE  NATIONAL  FARMES FOR.  ANNUAL SHARES	140 140 140 140 140	*** The design and the section of th
Dispersions Dispersion inc.	CONSTRUCTION OF THE CONTROL OF THE C	Germany Germany China Grice	AR AR AR	Servin or places Servin Servin Servin Servin Servin Servin or places	Indeed Indeed Indeed Indeed Indeed	NIA NIA NIA NIA	NATE NATE NATE NATE NATE	Grenduminescores  EUSA  EUSA  Innurationalography  Innurationalography	Model Me Me Me	34 min 80 min 90 min 100 min 100 min	Automated Automated Automated Valuationated Valuationates	NR NR NR NR NR	Yes Are Are Are Are Are	Ness Ness Ness Ness Ness	igis no see igus se nos.  Note:  Note	NO RUO NO NO	Nesfeet FDA.  NATI  NATI  NASI'N. Crossa  Flesfied FDA.	190 100 100 100 100 100 100 100 100 100	The control of the co
Displace Constraints Displace	Description COL LETT SLARES COLD IT SIGN SPECIAL NO.  COMES THE SPECIAL COLD IT SIGN SPECIAL NO.  COMMISSION SPECIAL SPECIAL COLD IT SIGN SPECIAL COLD ITS SPECIAL	USA Gennery Gennery Otea Otea	AR AR AR TOO	South or plants Servin Servin Servin South, servin or passine NVII South, servin or passine	Indeed Indeed Indeed Indeed Indeed Indeed	NIA. NIA. NIA. NIA. NIA.	NATE NATE NATE NATE NATE NATE NATE	Constitutions are a second of the second of	Model Model Model Model Model	34 min 30 min 30 min 30 min 10 min 10 min 10 min 10 min 10 min	Automated Automated Automated Visual Bands Visual Bands Visual Bands	NR N	Yes NYC	95 91 75 194 92 75 NH N	INTERPORTURE	NO N	PARTIES FOR.  NAT.  NATE  NATE  NATIONAL  FARMES FOR.  ANNUAL SHARES	190 190 190 190 190 190 190 190 190 190	*** The design and the section of th
Displace Committee  State Sta	Thoughout CE LITE ALARS COLD BY SUSSIBLE CLARKS CONDO THE PROCESSOR CONDO THE PROCESSO	USA Genery Genery Otea Otea Enod	AR AR TOG	Servin Servin Servin Servin Servin Servin Servin Servin Servin or plasma NUR Slood, servin or plasma	Indeed Indeed Indeed Indeed Indeed Indeed	NIA NIA NIA NIA NIA NIA NIA NIA NIA	NATE NATE NATE NATE NATE NATE NATE	Consideration Co	Igolgal IgA IgO IgO IgOlgal IgOlgal IgOlgal IgOlgal IgOlgal	\$6 min   \$6	Automated  Automated  Automated  Automated  Mauel Stands  Mauel Stands  Mauel Stands  Mauel Stands	NR N	Ves AVC NVR AVC AVC AVC AVC Ves	96 31 75 994 33 76 344 344 344 344 344 344 344	INFO DE SAN	NO RUO RUO NO	Newfort PDA  NET  NET  NET  NET  AND/OLD/Newf	190 190 190 190 190 190 190 190 190 190	The control of the co
Magnetic Accession     Magnetic Accession     Machine Translation     Mac	Though DO LITE AURE CAN'T GO, MY COM NO.  COMO 114gh COM AND COM TO THE COM	USA Genery Connery China China Grand Enail Enail	A/R A/R A/R A/R T09 T05	Sonutri or passina  Sanutri  Sanutri  Sonutri  Sonutri  Sonutri  Sonutri or passina  Sonutri or passina  Sonutri are passina  Sonutri are passina  Sonutri are passina	Indeed Indeed Indeed Indeed Indeed Indeed Indeed Indeed Indeed	NIA NIA NIA NIA NIA NIA NIA NIA	NATE NATE NATE NATE NATE NATE NATE	Combined to the combined to th	Secretary	34 mm.  80 mm.  80 mm.  100 mm.	Automated Automated Automated Visual States Visual States Visual States Visual States	500 500 500 500 500 500 500 500 500 500	706 AVC	Section for some	July State Pay S	NO REO NO	NewFee FDA.  NEE  NEE  NEE  NEE  NEE  NEE  NEE  N	1941 1941 1941 1941 1941 1941	The control of the co
of Payment Assessment  if the State Control on the	Mean and State Colon State Sta	USA Genery Comeny Othe Enal Enal UK USA	A/R A/R A/R A/R A/R 709 705 706	Soun or plants Seven Seven Stock security games NVI Stock security games NVI Stock security games Stock security games Stock security games Stock security games Stock	Indeed	NIA NIA NIA NIA NIA NIA NIA NIA	NAT	Control construction of the control	ароция  ди  про  ароция	30-mm Minor	Automated  Automated  Automated  Unsufficients  Visual Sorte  Visual Sorte  Automated	MATERIA SERVICE SERVIC	Yes AND	INTERPORT OF THE PART OF THE P	yes to the gent of the Mark Mark Mark Mark Mark Mark Mark Mark	NO ISSO  NO N	Notified PDA.  NAME  NAME NAME OF THE NAME	10 10 10 10 10 10 10 10 10 10 10 10 10 1	The second secon
of Popular Landson  of District Security Inc.  o	Baseline St. (1971 - 2004 - 20	USA Genery Connery Otre Otre Enal Enal Enal USA USA	A/R A/R A/R A/R A/R 100 100 100 100 100 100 100	Sound plants Sound Sound Sound Sound Sound Speak NOT Sound Speak Sound Sound Speak Sound Sound Speak Sound Sound Sound Sound Sound Sound	Indeed	NIA	NAT  NAT  NAT  NAT  NAT  NAT  NAT  NAT	Conditions of the Condition of the Condi	epolypei light	\$2.00 mm \$2.	Averaged  Averaged  Averaged  Vesselberts  Vesselberts  Vesselberts  Averaged  Averaged  Averaged  Averaged	MASS MASS MASS MASS MASS MASS MASS MASS	Yes   NAC   Yes   Yes   Yes   Yes   Yes   Yes   Yes   Yes   NAC	90 1175 90 117	AND THE SAME OF T	NO N	NAME OF TOTAL  NAME OF TOTAL  NAME OF TOTAL  AND COMMON OF TOTAL  AND CO	*** *** *** *** *** *** *** *** *** **	The second secon
of Popular Laminos  of State Telephonic St.	Baseline St. (1971 - 1974 - 19	USA Genery Genery Otto Otto Genery USA USA USA	AR AR AR AR 100 100 100 100 100 100 100 100 100 10	Sound plants Sound	Indeed	NIA.	NAT  NAT  NAT  NAT  NAT  NAT  NAT  NAT	Conductorise  (CIA)	Secretary	\$2.00 mm \$2.	Annual Annual Annual Valentinia Annual Valentinia Annual A	MATERIA STATE OF THE STATE OF T	700   NOTE   NOTE   NOTE   NOTE   NOTE   NOTE   NOTE   NOTE   Yes   Yes   Yes   NOTE		90 10 75 90 10 10 10 10 10 10 10 10 10 10 10 10 10	740 7600 7600 7600 7600 7600 7600 7600 7	NAME OF TOTAL  NAME OF TOTAL  NAME OF TOTAL  NAME OF TOTAL  ANOVIGE Should  NAME OF TOTAL  ANOVIGE Should  NAME OF TOTAL  NAME	10 10 10 10 10 10 10 10 10 10 10 10 10 1	The second secon
of Popular Laminosis  of State Temporaria State  of State State State State State  of State	Bauter Stort Good Good (1), 491 SA AND AND AND AND AND AND AND AND AND AN	USA Genery Cenery One Final Hud USA USA USA USA USA Genery	AVR AVR AVR AVR TOO TOO TOO TOO TOO TOO TOO TOO TOO TO	South or glotted South S	Indeed	NA.  NA.  NA.  NA.  NA.  NA.  NA.  NA.	NAT  NAT  NAT  NAT  NAT  NAT  NAT  NAT	Conductories  (CSA)	Secritors	\$1 mm   \$1 mm	Annual An	MATERIA SERVICE SERVIC	Ven  NOT  NOT  NOT  NOT  NOT  Ven  Ven  Ven  Ven  NOT  NOT  NOT  Ven  Ven  NOT  NOT  NOT  NOT  NOT  NOT  NOT  NO		90 10 15 90 10 15 10 10 10 10 10 10 10 10 10 10 10 10 10	NO N	NAME OF TOTAL  NAME  NAM		The second secon
of Popular Laminos  of State Telephonic St.	Baseline St. (1971 - 1974 - 19	USA Genery Genery Otto Otto Genery USA USA USA	AR AR AR AR 100 100 100 100 100 100 100 100 100 10	Sound plants Sound	Indeed	NIA.	NAT  NAT  NAT  NAT  NAT  NAT  NAT  NAT	Conductorise  (CIA)	Secretary	\$2.00 mm \$2.	Annual Annual Annual Valentinia Annual Valentinia Annual A	MATERIA STATE OF THE STATE OF T	700   NOTE   NOTE   NOTE   NOTE   NOTE   NOTE   NOTE   NOTE   Yes   Yes   Yes   NOTE		90 10 75 90 10 10 10 10 10 10 10 10 10 10 10 10 10	740 7600 7600 7600 7600 7600 7600 7600 7	NAME OF TOTAL  NAME OF TOTAL  NAME OF TOTAL  NAME OF TOTAL  ANOVIGE Should  NAME OF TOTAL  ANOVIGE Should  NAME OF TOTAL  NAME	10 10 10 10 10 10 10 10 10 10 10 10 10 1	The second secon
of Popular Laminosis  of State Temporaria State  of State State State State State  of State	Bauter Stort Good Good (1), 491 SA AND AND AND AND AND AND AND AND AND AN	USA Genery Cenery One Final Hud USA USA USA USA USA Genery	AVR AVR AVR AVR TOO TOO TOO TOO TOO TOO TOO TOO TOO TO	South or glotted South S	Indeed	NA.  NA.  NA.  NA.  NA.  NA.  NA.  NA.	NAT  NAT  NAT  NAT  NAT  NAT  NAT  NAT	Conductories  (CSA)	Secritors	\$1 mm   \$1 mm	Annual An	MATERIA SERVICE SERVIC	Ven  NOT  NOT  NOT  NOT  NOT  Ven  Ven  Ven  Ven  NOT  NOT  NOT  Ven  Ven  NOT  NOT  NOT  NOT  NOT  NOT  NOT  NO		90 10 15 90 10 15 10 10 10 10 10 10 10 10 10 10 10 10 10	NO N	NAME OF TOTAL  NAME  NAM		The second secon
of Popular Commons  of State Temporaria  of State State State State  of State State State State State  of State State State State State State  of State State State State State State State  of State St	Bauter St. (1971 - 1974	USA Centery	A/R A/R A/R A/R A/R A/R A/R 1709 1709 1709 1709 1709 1709 1709 1709	South organise  South organise	Indeed	\$15. \$16. \$16. \$16. \$16. \$16. \$16. \$16. \$16	NAT  ANT  ANT  ANT  ANT  ANT  ANT  ANT	Conductors and Conduc	apolysis  yas  yas  apolysis  apolys	Market Ma	Annesse  Annesse  Annesse  Annesse  Annesse  Vesurfacts Vesurfacts Vesurfacts Vesurfacts Annesse  Anne	MATERIA SERVICE SERVIC	Visit NATA		Up to the general control of the con	NO N	SAMPLE FOA.  1985 1985 1985 1985 1986 1986 1986 1986 1986 1986 1986 1986		The second secon
or Project Continues  or State Security	Section 2014 (1994	USA Genery Gree Gree Soul Story USA USA USA USA USA USA Sensory USA Soul Soul Soul Soul Soul Soul Soul Soul	A/R A/R A/R A/R A/R A/R A/R 1700 1700 1700 1700 1700 1700 1700 170	Service of places  Service  Se	100ml	64 64 64 64 64 64 64 64 64 64 64 64 64 6	NATION OF THE PROPERTY OF THE	Continuous come  (ii like  (iii liii like  (iii like  (iii like  (iii like  (iii like  (iii like  (	Springer  Spring	10 mm	Annual An	900 900 900 900 900 900 900 900 900 900	100 100 100 100 100 100 100 100 100 100		Spiral Department	10 10 10 10 10 10 10 10 10 10 10 10 10 1	New PEA, Class  New PEA, Class		The process of the pr
Definition of the control of the co	Section 20 (1971 - 2004 Cont. 2), 497 Cont. 2004 Cont. 2), 497 Cont. 2004 Cont. 2), 497 Cont. 2004	USA General	A/R  A/R  A/R  A/R  A/R  A/R  100  100  100  100  100  100  A/R  A/R  A/R  A/R	Street in gloves  Street  Stre	100mm	64 64 64 64 64 64 64 64 64 64 64 64 64 6	NATION OF THE PROPERTY OF THE	Continuous come  (iii lis	\$1.00 \$1.00	Market   M	Annex	MATERIAL PROPERTY AND	100 M M M M M M M M M M M M M M M M M M		90 10 th gard 10 th, 100 11 th, 1	100 100 100 100 100 100 100 100 100 100	NewFort Fish,  See  100  100  100  100  100  100  100		The process of the pr
Definition of the control of the co	The control of the co	USA General	A/R A/R A/R A/R A/R A/R 100 100 100 100 100 100 A/R A/R A/R A/R A/R	Stephen of planes  Stephen  St	100mm	64	100 100 100 100 100 100 100 100 100 100	Continuous Continuo C		Market   M	Amend	MINE MAN	100 MM M		90 10 Aug 40 10 Aug 10	100 100 100 100 100 100 100 100 100 100	Name of Co.  See See See See See See See See See Se		The control of the co
Definition of the control of the co	Section 20 (1971 - 2004 Cont. 2), 497 Cont. 2004 Cont. 2), 497 Cont. 2004 Cont. 2), 497 Cont. 2004	USA General	A/R  A/R  A/R  A/R  A/R  A/R  100  100  100  100  100  100  A/R  A/R  A/R  A/R	Street in gloves  Street  Stre	100mm	64 64 64 64 64 64 64 64 64 64 64 64 64 6	NATION OF THE PROPERTY OF THE	Continuous come  (iii lis	\$1.00 \$1.00	Market   M	Annex	MATERIAL PROPERTY AND	100 M M M M M M M M M M M M M M M M M M		90 10 th gard 10 th, 100 11 th, 1	100 100 100 100 100 100 100 100 100 100	NewFort Fish,  See  100  100  100  100  100  100  100		The process of the pr
Definition of the control of the co	The control of the co	USA General	A/R A/R A/R A/R A/R A/R 100 100 100 100 100 100 A/R A/R A/R A/R A/R	Stephen of planes  Stephen  St	100mm	64	100 100 100 100 100 100 100 100 100 100	Continuous Continuo C		Market   M	Amend	MINE MAN	100 MM M		90 10 Aug 40 10 Aug 10	100 100 100 100 100 100 100 100 100 100	Name of Co.  See See See See See See See See See Se		The control of the co
Definition of the second of t	The control of the co	USA General	AR AR 100 1700 1700 1700 AR AR AR AR AR AR	Street or gloves  Street or gl	100mm	\$40 \$40 \$40 \$40 \$40 \$40 \$40 \$40 \$40 \$40	W   W   W   W   W   W   W   W   W   W	Continuous Continuo C		Market   M	Antenna Antenn	MINE MAN	100 000 000 000 000 000 000 000 000 000		100 M	100 100 100 100 100 100 100 100 100 100	Name FEA.		The control of the co
Definition of the second of t	The control of the co	USA Genery Green Green Gree Gree Green	AR A	Street of plants  Street  Stre	Home Home Home Home Home Home Home Home	No.	Management of the control of the con	Continuous Continuo C	Section (Section (Sec	Market   M	Animate Animat	MET	100 100 100 100 100 100 100 100 100 100		100 M	100 100 100 100 100 100 100 100 100 100	Nation FEA.  Natio		The control of the co
Definition of the second seco	The control of the co	USA  Conserve  Conserve  Conserve  Conserve  Conserve  Entered  Entered  USA  USA  Conserve  USA  South Rose  India  Conserve  USA	AR	Street of plants  Street  Stre	Total	100 Mars 100	with the second	(Personal content of the Content of		Market   M	Amenical Ame	MATERIAL STATES AND	100 100 100 100 100 100 100 100 100 100		100 to high of the column	100 100 100 100 100 100 100 100 100 100	MATERIAL TEAL OF THE PARTY OF T		The control of the co
Definition of the control of the co	The control of the co	Centerly Centerly Content Cont	A/R	Service of plants  Service  Se	Home Home Home Home Home Home Home Home	100 Mars 100		(Personal Content of the Content of		Market   M	Amenical Ame	MATERIAL STATE OF THE STATE OF	100 mm of 100 mm		100 mm   1	100 100 100 100 100 100 100 100 100 100	MARKETER		The control of the co
Definition of the control of the co	The control of the co	Centerly Centerly Core Core Core Core Core Core Core Core	AW   AW   AW   AW   AW   AW   AW   AW	Service of plants  Service  Se	Total	100 Mars		Continuous Continuo C		March   Marc	Amenical Ame	MASS	100 mm of the control			100 100 100 100 100 100 100 100 100 100	MATERIAL TO A MA		The control of the co
Definition of the control of the co	The control of the co	Centerly Centerly Content Cont	A/R	Service of plants  Service  Se	Home Home Home Home Home Home Home Home	100 Mars 100		(Personal Content of the Content of		Market   M	Amenical Ame	MATERIAL STATE OF THE STATE OF	100 mm of 100 mm		100 mm   1	100 100 100 100 100 100 100 100 100 100	MARKETER		The control of the co
Department of the control of the co	The control of the co	Centerly Centerly Core Core Core Core Core Core Core Core	AW   AW   AW   AW   AW   AW   AW   AW	Service of plants  Service  Se	Total	100 Mars		Continuous Continuo C		March   Marc	Amenical Ame	MASS	100 mm of the control			100 100 100 100 100 100 100 100 100 100	MATERIAL TO A MA		The control of the co
Department of the control of the co	The Control of the Co	USA Greeny Green	NR	Street of plants  Street  Stre	Total  To	100 Mars		Continuous Continuo C		March   Marc	Amenical Ame	1993 1993 1994 1994 1994 1994 1994 1994	100 mm of the control		100 to	100 100 100 100 100 100 100 100 100 100	MARKETTAL TO A MARKET		The control of the co
Department and section of the control of the contr	The Committee of the Co	USA General Ge	NR   NR   NR   NR   NR   NR   NR   NR	Street or plants  Street  Stre	The state of the s	100 Mars		Continuous comments  Color Col	Services  Servic	March   Marc	Amenical Ame	MATERIAL STATES AND	100 mm and		100 to	100 100 100 100 100 100 100 100 100 100	Market Fla.  Mark Coale  Mark Coale  Mark Coale  Mark Coale  Mark Coale  Market Fla.  Market Fla		The control of the co
The Proposed and State of Stat	The control of the co	USA General	100 AR	Stephen organization of the control	Test	100 Mars		Continuous continuo c		March   Marc	Amenical Ame	MATERIAL STATES AND	100 mm and		100 to	100 100 100 100 100 100 100 100 100 100	Market Fla.  Mark Cost  Mark Cost  Mark Cost  Mark Cost  Mark Cost  Market Fla.  Ma		The control of the co
Definition of the control of the co	Section 19 Control Con	USA General	100 AR	Section of planes  Section 1.	Test	100   100		Continuous Continuo C		Market   M	Amenical Ame	MATERIAL PROPERTY AND ADMINISTRATION OF THE PROPERTY ADMINISTRATION OF THE PROPERTY AND ADMINISTRATION OF THE PROPERTY ADMINIS	100 mm and		100 to high 100	100 100 100 100 100 100 100 100 100 100	Market FEA.  See See See See See See See See See Se		
The Proposed and State of Stat	The control of the co	USA General	100 AR	Stephen organization of the control	Test	100 Mars		Continuous continuo c		March   Marc	Amenical Ame	MATERIAL STATES AND	100 mm and		100 to	100 100 100 100 100 100 100 100 100 100	Market FEA.  See See See See See See See See See Se		
Definition of the control of the co	Section 19 Control Con	USA General	100 AR	Section of planes  Section 1.	Test	100   100		Continuous Continuo C		Market   M	Amenical Ame	MATERIAL PROPERTY AND ADMINISTRATION OF THE PROPERTY ADMINISTRATION OF THE PROPERTY AND ADMINISTRATION OF THE PROPERTY ADMINIS	100 mm and		100 to high 100	100 100 100 100 100 100 100 100 100 100	Market FEA.  See See See See See See See See See Se		
Definition of the control of the co	Section 19 Control Con	Units of the control	AM   AM   AM   AM   AM   AM   AM   AM	Section of planes  Section of planes  Section of the section of planes  Section of the section of planes  Se		100   100		Continuous Continuo C	STORM	Market   M	Amenical Control of the Control of t	MATERIAL STATE OF THE STATE OF	100 mm and		100   100	100 100 100 100 100 100 100 100 100 100	Market Fish	90 90 90 90 90 90 90 90 90 90 90 90 90 9	

39 Fangitou Yestonskos Eistechnulogy	One days SARD-CVVV (COVID-18) IgGsgM Yest	Olive	N/R	Blood, serum or plasme	Indirect	NA	NE	Innunolismelography	NOTON	10 min.	Vaueliberts	Infected 200	Yes	8y0 83.7% Syst 81.3% ToolstoyG + 1g8t) 91.1%	NR.	16,00	NR	NR	https://www.technostatic.com/cro-shap-sars-cond-cond-filliggigentasi- 3-html
100 Peolgen Scientific	COVID-19 lgG/gM-Ropid Tool Coscotic (Whole BlackSenum/Flaume)	USA	N.T.	Stood, serum or plasma	Indeed	NA.	NA.	Innuestronistopsphy	ayo iyar	10 min	VauelSente	NR	NR.	NR.	NA.	80	Nation FDA	NR	https://www.hoolges.com/if-requiralitry.com/d-10
			NR.	NR.	Indeed	NR	NA.	NA.		NR	NR NR	NR	NR.	NR		NO			
27 Pullana	Humania COVID-19 IgG/IgM Yest	South Kowa	N.K	No.	Tribed	NR.	NA.		Berin	NR.	. Ale	NK.	NK.	No.	NR.	NO	NR	NR	http://bunesis.com/englindes.jsp
102 Human Yonghe-Gun Sieleshnelogy Co., LM.	SARS-COV * specific onlibody lest Kit	Ories	N/R	NT	Indeed	NR	NR	NE	NR.	NET	NR	NR	NR	WR	NE	NR	MI	NE	http://www.sundrincedrad.com
100 Furse Live Biotechnology Co. Ltd.	COVID-10 IgGrigM Delection NE (College gold)	Own	NR.	NR.	Indexed	NA.	NR.	Innunctionalignphy	цоци	MR	Maulthoris	NR.	NR	NR.	NR.	NR.	NR	MR	http://www.litus.com.co/en/
104 Monthline	COVID Sorology Kit Multifacet Immunoscopy	USA	N.E.	N/I	SEL	NR	N/I	M	NN.	NE	NII	NII	NR	wa	NA.	NII	SH	NE	https://ndext.com/products/vaxamay/vaxamay corons vinus corescopy
105 Isrovita Biological Technology Co., Ltd.	2015-4CsV As Test (Colocal Gold)		NR.	Stood, serum-or plasma	Indeed	NA.	NR.	Innunchronatography		NR		NR	N/R	MR	NR.	NO.	NAME OF THE PARTY.	NR	http://www.innovite.com.childenfor/
55 Innovite Beisgical Technology Co., Ltd.	2295-HOLV As THE COROCH GODS	Own	N/R	Stood, securi-or plasma	Indeed	N/A	NR	Innunchonatography	NACION	NR	Vauelberds	NR NR	N/R	NR	NR.	NO.	Noticed PEAL INVPIA. China	NR.	http://www.innovide.com.children/ovi
IDE InClass Products, Inc.	Report SANS Color 2 Androny Septing St	Own	N/R	NR.	Indeed	NA	M	NA.	Acrem	NET	AR	NII	NN.	NR	NA.	Net.	NR	NE	http://www.intervani.com/
67 Mile Products, Inc.	Hapd SARS-Con-2 Antibody Test	Crina	NR	NR.	indeed	NA	NR.	NA.		NR	NR.	NR NR	NR	NR.	NR.	NR	NR	NR	http://www.intecasi.com/
108 Jangau Bioperfectus Yeshnologies Co. Ltd	PerfectPCIC Neuri Corone Virus (SARS-CoV-2) (pM)gG Repic Test NZ	Oire	N/I	N/L	Indeed	NA.	NA.	NA.	NAME O	WR	NR	NII	NR	wa	NA.	NIL	NR	MI	
Jangui superenta i survanges ca co		United		~.	2080		- No.		94.00							Am.	AM.		79,700,550,051
109 Jangau Bioperlectus Technologies Co. Ltd	PerfectPCC News Corone Virus (SARS-CoV-2).Ag Hapet Teel Kill	Orina	NR	NR.	Direct	NR	NA.	NE	NA.	NR	NR	перлиминерозг							
Jangas Superial Stamedical Technology (Maning) Co., Ltd.	Fact SARS Colif 2 lgM/kgG Antibody Delevation Kit (Colloide Gold)	Owe	106	Stood, securior phome	Indext	NA.	NR.	Innuestrinalignity	NAME OF	NR	Moultimos	NH	N/R	NR	NR.	нио	NR	NR	Mp./rema.superbagiitud.com/public/portel/wedo/youkidelabid.50.Herl
111 Haphers Diagnostics	KDs COVID-19 Antigen Detection Regist Test	USA	NR.		- Court	NR NR		NR.	NA.		NR .	NR	NR	NR	NR.	Indoxekprent	NR		
	TOTAL STREET, SECTION AND THE				CHAIL .		-			-									
112 Keptera Diagnosios	KDs COVID-19 IgG1gM Rapid Detection Test Kill	USA	NR.	NR.	Indeed	NA.	NR.	MR.	Accin	NR	NR	NR	NR	NR	NR.	Indexelopment	NR	NR	Mgs Negliera som/Ejrodudjojeline
113 KRISHGEN Bodyelern	Human Ann SARG-CoV-2 (Covid-15) Nucleocopsid Probein (pD ELISA (marcus)	India	109	Blood, securi or plasma	Indirect	NA	Recontinent ortigen	EUSA	igo.	NR	Automated	NR	NE	NR	NR	RUO	NR	NR.	htgs://inishger.com/debelogit.pleads/products/1554/2/28/1/89/1615. 3 GBNUSA Hamer Arti-Coronavirus Condi- 10 gBnustation_ELBA_vart.0.pdf
114 KROHOON Budyeers	Human SARS-CoV-2 (Covid-19) (3,/3A (manual)	Inda	TOS	Blood, serum or plasma	Cirel	Nucleopolein artibody	NA.	EUSA		NR.	Automated	NR	NR	NR	NA.	RUO	NR	NR	Topa Trinshyar comilebilinji, pisalotjenokura 15840/0000/014/015- 4, 0000/04, Haman, Currinarina, Curidi 15, Antigen, Casmilarina, (DUSA, neri, 1 pdf
						_													The Robert of March State Control of the Control of
115 KRISHGEN BOSYMIN	Human SAHS-COV-I (Covid-10) Qualitative ELISA (Harvad)	India	105	Blood, serum or plasma	Direct	Nucleoprobin artifocty	NA.	EUSA	,NA	NR	Automated	NR.	NR.	MR	NR.	NUO .	NR	NR	5 GENUSA Haman Commence, Code 10 Antigun Casitative, ELEA, vart 3 pd
THE LARTEST CHASMOSTICA SIN	And COVID-19 lysingto Report Fact	Book	TOS	Blood, serum or plasma	Tribut	NA	NR.	Innunchonslayapty	No. of	10 min	Veselflands	11 Section 20, Flexibly 50, Tutal 70	Yes	160 200/r 104 80/r	No see Present	ND	AWSA bail	NR	https://consultas.anvea.gov/oriapitonau/tsiprode/po05561110460502 011 lane-04200013/nmeMega-edf/011600003-08-050120- 1201120643201.PDF15une/aution/Guest
177 Leadpane Biomedical, Inc. Leadpanelli	SARS/SARS-CoV-2 Arrigen Report Test Kit	Oire	N.R.	NR.	Cirect	NR.	NA.	NR.	NA.	NR	NR.	NR	NR.	NR.	NR.	Indonésprent	NE	NE	The dates become fire our heat-index index by Tennour
118 Leadjure Biomedical, Inc. Leadjure®	SARSSARS-CUV2: yGRynt Rujid Tworks	Oire	NR.	NR.	Indirect	NA.	NR.	14	цоци	NR	NR	NR NR	88	NR	NA.	IndexEgrant	NR	NR	http://emw.beadgemetris.com/web/index/index.jag/filang-ren
115 Lifeeseay Diagnostics Pty Ltd	Test-II COVID-15 IgMItgG Lateral Film Assay	South Africa	NR.	NR.	Indexed	NR	NA.	NA.	цоци	NE	NR	NH	N/R	NR	NR.	NTI	Notified FOA	NR	Пр Лини Мизеку соп Лоте обр
LOWINA AG	COVID-19 Artigen Repid Text Device	Carch Republic	NR.	Blood, secure or plasma	Indirect	NA.	Reconlined ordgen	Innunchonstopsphy	North	Barin	Mostfleris	NR	NR.	WR	NR.	NO.	NR	NR	https://www.test-conid?theu/
121 Carrinostos, Inc.	OUF-COVID19 (anariphone-read out high versivity unligen detection text)	USA	NR	Nespharyopal sesti	Direct	NR	NA.	NK.	NA.	NET	NE	NR	NR.	WR	NA.	Indexignant	NR	NE	https://uminosites.com/lechnology
122 Landbuck Diagnosios Inc.	QuickProfer=2015+CW/byDigM Conto Yest Cont	USA	NR.	Blood, serum or plasma	Indirect	NA.	Pacontinent artigen	Innanchonatography	NGTON	15 min	Massifilands	NR	NR.	NR	NR.	ND	NR	NR	Tops:/fumiquisk.co
123 LuminuDo	LUMBUTEK COND 16 (NG)	USA	NR.	Blood, serum or plasme	Indeed	NA.	NA.	Innerotematopopy	NO.PH	10-min	VavelBenis	NR	NR.	WE	140 00 01 14M 00 2%	NR	AWSAbaci	NR	htgs: frewsiab.com/belumiselei-testes-rapidos-diagnosisco-rapidos- especítico para conid 18
		***					-												especifico-para-sorio Mr
MedicarByrteen Blunedwickogy Co., Urd	COVID-19 IgRIFLyG-Rapid Text Cosserie	Otto	NR	Blood, serum or plasma	Indirect	NA.	Percentificant arrigen	Innerochonetography	NGTON	5 - 10 min	Vausifilands	NR	NR	NR.	NR.	NO	Notified FOA.	NR	http://en.nbmedicalojutem.com/Ehlignoduchteal/1900
Mei Ning Kang Cheng China Biotechnology RSG Centur, Inc.	Corone Virus Disease 2019 (DOVID-19) lighting Di Detection Hit.	Otto	NX.	NR.	Indext	NA	NA.	NA.	NOVE	NE	NR	NR	88	NM.	NA.	MUO	NR	NR	NR.
125 Madule Innovations Private Ltd	nContiEMEs type by test for spike and fiv-proses of SARS-CAV 2	Inda	NR	NR.	Indexed	NA.	Spike and Nipodelins	NR.	NGTON	NR	NR NR	NR NR	NR.	NR	NR.	Individual	NR	NR.	htp://moduleinnorations.com/
				N.K.			Spike and it provins						N.K.						
127 Mahubia Biotechnology RSD Center	SARS-CoV-2 IgN & IgS Quartum Dot Immunoscay	USA	TOS	Blood, securior plasma.	Indext	NA	Reconcinent spike protein	Immeroflamescence	NOVE	10 min	Automated	Infested 105, Healthy 157, Total 252	Yes	89-12% (82-12%-04-88%)	99.36% (96.00%-99.96%)	ND	Nullfel FOA.	NR	https://doi.org/10.000-4834-9000- 51-0860-02156-Neuror.com/upi/27a16f_56-e6873a; 9649-10.6289-50; 7430625-pdf
128 Malogic Ltd	Molegic COVID-19 Report Text	ux	NR	NR	Indirect	NA.	NR	NA.	NR.	10 min.	NR.	NR	NR.	NR.	NR.	Industryment	NR	NR	https://mologic.co.uk/ecogic-and-partners-begin-validation-process-fur- use): 18-paint of need-diagnosis-heal?
129 Nul rest minister Ontol N/2ALS	COVID-119 IgiSTyM Text (3430039-25, 2430009- 23, 2430019-10)	Germany	TOS	Blook serum or planne	Indexed	NA.	Recentificant arrigen	Innectional grady	моли	15-min	VesetBands	IgG Infested 83, Healthy 227, Told IgG 310 IgM Infested 79: Healthy 227, Total IgAt 306	Yes	1gG 96.8% (10.7% - 99.8%) 1gW 90.7% (56.0% - 97.3%)	NG 98.7% (99.2% - 99.5%) NW 98.7% (98.8% - 99.8%)	ND.	NR	NR	https://www.notivesminder.com/en/hadah-covid-19-lgp-lgm-lenk-25-lesk- casor/es.html
	23, 2400019-10)	January .	108	BOOK, 60 CO F DESIGN		NA.	Pateriorat priger	THE STREET, ST	0.0	1140	TOTAL SAFETY	IgM Influence 7th Mesolitry 227, Total IgMt 506		igw 99.7% (96.0% - 97.3%)	\$61.00 LEV (METER - 00.00)	NO.			cassories. Form
Northing BioPoint Diagnostics	SARS-CoV-2 digAfatal antibody rapid test	Orino	NR	NR	Indeed	NA	NR.	NR	IgA/Total/Ab	NR	Holfed FDA.	NR	ntp //w.njblopolet.com/indox.html						
131 Northing Litering Blo Products Co., LSI	SARS-CoV-2 IgRINGS Aritholy Rugal Taul Kit	Owe	TOS	Stool, securior plasma	trateact	NA.	NA.	Innuestronalispaphy	цаци	15-mir	Yearthree	Hilwind 173, Penaltry 35, Tyrul 206	Yes	6/G 82.7% 6/N 64.7% TauxingG+1g81 65.1%	198 100% 89M 100% Teles (195-199) 100%	NO	Natified PDA	NR	http://www.liminglish.com/uplace/file/00000003.00000000000001745.p
132 Naming Liming Bio-Freducts Co., UM	COVID-19 Antigen Report Text Device	Ove	N/R	NR	Circl	NR	NA.	NR.	NA.	NR	NR.	NR	NR.	NR	NA.	NO.	NR	NR	htp://enu.bininglo.com/index.php?mnontent&cristentanshoud.cob/ n155cn1155gccdn03
533 Narying Vasyme Medical Technology Co., LTD	D 2015 HCoV IgSAgN Report Tenong Kill	USA	TOS	Blood, serum or plasma	Indeed	NA.	NR.	Innuestronikgropty	NG-ION	10 min	VauelBents	infected 2011, Healthy 263, Total 573	Yes	91.50% (MLS/%, S4.60%)	ST.00% (14.74%, 56.30%)	80	SR	NR	https://vii.conde.yu/2000.conder_180073000484.es.pdf
tid Nandissanti	NanoMinistrus SARS Colif 2 IgMitgG Arctionty Report Test	USA	N/R	NR.	Indeed	NA	NR.	NA.	sycoger	NR	NR.	NR	NR	NR	NR.	NR	Nation FOA	NR	http://www.nancomensections.com
130 Namong Cysro Biotechnology Co., LTD	COCNS COVID-19 Ig DigN Report Teacher	Own	NR.	Stood, securior phome	Indeed	NA.	Ecconolinant orrigen	innunor/constigraphy	lgG lgM	10 min	Vauel Sente	NS	NR	NO.	NR.	NORLO	NR.	NE	http://www.ageno.bio.com/
Sartang Diagnos Biotedivology	(2010 rCrV) New resonative finitionly Test (Colloidel Cost)	Ove	N/R	NR.	Indeed	NA.	NR.	NR.	MR	NR	NR.	NR NR	NR.	NE	NR.	NR	Nation FOA	NR	10p Prime diagnostic contest
137 Sicridas Bolach, Inc.	Rapid COVID-19 (SARS-CoV I) (SARGG Antibody Detection RX	USA	106	Stood, serum or plasma	Indeed	NA	Fincentiment entigen	innunor/sonatography	lgG1gM	10 min	VauelSente	NR	NR	NA.	NA.	NR	Noted FDA	NE	https://www.nemidas.com/rapid teat for covid 15 sam acv 2 ig nigg antibody-detection-knotifors
TSE Nove Bridgish LLC, Borlettre band	COVID-161gGirgM/Rapid Yard Kill																		
		USA	TOS	Stood, serum or planera	Indeed	NA.	NR.	Innueschonelography	эрон	10 - 15 mar	Vesatilands	NR	NR	NR.	NR.	810	NR	NR	https://www.novachis.com/products/ox/46 15 lgg-lgm-repid test-kit_mbp2
DE PERSONNE GREN PERSONNE		USA	TOS					Innunationalisymphy	устун	ti - time	Meualiflands						NR		https://www.novuebie.com/graductiviou46.13-ligs.igm-reprid teel kit_relig-3 01936
	SARS-CoV-2 Proteone Microerray	USA	100	Blood, serum or plasma Blood, serum or plasma	Indeed	NA.	Complete proteoms	Innueshonelogishy Immunitionscorpe Proble Monarky	NGCOM NGCOMBA	10 - 15 mar NEI	Vesatillands Automated	NR NR	NR NR	NATE NATE	NR NR	RLO NO	166	NA	htips://www.novable.com/graductalou4413-ligs.gam.ngcid feel kill_rdig0- 115-98 https://www.bojcopride1.com/graductalougoperings-ellentost- monarrays/page-entry-test-cours/graductalougoperings-ellentost- monarrays/page-entry-test-cours/graducta-inconstrays/
FerGrande BieTein Development Co., LM SAIBS-CoV-2	SARS-CoV-2 Protection Microsomy  Available Debotion XII (Debotion Corp.  Immunochronologischic assay)							Innunctionalignsphy Immunifunctions Proble Televisian Innunctionalignsphy											
PerGands SicText-Development Co., US SAIS-GAV-2 Pharminch	GARS-CoV-2 Protection Microsomy  Antitholy Determine NG (Determine Determine NG (Determine NG (Deter	Cemeny	106	Stood, senum-or planea	Indeed	NA.	Conglete proteons		lgG1gAMgA	ME	Automated	NS	NT	NER NER	NR.	NO	NR	Net	перал Римин разредней сонартальствующего дне евенский поснежувареция объети наменами у ставинами инстинству перагодней и ставительной предменения и пер
Hamisch	COVID 1910 IgAl Report Tree	Criss Criss	TOS AIR	Slood, securior plasme.  NAT  Slood, securior plasme.	Indirect Indirect Indirect	NA NA	Complete proteons NAS	Innunchionalignsphy Innunchionalignsphy	ISCIGMON NINC ISCIGM	NAME SOURCE	Automated Stead Stands Mount Stands	NRI NRI Infected 64, Newby 254, Total 500	NPC NPC Yes	1969 1969 196 314 196 AS 13 1006 (2G 1967) 16 25 (8 75 98 85)	NR: NR: 90.91-(00-81-90%)	NO NO	NM Netfort FDA	NATE NAM	Naga funira pagungah sangkah albupagning ibersasi, indonenya pagungan periodi. Indonenya pagunah periodik perio
Personnel Birtein Development Co., LM  EARS CHV-2  Framework  Fram		Cemeny	106 A/R	Stood, secur-orplasme	Indeed	NA NA	Complete proteoms	Innunctionalography	golganga NK	NET NET	Automaind Insulfitance	NOT.	NR NR	NER NER	NA.	NO NO	NR NR	Net	перал Римин разредней сонартальствующего дне евенский поснежувареция объети наменами у ставинами инстинству перагодней и ставительной предменения и пер
Hamisch	COVID 19 IgG IgM Report Text	Criss Criss	TOS AIR	Slood, securior plasme.  NAT  Slood, securior plasme.	Indirect Indirect Indirect	NA NA	Complete proteons NAS	Innunchionalignsphy Innunchionalignsphy	ISCIGMON NINC ISCIGM	NAME SOURCE	Automated Stead Stands Mount Stands	NRI NRI Infected 64, Newby 254, Total 500	NPC NPC Yes	1969 1969 196 314 196 AS 13 1006 (2G 1967) 16 25 (8 75 98 85)	NR: NR: 90.91-(00-81-90%)	NO NO	NM Netfort FDA	NATE NAM	Naga funira pagungah sangkah albupagning ibersasi, indonenya pagungan periodi. Indonenya pagunah periodik perio
155 Phenelock. 152 Prepara Didence Inc.	COVIC 19 Ing Sight Report Team Personal Covic 15 Scienting Assay	Ownery USA USA	TOS NIK NIK	Stood, senum or plasme Nett Stood, senum or plasme Managharynguli svata	Indeed Indeed Indeed Indeed Deed Overl	NA NA NA	Complete proteoms  NAS  NAS	Innuconstantingsphy Innucohondegraphy Biodischoris delection	Igiliyanga NIK Igiliyan NIK	Nett Nett 90 min. 20 seg	Automated  Visual Bands  Visual Bands  No. 10 Per 1 Pe	NVII  NVII  Interest 64, Feetby 264, Total 305  NVII	NR NR Van	SMR SMR SMR (CO-GNY) M SMR (CO-GNY) M SMR (M SMR (M SMR) SMR	NATE: NATE: SECURI (SECURI (SECURI ) NATE:	ND NO	NRI NRI NSKEEFÜÄ	945 945 945	Tigo, Temer processed, comprodución/poperró per descrición monamos proporción for usa los es y plantere iniciación en carración poperar de la comprodución regular processo de comprodución processo de comprodución de la comprodución processo de comprodución de la comprodución processo de comprodución de la comprodución regular frames condicionals de la code regular frames code regular frames regular frames regular regular frames regular regular regular regular
151 Pleanands 152 Proport Science Inc. 152 Proport Science Inc. 153 Provider Visc. 154 Provider Visc. 155 Provider Michael Corporation PALSE	CONCRETE (p2) (p4 Filepat Treat Physical Conclete Statementy Analyy PIB Physic Banks COVID-19 (SAMS CAN'S) (SIX Find	Cennery CHINA USA USA USA USA	TOS AR AR AR AR	Blood, secun or plasme  NEX  Blood, secun or plasme  Nexphary qualities and  Nexphary qualities and  NEX  NEX	Indeed Indeed Indeed Cred Cred Undeed	NIA NIA NIA NIR NIR	Complete proteoms  NAT  NAT  NAT  NAT  NAT  NAT  NAT  NA	Ennanchionalisprophy Innunchionalisprophy Elsebotric detection NAI EUSA	Ipoliphilipa Nex Spoliphi Nex Nex	NRT	Automated  Maintiflance  Maintiflance  Nation  Automated	NAT	NOT.  NOT.  Yes  NOT.  NOT.  NOT.	1995 1995 1995 1995 1995 1995 1995 1995	NAT.  NAT.  963% (88.46.60 N)  NAT.  NAT.	NO N	NAME NAME PROMISE FILE NAME NAME NAME NAME NAME NAME	901 901 901 901 901	The first paper to be a selected and the
163 Pharmatick. 162 Physical Science Inc. 163 Pheeligen Inc.	CONDITIONAL TIME PROCESS CONDITIONS TO SERVICE CONDITIONS CONDITIO	Ommeny Owa USA USA USA	TOS AR AR AR AR	Stood, secure or plasme  NAT.  Stood, secure or plasme  Nessphanyopal sealo  NAT.	Indeed Indeed Indeed Indeed Deed Overl	NA NA NA NR	Complete proteoms  NAT  NAT  NAT	Innunctional agraphy Innunctional agraphy Bivercitoric decides	IgGTgMIGA NEX IgGTgMI NEX NEX	1611 1691 93 min 33 min 1611	Automated  Maintenance  Mainten	NRI NRI Infant St. Franky Sts. Trad Sto. NRI NRI	NIR NIX Viss NIR	IMPR  JAMPA  JAM	NAT   NAT   SOLDE   SO	NO N	NR NR NAME OF THE NAME OF T	901 901 901 901 901	The first paging to comproducing comproducin
151 Pleanands 152 Proport Science Inc. 152 Proport Science Inc. 153 Provider Visc. 154 Provider Visc. 155 Provider Michael Corporation PALSE	CONCRETE (p2) (p4 Filepat Treat Physical Conclete Statementy Analyy PIB Physic Banks COVID-19 (SAMS CAN'S) (SIX Find	Cennery CHINA USA USA USA USA	TOS AR AR AR AR	Blood, secun or plasme  NEX  Blood, secun or plasme  Nexphary qualities and  Nexphary qualities and  NEX  NEX	Indeed Indeed Indeed Cred Cred Undeed	NIA NIA NIA NIR NIR	Complete proteoms  NAT  NAT  NAT  NAT  NAT  NAT  NAT  NA	Ennanchionalisprophy Innunchionalisprophy Elsebotric detection NAI EUSA	Ipoliphilipa Nex Spoliphi Nex Nex	NRT	Automated  Maintiflance  Maintiflance  Nation  Automated	NAT	NOT.  NOT.  Yes  NOT.  NOT.  NOT.	1995 1995 1995 1995 1995 1995 1995 1995	NAT.  NAT.  963% (88.46.60 N)  NAT.  NAT.	NO N	NAME NAME PROMISE FILE NAME NAME NAME NAME NAME NAME	901 901 901 901 901	The first paper to be a selected and the
141 Payerson  142 Payers Sieve Inc.  143 Predigen Inc.  144 Predigen Inc.  145 Predigen Inc.  146 Predigen Inc.  146 Predigen Inc.  146 Predigen Inc.	CONCRETE SECTION THE CONCRETE SECTION OF THE SECTION OF THE CONCRETE SECTION OF THE SECTION O	Centery China USA USA USA USA Solution	AR AR AR AR	Blood, secure of planes  NVII.  Blood, secure of planes  Nest, they qualified to seld.  NVII.  NVII.  Blood, secure of planes.	Indeed Indeed Indeed Indeed Indeed Indeed	NGA NGA NGA NGA NGC NGC NGC NGC	Gonglide professor  NAR  NAR  NAR  NAR  NAR  NAR	Innualrandigupy Innualrandigupy Innualrandigupy Everstoric depter NR EUSA	INCOMENTAL SERVICES AND SERVICE	Merci Merci Strain Strain Merci Merc	Automated  Visual Stands  Visual Stands  NAN  Automated  Visual Stands	NATE NATE Indianal SE, Tour SE, Tour SE, NATE NATE NATE	NR	1945 1945 1945 1945 1945 1945 1945 1945	NAT.  NAT.  96.9% (88.4% 66.0%)  NAT.  NAT.  NAT.  NAT.	NO N	NAME NAME NAME NAME NAME NAME NAME NAME	100 100 100 100 100 100	The contract property and product of the contract of the contr
161 Prepared Science Inc.  20 Prepared Science Inc.  20 President National Inc.  21 President Medical Composition PAL SSS  20 PRESIDENT ACT ACT ACT ACT ACT ACT ACT ACT ACT AC	COMMITTEE SEGMENT THE PROPERTY OF THE SEGMENT THE PROPERTY OF THE SEGMENT SEGM	Genery China USA USA USA USA Solo Solo Solo Solo Solo Solo Solo Solo	TOS AR AR AR AR AR AR AR AR	Block secure planes NRI Block secure planes Messbaryout sect NRI Block secure planes NRI Block secure planes NRI Block secure planes NRI NRI Block secure planes	Indeed Indeed Indeed Indeed Indeed Indeed Indeed Indeed Indeed	MAA MAA MAA MAA MAR MAR MAR MAR MAR MAR	Consider professional NASI NASI NASI NASI NASI NASI NASI NASI	Innurational graphy Innurational graphy Enterthic declar  INI  INI  INI  INI  INI  INI  INI  I	groups	1611 1611 1611 1611 1611 1611 1611 161	Automobil  Visual Service  Visual Service  Note  Automobil  Visual Service  Note  No	100 100 100 100 100 100 100 100 100 100	NR N	1965 1965 1965 1965 1965 1965 1965 1965	NAT  NAT  META (SERVICEON)  NAT  NAT  NAT  NAT  NAT  NAT  NAT  N	NO N	NAME  PARTICLE FILLA  NAME  NA	10 10 10 10 10 10 10 10 10 10 10 10 10 1	
In Procession Program Shore to Program Shore to Program Shore to Program Shore to Program Shore (Sport to Program Shore (Spor	CONTROL SQUART TIME  WING CONTROL TO THE TIMENEY ARMY  WING CONTROL TO THE STATE OF THE TIME  WING CONTROL THE STATE OF THE TIME  WING CONTROL THE STATE OF THE TIME  WING CONTROL THE STATE OF THE STATE  WING CONTROL THE STATE OF THE STATE  WING CONTROL THE STATE OF THE STATE OF THE STATE  WING CONTROL THE STATE OF T	General USA USA USA USA USA Solitariand Solitariand Solitariand Solitariand Solitariand	TOS AX AX AX AX AX AX AX AX AX	Block service planne NRI Block service planne	Indeed Indeed Indeed Creek Creek Indeed Indeed Indeed Indeed Indeed Indeed Indeed Indeed	MAA  MAA  MAA  MAA  MAR  MAR  MAR  MAA  MAA  MAA  MAA	Corplete proteons  NAS  NAS  NAS  NAS  NAS  NAS  NAS  NA	Innurational graphy Innurational graphy Businshiri decision NR SUBA Innurational graphy	SOUNDA	NAM	Annested Visual Series Visual Series Net Mit Advanted Visual Series Net Advanted Visual Series Net Net Visual Series Net Net Net Visual Series	100 100 100 100 100 100 100 100 100 100	NOT	460 Mills (1994 Mi	NAT	NO N	1681 1681 1681 1681 1681 1681 1681 1681	10 10 10 10 10 10 10 10 10 10 10 10 10 1	The control of the co
161 Prepared Science Inc.  20 Prepared Science Inc.  20 President National Inc.  21 President Medical Composition PAL SSS  20 PRESIDENT ACT ACT ACT ACT ACT ACT ACT ACT ACT AC	COMMITTEE SEGMENT THE PROPERTY OF THE SEGMENT THE PROPERTY OF THE SEGMENT SEGM	Genery China USA USA USA USA Solo Solo Solo Solo Solo Solo Solo Solo	TOS AR AR AR AR AR AR AR AR	Block secure planes NRI Block secure planes Messbaryout sect NRI Block secure planes NRI Block secure planes NRI Block secure planes NRI NRI Block secure planes	Indeed Indeed Indeed Indeed Indeed Indeed Indeed Indeed Indeed	MAA MAA MAA MAA MAR MAR MAR MAR MAR MAR	Consider professional NASI NASI NASI NASI NASI NASI NASI NASI	Innurational graphy Innurational graphy Enterthic declar  INI  INI  INI  INI  INI  INI  INI  I	groups	1611 1611 1611 1611 1611 1611 1611 161	Automobil  Visual Service  Visual Service  Note  Automobil  Visual Service  Note  No	100 100 100 100 100 100 100 100 100 100	NR N	1965 1965 1965 1965 1965 1965 1965 1965	NAT  NAT  META (SERVICEON)  NAT  NAT  NAT  NAT  NAT  NAT  NAT  N	NO N	NAME  PARTICLE FILLA  NAME  NA	10 10 10 10 10 10 10 10 10 10 10 10 10 1	
In Procession Program Shore to Program Shore to Program Shore to Program Shore to Program Shore (Sport to Program Shore (Spor	CONTROL SQUART TIME  MIGHAN CONTROL TO THE STREAM OF THE S	General USA USA USA USA USA Solitariand Solitariand Solitariand Solitariand Solitariand	TOS AX AX AX AX AX AX AX AX AX	Block service planne NRI Block service planne	Indeed Indeed Indeed Creek Creek Indeed Indeed Indeed Indeed Indeed Indeed Indeed Indeed	MAA  MAA  MAA  MAA  MAR  MAR  MAR  MAA  MAA  MAA  MAA	Corplete proteons  NAS  NAS  NAS  NAS  NAS  NAS  NAS  NA	Innustratelyning	SOUNDA	1611 1641 1640 1640 1640 1640 1640 1640	Annested Visual Series Visual Series Net Mit Advanted Visual Series Net Advanted Visual Series Net Net Visual Series Net Net Net Visual Series	100 100 100 100 100 100 100 100 100 100	NAX Viss NAX	460 Mills (1994 Mi	NAT	NO N	1681 1681 1681 1681 1681 1681 1681 1681	10 10 10 10 10 10 10 10 10 10 10 10 10 1	The control of the co
All Principles  All Principles	Once The Spirit State of t	Ommeny Otera USA USA USA USA Solor S	1700 AVE AVE AVE AVE AVE AVE AVE AVE AVE	Book servine planes  Note Servine planes	Indeed	No.	Complete proteoms  NAS  NAS  NAS  NAS  NAS  NAS  NAS  NA	Innacrondiquiry	STOCKET	1971 107 107 107 107 107 107 107 107 107 1	Annual Vaul Section  Visual Section  Visual Section  Note  Authorists  Visual Section  Note  Authorists  Visual Section  Visua	100 100 100 100 100 100 100 100 100 100	5/2 5/4 5/4 5/4 5/4 5/4 5/4 5/4 5/4 5/4 5/4	SAN SECTION SE	NAT	NO N	NAME NAME PARRIAGE FILIA NAME NAME NAME NAME NAME NAME NAME NAM	10 10 10 10 10 10 10 10 10 10 10 10 10 1	
In Proceedings of the Control of th	Once The plant from the American State of th	Cennery  CHIR  USA  USA  USA  USA  Solt Kine  Solt Kine  Delenfeed  Sold Kine  O'Re  USA	100 AR AR AR AR AR AR AR	Stock service places  NAT  Stock service places  NAT  Stock service places  NAT  Stock service places  NAT  Stock service places  Stock service places	Indeed Indeed Indeed Creek Indeed	NAA	Complete proteons  NAI  NAI  NAI  NAI  NAI  NAI  NAI  NA	Innacrondiques Innacr	SOLINAMA  SOLINA	1971 1975 1970 1970 1970 1970 1970 1970 1970 1970	Annesed Vaultimes Vaultimes Mil Allended Vaultimes Mil Allended Vaultimes Mil Mil Vaultimes Vaultimes Vaultimes Vaultimes Vaultimes	100 100 100 100 100 100 100 100 100 100	500 Sept. 10		NAT	FO FO NOT THE PROPERTY OF THE	NAME  NAME  FRAMEWORK FILE  NAME  NA	10 10 10 10 10 10 10 10 10 10 10 10 10 1	
All Principles  All Principles	Once The Spirit State of t	Ommeny Otera USA USA USA USA Solor S	1700 AVE AVE AVE AVE AVE AVE AVE AVE AVE	Book servine planes  Note Servine planes	Indeed	No.	Complete proteoms  NAS  NAS  NAS  NAS  NAS  NAS  NAS  NA	Innacrondiquiry	STOCKET	1971 107 107 107 107 107 107 107 107 107 1	Annual Vaul Section  Visual Section  Visual Section  Note  Authorists  Visual Section  Note  Authorists  Visual Section  Visua	100 100 100 100 100 100 100 100 100 100	5/2 5/4 5/4 5/4 5/4 5/4 5/4 5/4 5/4 5/4 5/4	SAN SECTION SE	NAT	NO N	NAME NAME PARRIAGE FILIA NAME NAME NAME NAME NAME NAME NAME NAM	10 10 10 10 10 10 10 10 10 10 10 10 10 1	
In Proceedings of the Control of th	Once The plant from the American State of th	Cennery  CHIR  USA  USA  USA  USA  Solt Kine  Solt Kine  Delenfeed  Sold Kine  O'Re  USA	100 NR	Stock serving places  Note  Stock serving places  Note  Stock serving places  Note  Stock serving places  Note  Stock serving places	Indeed Indeed Indeed Deed Creek Indeed Indeed Creek Indeed Creek Indeed Creek Indeed Creek Indeed Creek Indeed Creek Indeed Indeed Indeed	NAA	Grade prisons  AM  AM  AM  AM  AM  AM  AM  AM  AM  A	Innacrondiques Innacr	STATEMENT OF THE STATEM	1991 1400 151000 151000 15000 1600 1600 1600 16	According  Visual Series Visual Series  Nati Auto Auto Auto Auto Auto Auto Auto Auto	100 100 100 100 100 100 100 100 100 100	500 Sept. 10	SAN AND THE PROPERTY OF THE PR	NATIONAL PROPERTY OF THE PROPE	NO N	1985 1985 1985 1985 1985 1985 1985 1985	10 10 10 10 10 10 10 10 10 10 10 10 10 1	
10 Particular Section 1 Partic	Once The plant from the Comment of t	Ownery  USA  USA  USA  USA  USA  Solt Kine  Solt Kine  USA  Solt Kine  USA	100 AR	Book service places  NR  Manufacture of places  NR  NR  NR  NR  NR  NR  NR  Book service places  NR  Book service places  NR  NR  NR  NR  NR  NR  NR  NR  NR  N	Indeed	\$40.00 \$4	Consider professor  Adv.  Adv.	Introduction depth of the control of	STATE OF THE STATE	1980 1980 1980 1980 1980 1980 1980 1980	Alternative Visual Basics Auto Auto Auto Auto Auto Auto Auto Auto	100 100 100 100 100 100 100 100 100 100	5/2	WE SERVICE OF THE SER	NATION OF THE STATE OF THE STAT	NO N	NAT  NAT  NAT  NAT  NAT  NAT  NAT  NAT		The control of the co
In Proceedings of the Control of th	Once The Spill of	Omenny OWA USA USA USA USA Sulfaced Sulfaced Sulfaced OWA OWA Sulfaced OWA Sulfaced	100 AX AX AX AX AX AX AX AX AX	Book service places  NR  Book service places  NR  NR  NR  NR  NR  NR  NR  Book service places  NR  NR  NR  Book service places  NR  NR  Book service places  NR  NR  Book service places	Indeed	\$40.00 \$4	Consider professor  And  And  And  And  And  And  And  An	Principle (Exp.)  Principle (E	STATEMENT OF THE STATEM	1981 1980 1980 1980 1980 1980 1980 1980	Astronició  Visualitario  Visualitario   Visualitario   Noti  Astronició   Visualitario   Noti  Astronició   Visualitario   Vi	100 100 100 100 100 100 100 100 100 100	600 Visit (100 Visit (	98 99 99 99 99 99 99 99 99 99 99 99 99 9	NA N	NO N	NAME		
10 Particular Section 1 Partic	Once The plant from the Comment of t	Ownery  USA  USA  USA  USA  USA  Solt Kine  Solt Kine  USA  Solt Kine  USA	100 AR	Book service places  NR  Manufacture of places  NR  NR  NR  NR  NR  NR  NR  Book service places  NR  Book service places  NR  NR  NR  NR  NR  NR  NR  NR  NR  N	Indeed	\$40.00 \$4	Consider professor  Adv.  Adv.	Introduction depth of the control of	STATE OF THE STATE	1980 1980 1980 1980 1980 1980 1980 1980	Alternative Visual Basics Auto Auto Auto Auto Auto Auto Auto Auto	100 100 100 100 100 100 100 100 100 100	5/2	WE SERVICE OF THE SER	NATION OF THE STATE OF THE STAT	NO N	NAT  NAT  NAT  NAT  NAT  NAT  NAT  NAT		The control of the co
10 Particular III Par	Once The Spill of	Cemery  O'es  USA  USA  USA  USA  Solt Rose  Solt Rose  O're  O're  USA  Solt Rose  USA  Solt Rose  USA	100 AR	Book service allates  Will  Book service allates  Anni Book service allates  Anni Book service allates  Anni Book service allates  Anni Book service allates	Indeed	\$10.00 \$1	Corpete protocos  AM  AM  AM  AM  AM  AM  AM  AM  AM  A	Introduction depthy Introd	Services	1981 1982 1983 1984 1985 1986 1986 1986 1986 1986 1986 1986 1986	Automited Visual Barries Auto Auto Auto Auto Auto Auto Auto Auto	100 100 100 100 100 100 100 100 100 100	55 55 55 55 55 55 55 55 55 55 55 55 55	900 900 900 900 900 900 900 900 900 900		NO N	NAT  NAT  NAT  NAT  NAT  NAT  NAT  NAT		The control of the co
10 Personal Section 1 Personal S	Once The plant from the Comment of t	Centery Otre USA USA USA USA Selected State State Rose USA	100 AR	Book service address  See  See  See  See  See  See  See	Industrial	100 M	Organization  AN  AN  AN  AN  AN  AN  AN  AN  AN  A	SOURCEMBERGER  Incommentation	STATEMENT OF STATE	198 198 198 198 198 198 198 198 198 198	Antenne     Antenne      Antenne     Antenne     Antenne      Antenne	100 100 100 100 100 100 100 100 100 100	50 50 50 50 50 50 50 50 50 50 50 50 50 5	WE SERVICE TO THE SER		100 Property of the Control of the C	1981 1981 1981 1981 1981 1981 1981 1981		
10 Personals 10 Personals 11 Personals 12 Personals 13 Personals 14 Personals 15 Personals 15 Personals 16 Personals 16 Personals 16 Personals 17 Personals 17 Personals 18 Pe	Once The plant from the Comment of t	Centery Othe USA	100 AR	Book service allation  Note:  Social service allation  Social	Industrial States	100 M	Orrante prisone  NR  NR  NR  NR  NR  NR  NR  NR  NR  N	Introduction depthy  Introduct	WITHOUT THE STATE OF THE STATE	1981 1981 1982 1983 1983 1983 1983 1983 1984 1984 1984 1984 1984 1984 1984 1984	Antoniori Visual Seriori Mill Mill Antoniori Mill Antoniori Mill Antoniori Mill Mill Mill Mill Mill Mill Mill Mi	100 100 100 100 100 100 100 100 100 100	50 50 50 50 50 50 50 50 50 50 50 50 50 5	900 900 900 900 900 900 900 900 900 900		NO N	1981 1981 1981 1981 1981 1981 1981 1981		The control of the co
In Proceedings of the Control of the	Once The plant from the Comment of t	Centery Otre USA USA USA USA Selected State State Rose USA	100 AR	Book service address  See  See  See  See  See  See  See	Industrial	100 M	Organization  AN  AN  AN  AN  AN  AN  AN  AN  AN  A	SOURCEMBERGER  Incommentation	STATEMENT OF STATE	198 198 198 198 198 198 198 198 198 198	Antenne     Antenne      Antenne     Antenne     Antenne      Antenne	100 100 100 100 100 100 100 100 100 100	50 50 50 50 50 50 50 50 50 50 50 50 50 5	WE SERVICE TO THE SER		100 Property of the Control of the C	1981 1981 1981 1981 1981 1981 1981 1981		The control of the co
A Procession of the Control of the C	Control (spill and text for an approximate of the control (spill and text for an approximate of the control (spill and text for an approximate of the control (spill and text for a spill and text for	Centery Otra USA USA USA USA Substanted Subs	100 AR	Book service plants  See S	Indeed	100 100 100 100 100 100 100 100 100 100	Coperation  The Coperation of	SOURCEMBERGER  Incommence of the Commence of t	STATES	198 148 148 148 148 148 148 148 148 148 14	American Indicate Ind	1940 1940 1940 1940 1940 1940 1940 1940	## 1	THE STATE OF THE S	1960   19	FO TO	1991 1992 1992 1993 1994 1995 1995 1995 1995 1995 1995 1995		The control of the co
A Procession of the Control of the C	Control State Co	Omenany Oten USA	100 AR	Book according about the second property of t	Indust In		COMMUNICATION  AND COMMUNICATION	Entractional graph  Incomment graph  Inc	STATES  STATES	198 1000 1010 1010 1010 1010 1010 1010 1	American  Facilities  Faciliti	WITH THE PROPERTY OF THE PROPE	100 Miles	We have been a second or s	160 (100 (100 (100 (100 (100 (100 (100 (	FO TO	981 981 981 981 981 981 981 981 981 981		The control of the co
A Procession of the Control of the C	Control (Control (Con	Ottom Otto Otto USA	1705 AR	Book section plants  Section 2 plants  Book section plants  Section 2 plants  Sectio	Indust In	100 100 100 100 100 100 100 100 100 100	COMMUNICATION OF THE PROPERTY	STANDARD STA	STATES	198 100 100 100 100 100 100 100 100 100 10	Animate Profession of the Control of	The American Control of the Control	100 Miles	The second secon	1960   19	FO TO	1991 1992 1992 1993 1994 1995 1995 1995 1995 1995 1995 1995		The control of the co
10 Personal Section 1 Personal S	Control State Co	Omenany Oten USA	100 AR	Book account plants  The state of plants  Book account plants  Book acco	Indust In		COMMUNICATION  AND COMMUNICATION	Entractional graph  Incomment graph  Inc	STATES  STATES	198 1000 1010 1010 1010 1010 1010 1010 1	American  Facilities  Faciliti	WITH THE PROPERTY OF THE PROPE	100 Miles	We have been a second or s	160 (100 (100 (100 (100 (100 (100 (100 (	FO TO	981 981 981 981 981 981 981 981 981 981		The control of the co
10 Personal	Control State of the Control S	Omesey Otto Otto Otto Otto Otto Otto Otto Ott	100 AR	Book service planes  Note Serv	Industrial Industrial Const. Const. Industrial Industri	100 Miles (100 Miles (	Commence of the commence of th	STATESTATE OF THE STATESTATESTATE OF THE STATESTATESTATE OF THE STATESTATESTATESTATESTATESTATESTATESTA	STATEMENT OF THE STATEM	198 148 148 148 148 148 148 148 148 148 14	American Indiana India	100 100 100 100 100 100 100 100 100 100		We have been seen and the seen	100 100 100 100 100 100 100 100 100 100	Section 10 to 10 t	West		
10 Personal	Control (1991) and the	General Core Core Core Core Core Core Core Core	100 AR	Book service planes  Note Serv	Indicated Produced Pr	100 Miles (100 Miles (	Commence of the commence of th	STORMONDERSON STORMOND STORMON	STANDARD STA	198 100 100 100 100 100 100 100 100 100 10	American Indiana India	100 100 100 100 100 100 100 100 100 100		WATER TO STATE OF THE STATE OF		# 10	West		The control of the co
10 Personal	Control State of the Control S	Omesey Otto Otto Otto Otto Otto Otto Otto Ott	100 AR	Book service planes  Note Serv	Industrial Industrial Const. Const. Industrial Industri	100 Miles (100 Miles (	Commence of the commence of th	STATESTATE OF THE STATESTATESTATE OF THE STATESTATESTATE OF THE STATESTATESTATESTATESTATESTATESTATESTA	STATEMENT OF THE STATEM	198 148 148 148 148 148 148 148 148 148 14	American Indiana India	100 100 100 100 100 100 100 100 100 100		We have been seen and the seen	100 100 100 100 100 100 100 100 100 100	Section 10 to 10 t	West		
10 Personal	Control (1991) and the	Others  Other  O	100 AR	Book service planes  Note Serv	Indicated Produced Pr	100 Miles (100 Miles (	Commence of the commence of th	STORMONDERSON STORMOND STORMON	STANDARD STA	198 100 100 100 100 100 100 100 100 100 10	American Indiana India	100 100 100 100 100 100 100 100 100 100		WATER TO STATE OF THE STATE OF		# 10	West		The control of the co

	155 Shesches Bioessy Bisschnoogy Co., LM	Stonicsy 2019 Novel Communities (2019 o'C/10) Ay G/GA Reged Total	Owe	N/R	NR.	Died	NR	NA.	Innunothonelography	NA.	NR	Vaueliberts	NR	NR	NR	NR.	NR	NR	NR	Trigo Plant Science y cores (N
	156 Shennes Bleezey Beachnoogs Co., Ltd.	Skoccey News Coronevirus (2019-nCev) Collektal Colld Artigen Royal Treat	Cries	N.P.	NR.	Clean	NR.	NA.	Innuestronetography		NR	Visual Banta	NR	NR.	NR.	NR.	NR	NR.	NE	http://en-biosery.com.nl
			Orea	TOS	Next into hear road next	Direct	NR	200	innechenome	**	10 min	Accepted	NN NN	NS.	NR.	MR.	NO.	NR	NA.	http://en.bisseey.aam.tr/2019 novel.consnerius 2019 nove ag leid Nil. Rustecomos immunoshometoprophio essey/
																		-		
																				rapidesci-alli
			Owa		NR.	Indext		NA.	NA.	NyGrigat	MR	N/R	NR				NR.		NR	http://www.benchindmedical.com/index.php
			Crine	N/R	NR.	Indeed	NA	N/I	Innunothonalography	Belon	MIT	Visualitiants	NH	NR	NE	MI.	NO	NR	NE	TODO THEM RUSSIAN COMPLETA SCHARLET NATIONAL SELECTION AND THE STREET NATIONAL SELECTION AND THE SELECTION AND THE STREET NATIONAL SELECTION AND THE SELEC
	121 Sheoten Taloed Medical Ltd	Novel Comments (SDRS Cert 2) IgN Antibody Assay Kit. Xalos Enhanced Insounds/distinatly	Owe	N/R	NR.	Indeed	NA.	NR.	Inmuniturbidinelly	ya.	MR	Automated	NR	NR	NR	NR.	NR	NR	NR	Trigos Pierre ausantina com PLE PRIOCIS ARRESTISADES PER PRIBANAS SCSSNISSEN
Section   Performance   Perf	172 Shenzhen Taliosed Medical Ltd	Nova Community (SARS-Cori 2) IgG Antibody Assay RE (Later Entanced Immunity Satisfactionety)	Orien	NR	NR	Indeed	NA	N/I	immunotutidinely	90	MIT	Automated	NR	NR	MR	NR.	NR	NR	NE	https://www.ausechine.com/NESNSCSARSEPSARSSHSEANBANA7 SISSARSSBI
Mathematical Registry   Math	173 Sheroten Tailored Medical Ltd.	News Conneitus (SARS Ceir 2) IgG Antibedy Assay Nik (X), (k)	Owa	NX.	NA.	rotest	NA.	NA.	Cherolumnessense	ijo.	Nex	Automated	NH	NY	NM.	NA.	NH	NR	NR	10go/Ferre ayouthira.com/LEST/CST/ASTETS/AST
Part	174 Shenshen Tailosed Medical Ltd	Novel Coronavirus (SARS-Corr I) IgM Ambody Assay Ktl. (CLIA)	Ores	N/R	N/L	Indext	NA.	NR.	Cheroluminessesse	ы	WIL	Automated	NE	N/R	NR.	NR.	MR	NE	NE	TOTAL THEM BUT MANAGER CONTITIED THE COLOR SEPTIMENTS OF SERVICE AND SERVICE A
Part	175 Shesires Yels Skinedi Os Lid	Flash SAFS-CUV2160	Oire	N/K	NR.	Indeed	NA.	NA.	Cheroluminessense	yo.	NR	Automated	NR	NR	NR.	NR.	ND	NR	Antibodies in Inflates Scan to Biomes With COVID-19 Presentina Zeng H, et al. JRDN, 2020 Mar 20. das	http://www.xujddo.com/enijecduchs_func.jdp@nnenuid=78&menuid=85
Part			Otea				NA.		Charteleningsweep		w	Automated	NO.			M	80	30		http://www.acyhlis.com/en/groducts_two.php?nemid=P36memid=H5
Part																				
Part																		-		
Part	Bonecol Engineering Co., LKS	INNECTING SOUR-LOW MAY (CITY)	Ories	N/R	Serum or plasma	Indext	N/A	NR.	Otendunivacence	ya.	Main	Automated	NR	N/R	MI	MR	NO		NR	
Part	179 Sona Nanolech	Sena COVID 19 UFA	Carada	NR.	Nessinghay geal sest	Cirect	NR	NA.	Innerechanalography	NA.	NR	Yearthrois	NR.	NR.	168	NR.	NR	NR	NR	https://sonanco.com/.http://son.cos.co.53.us/west- 2.ameconws.com/190c1nd-50NA-50NAFJAnisation-Maxim-643000.pdf
Part	190 Sopherix Co., Ltd	SARS-CoV-2 (gG ambody test kit SARS-CoV-2 (gM antitody first (automated)	Owe	N/R	NR.	Indexct	NA	N/R	NE	NGTON	MR	NR	NR	NR.	NR	NA.	NR	NR	NE	http://wn.sophonix.net/
Part	191 Di Pelersius Rosensh Inditute of Munimes and Sera (TSUE SPESSIVE FMSA)	SARS-CUV-2 Yu-EliA	Resis	NR.	NR.	NR	NR	NR.	EUSA	NK.	MR	Automates	NR	NR	NR	NR.	NR	NR	NR	10g/Imme.sptr/his refusiones/catalog/
Part	552 Sugerisch, Inc.	SGT-fex COVID-19 lgMigG (menual)	South Korea	NR	Blood, serum or plasma	Indext	NA.	NR.	Innunchonalogophy	North	10 - 15 min	Vasaliberis	NR	NR	WR	NR.	ND	NE	NE	htp://www.enlech.com/products/products-view.phg?hd=?liker.pet-32
Part	102 Superiorit, Inc.	997-his COVID 191g/krig0 (907)	South Koma	N.R	Blood, serum or plasma	trident	NA.	NA.	Innunatronaligraphy	North	10 - 15 mir	Yearthros	NR	NR.	NR.	NR.	NO	Native FDA.	NR	10g /kugenbeit samtyrobelognobola ninn pryftib 75larget 02
Part	154 Superisch, Inc.		South Korea	NR.		Indeed	NA.	NR.	Innunothonalogophy			Vasalibacia	NR	88	NR.	NA.	NO	-	NR	http://wywrtech.com/protects/protects-view.phg/hdv78/dargel-32
Part																				
Part																		_		
Part																				htp://w.gentech.com/products-products-niew.php?hd=?\$target=32
Part	167 Superisch, Inc.	SGT-Nui COVID-191yG-(RDT)	South Konsa	NR.	Blood, serum or plasma	Indicat	NA	NR.	Innunchronalography	ųa.	10 - 15 min	Visual Bands	NR	NR.	NR	NR.	ND	NR	NR	1/g /kugenteil: sam/probabiproducts ninn phyfild: Plitaryst-32
Part	158 Sun Bio-Tech (USA) Co., UM	SARS-CoV-2 IgNNyS At Rople Text	USA	NR	Blood, securi or plasma	Indext	NA	NR.	Immunothomatography	NGToM	15 - 20 min	MaselBanis	NR	NR.	MR	NR.	NO	Notifed FDA.	NR	htps://www.scrabbitech.com/ngid-testicomerkus-conic 16-ngid-test
Part	100 Sive Bio Texh (USA) Co., UN	SARS-CVV2 I/M As Repli Test	USA	NR.	Blood, serum or plasme	Indirect	NA.	NA.	Innered named specify	w	15 - 20 min	Vaud Banks	NR	NR	NR	NR.	NO	NR	NR	Trips. Farma surebidesh sumhapid testisummerina samis 18 napid test
Part	190 Sure Bio-Text-(USA) Co., Ltd	SARS-Colv-2 IgS Ab Replic Test	USA	NR.	Bood, secur or plasma	Indexet	NA.	NA.	Incuredronalogicity	100	15 - 20 min	Veselberox	NR	NR.	MR	NR.	ND	NR	NR	https://www.aurabiotech.com/napid-besidonomerina-comid-16-napid-besi
Part	191 Sucho: Kargherine Medical Technology	SARS-Cutv3 lyGRyM Royal Text Cassadia	Oire	NR.	NR.	Indext	NA.	NR.	NR.	NOVE	NR	NR NR	NR	NR.	NR.	NR.	NR	Natived FOA	NR	NR NR
Marken   M				NR.	NR.	Indext	NA.	NR.	NR.		NR.	NR.	NR.			NA.		-	NR	hts finne patrengio con index sace
Mathematical Content																				
																				Trigutema zast emplos sur rinden auge
Part			USA	NR.	NR.	Indexed	N/A	NA.	NR	NG I GM	NR	NR	NR	NR.	NR.	NA.	RUO	Holfed FGA	NR	http://bispointchare.com/rapid-response-conid-19-lgg-ign-leaf-cassiste
Part	195 Telescore Inc.	Nullyles detection and differentiation SARS-Con2 Serotogy Assey (manual)	USA	NR.	NR.	NR.	NR	NA.	NA.		NR	MoseRenis	NR	NR.	148	NR.	RUO	NR	NR	
	106 Tarjin Bereri Biotechnology	SARS-CoV-2 IgGRyH Anthocy Detection NX	Otto	NR	Blood, serum or plasma	Indexed	NA.	Recording polish	Innunotronalography	NGTON	NR	Yourthords	NR	NR	NR.	NA.	NR	Holfod FDA	NR	htps://www.herorigroup.com/2000/04/1 herorigroup.amounces. submission of emergency-use authorization to us fills for its conid 19- rapid tear-desiction-627
	197 Taryn Jarko Boogkal Co., Ltd	SARS-Cot 2 Specific light and light Test Kit (Collocal Gold)	Owe	N#	NR.	Indexed	NA.	NA.	Innuestronalapspty	цоци	WR	Yestfans	NR	NR	NR.	NA.	RLIO	NR	NR	10p Ferma Jankobidogy comh-col 104 Ford
Martine   Mart	100 Tiarya M9CHP Technologies Co., Ltd	Avis COVID-18 vivus lightings report text list. (Collocate good energy)	Own	N/R	NR.	Indeed	NA	NA.	Innuesthonelography	NOVEM	NR	Vaulibros	NR	NR	MK	NR.	NO	NR	NR	http://en.modejs.com/en/
Marie	100 LCUSystems (Index PM, Ltd	2015-new AgG-light Tent	Simpapore	NR.	NR.	Indexet	NA.	NA.	NA.	NgG IgM	w	NR	NR	N/R	MI	NR.	NO	NE	NR	ntig (kili) / exilin. semi (i). protusti
Part	20 Erited Screedool	UNI SARS-CHI-Z ELEM	USA	NR.	NR.	Indext	NR	NA.	EUSA	NN.	MR	Automated	NR	NN.	NR.	MR.	NR	Named FCA	NR.	TOP Person united Biomedical consCCV/OHR
Martin   M	221 Ment 51.	COVID-19 VIRGUAN INS MONOTEST	Spain	NR.	NR.	Indeed	N/A	NO.	Oterrokeninessees	100	NO.	Automated	NO.	N/R	NO.	NO.	800	140	NO	https://www.vinneli.com/
Marke   Mark																			_	
																		_		
No.   No.	204 Wood S.L.	COVID-19 ELISA ING	Spen	N/R	NR.	Indeed	NA.	NR.	EUSA	No.	WR	Automated	NR	NR	NR.	NR.	800	NR	NATE	https://www.ninell.com/
No.   Continue   Con	295 WhisChek Eidech Flangthous Co., Ltd.	Wording COVID-19 IgMINGS Report Text	Orien	NR	Stood, secure or plasma.	Indeed	NA	NR	Innunchronalispsphy	NgCigH	15 min	Vaud Senta	NR	N/R	NR	NR.	NO	Singapore / TEA Asstalia	NE	https://www.vinachek.com/viachek/Englieb/problyzod-covid15/bbs
	200 S.A. Vydra Diagnosiloos Importaceo e Exportaceo	Smart Test Covicté Vytkia	trut	TORS	Bood, serum or plasma	Indeed	NA	NA.	Innunchronatography	Mode	10 min	Vesielitands	Trinched 4, FeoRthy 6, Tolkel 10	Tes		963%	NO	ANVIA Basil	NR	https://consultes.com/es.gov/bispitchau/supendeox/25/5/000960002 04 Leonat/17/15/68/homeAng-halfnebun/C/HAPNIC/SSBown/2004 92/User, Newh/2001 pif/Nethorlowkir/ Gwel
	207 Wuhan Eary Diagnosis Signedicine Co., Ltd.	Novel Commentus IgG ambody territir (soliciosi gold method)	Own	NR	Stood, securi or plasma	Indext	NA	NR.	Innuestronalogophy	96	MR	MauelBende	NR	NR.	1675	MR	NO	NR	NE	http://www.andexceptingnosis.com/en/products/infectious/decovers/9120- 12-2040.html
	208 Wuhan EaryClagnosis Bionedicine Co., Liti	Never Commence by Amsterdy Next All producted gold method)	Owe	N/K	Book, serum or plasma	Indeed	NA	NA.	Innunctionalsgraphy	w	NR	Maueliberos	NR	NR.	N/R	NR.	ND	NR	NR	http://www.andexceptiograssis.com/sen/protuets/inferrises/decrees/2020- 33-2645.html
Part			Own	NR.	Stood, securi or plasma	Indext	NA.	NR.	Innuestronetopsphy	NgGTgM	15min	Vaueliberds	NR	N/R	NR	NA.	NO	NR	NR	Ng Jewa Notice critic Fr. et gat, No. et (White)
Part	270 Namer Boson Biotech Co. Ltd	Played 2018 in Control Tend Control Tend Control							Innueshonatorashy							190 W 35 MM W 75				https://printpsei.com/up-son/ordizationeth/200403/Performence- Onerochreico-Gudy-2006/2-pdf
																		-		
Part																				
Part																		-		
	213 Zegan Lebe, U.C	ReSARS Fan Coone Rapid Test	USA	NR	NR.	NR	NR	NR	NA.	MR	WR	NR	NR	NR	NR	NA.	Indexelopment	NR	NR	https://www.zelgen.com/
	214 Zelpen Lebe, LLC	HeSARS Fon Corona IgM EL/SA Kit	USA	NR	NR.	Indext	NA.	NR.	EUSA	iju.	NR	Automates	NR	NR	NR.	NR.	Indexelopment	NR.	NR	https://www.sidgen.com/
	215 Zelper Lebe, LLC	ReSARS CoV2 Arigen ELISA KII	USA	NR	NR.	Direct	NR	NA.	EUSA	NA.	NR	Automated	NR	NR.	MI	NR.	Indexisposed	NR	NR	https://www.coligen.com/
	216 Zelgen Labe, USC	PleSARS Cott 2 Antigen Repti Text	USA	N#	N/R	Direct	NR	NA.	NA.	NA.	NR	NR	NR	NR.	NR	NR.	Industryment	NR	NR	Titles:Terror salgers son?
	217 Zelgen Lebe, U.C	Mesans Cov 2 Ismelisa XII	USA	NR.	NR.	Indeed	NA	NR.	EUSA	SM.	NR	Automated	NR	NR.	NR.	NR.	Indexisposed	NR	NR	hilps://www.calgen.com/
20   10   10   10   10   10   10   10		PleSARS For Corona Antigen EUSA KX	USA	NR.	NR.	Direct	NR	NA.	EUBA		NR.	Automated	NR.		NR.	NA.	Industryment	NR	NR	https://www.coligen.com/
Part																				hts Jame diginal on Proof, hope-producted page, 16-15502
Description of the control of the																				
Part									Innuesinandayajity											
20	221 Zhengshou Fortune Blescience	Trigger Antibody Report Treat Kins (Colorinal Gold International Homeland systematics)	Owe	NR	NR.	Indext	NA.	NR.	Incursolnomalography	NOVE	NR.	NR.	NR	NR.	NR.	NR.	NR.	Notified FOA.	NR	http://enw.tampiebic.com/
20 Description	222 Dergdou Hunarwel Excel Bide feelogy Co., Ud	BROOFLE COVID-19 IAM ELISA INC.	Oire	NR.	Seun	Indirect	NA.	NR.	EUSA	W.	60 - 70 min	Automated	NR	NR.	NR.	NA.	RUO	NR	NR	htp://ema.ord/coefsacrsh-ed-2661.Heeff_rgr-2_1134
20 20 ANN AND PROPRIES NO. 100 AND	223 Zhengshou Humanwell Discoll Distectivelogy Co., Util	MODELL COND-16 ligs ELISA live	Ow	NR	Serum	Indexed	NA.	NR.	EUSA	iyo.	60 - 70 min	Automated	NR	NR.	NR.	NA.	nuo .	NR	NR	http://www.chioopil.com/h-ed-3664.htmlfl_np=2_1134
	221 Zongdan Bio Trub	SAKS CVV 2 IJENYS KSCA)	Oire	NR.	NR.	Indext	NA.	NA.	Innanconalogaciy	None	WR	NR	NR	NR.	NR.	NA.	NR	Notified FCA.	NR	10g James Millowed was considerly any
	225 Zhuhai Ukoon Diagnosika Inc	Chagnostic Hit for IghtingG Authority to Corona Week) (CW-3011) (Calkatar Garo)	Otto	NR.	Blood, serum or plasma	Indext	NA.	NA.	Immunochromatography	NgG IgM	15 min	VauelBands	NR	NR.	NR.	NR.	NO	Socied FDA./ SMPS China	NR.	http://www.busondagnostics.com/index.phg/htm/htsducklamshowlide/i/ Bites
					NA.		NA.		NA.		NR	NR	NR		NR.	NR.		_	NR	



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit www.prisma-statement.org.

Supplementary Figure S1. Flow diagram of PRISMA statement.