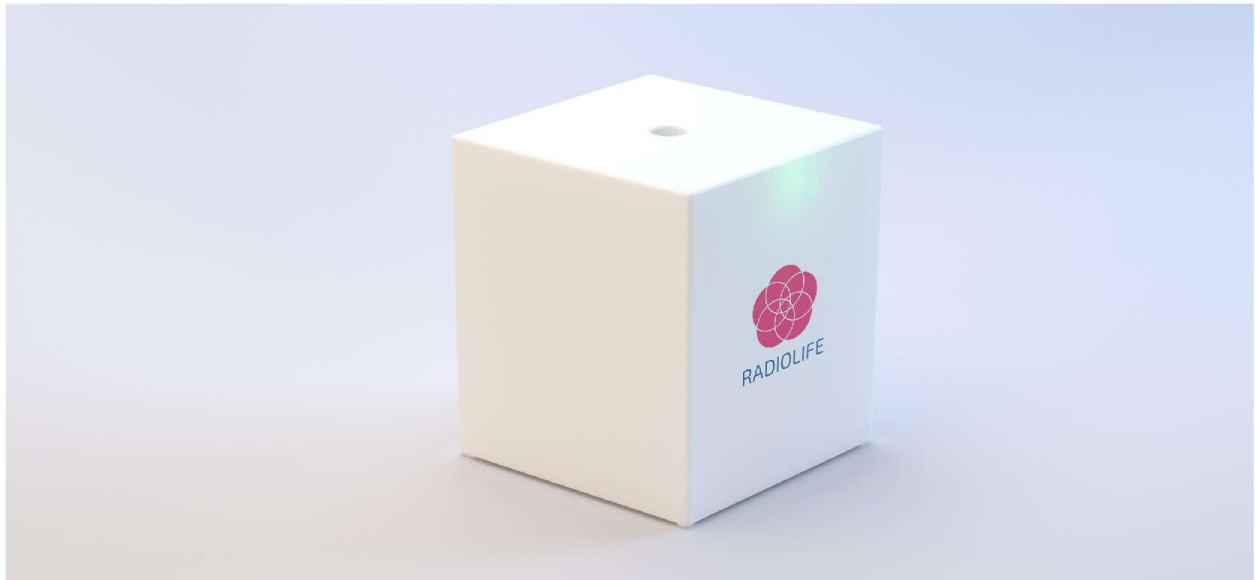


Cube Scan

In Vitro Tests for SARS-CoV-2 Detection





Cube Scan	3
Objectives	3
Scope	3
Clinical trials at Lacen	5
4.1 Data Collection	5
4.1.1 Sample acceptance	5
4.1.2 Cube Scan Operation	6
4.1.3 RT-PCR: amplification kit and equipments used at Lacen	6
4.2 Learning	7
4.2.1 Detection method	7
4.3 Analyses of the results	11
4.3.1 Analysis of positive judgment value	12
4.4 Performance characteristics	14
5. Conclusion	15
Anexo 1 - Results Lacen-ES specimens group	16
Anexo 2 - Sample CT ES-positive Lacen group	30



1. Cube Scan

Radiolife Co. (Radiolife) is developing an in vitro diagnostic instrument, Cube Scan, for the rapid qualitative detection of RNA from SARS-CoV-2 in saliva from asymptomatic and symptomatic individuals. Cube Scan is being designed with the intent to be used in non-laboratory testing environments, such as airports, business offices, schools, sporting events, restaurants, gyms, homes, etc. and to be operated by individuals who do not have laboratory or medical training.

Cube Scan's ability to detect the presence of viral RNA in an analyzed sample is based on the principle of energy absorption by magnetic resonance, associated with measurements of the magnetic reluctance. Cube Scan applies a variable electromagnetic field (radio waves in the GHz range) across a sample (i.e., saliva in a test tube). During this process, energy absorptions occur at different frequencies, resulting in an energy absorption "signature". The energy absorption "signature" of the sample is compared to "signatures" created by the positive and negative samples used in the learning method during the prototype development activities conducted by Radiolife. This analysis has demonstrated the potential to determine if the sample contains SARS-CoV-2 within about 10 seconds.

2. Objectives

This report presents the studies carried out during the development by Radiolife of proprietary technology, patent number (16 / 882,156), registered with the United States Patent and Trademark Office (USPTO). The technology is applied by Radiolife to the Cube Scan product, for the detection of several diseases. The focus of this report is to demonstrate its ability to detect Covid-19 (SARS-Cov-2) with efficiency greater than 80%, compared to the method RT-PCR, considered the gold standard for Covid-19 detection. The Cube Scan SARS-CoV-2 In Vitro Test was conducted at the Central Laboratory of Public Health of Espírito Santo (Lacen/ES).

3. Scope

The scope of this report comprises the tools and methodologies used to obtain a model capable of defining samples as positive or negative for SARS-Cov-2. The process followed the steps: "data collection", "learning" and "analysis of the results"

First, the data collection is the step in which nasal swab samples provided by Lacen/ES are processed to collect data regarding absorption and phase difference, in a wide spectrum of frequencies, for each sample provided, with a minimum of 1000 samples. Lacen/ES also requests for RT-PCR results, from the same samples processed by

Cube Scan. Radiolife requests to Lacen the RT-PCR results, from the same samples processed by Cube Scan. The samples are distinguished with barcode identification.

After the data collection, the learning phase begins. The results provided by the Lacen/ES were crossed with the data collected by Cube Scan. Subsequently, the learning algorithm was executed in a part of the data population to generate a prediction model. Finally, this prediction model was applied to the global data population.

The last step of the tests at Lacen was the comparative analysis of the results generated by the prediction model with the results obtained in the RT-PCR tests performed by Lacen/ES. Figure 1 provides an overview of the work that has been developed at Lacen, and it brings the Flowchart of Lacen and Radiolife. After that, each one of the steps are explained in the topics bellow.

Figure 1 - Flowchart of Lacen and Radiolife

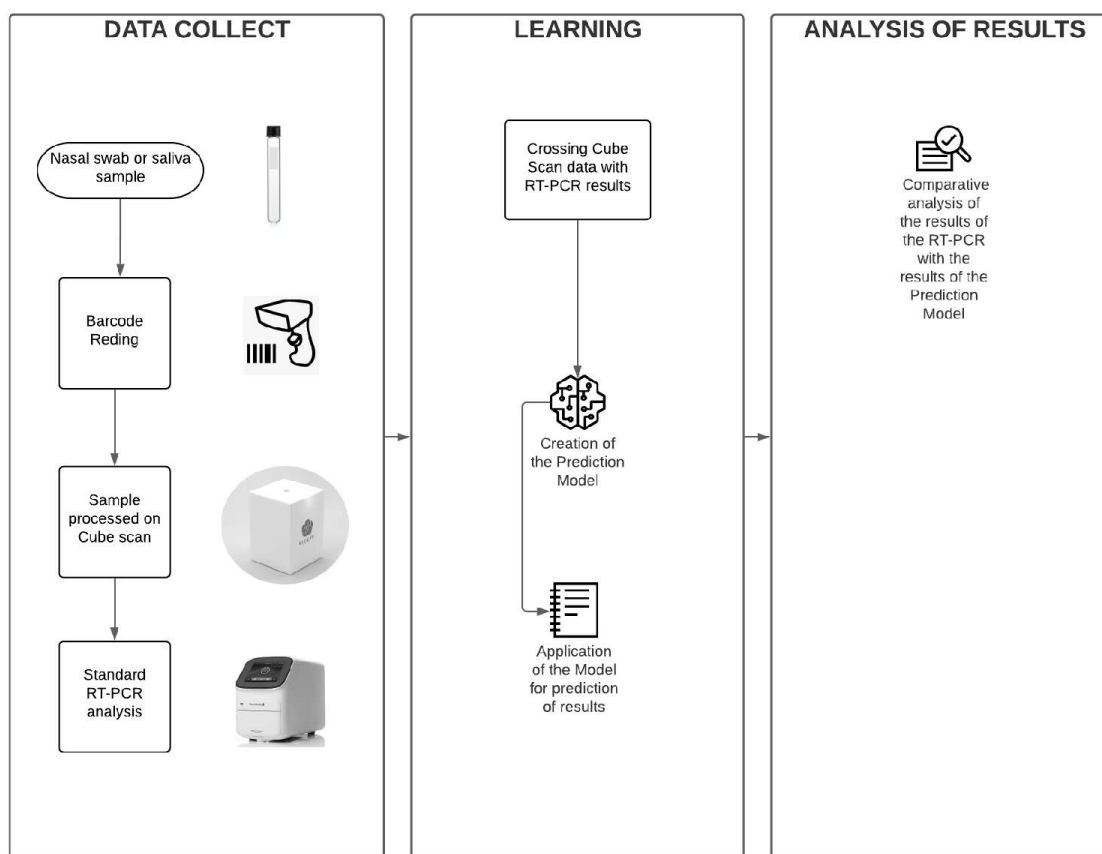


Fig. 1 - Flowchart of Lacen and Radiolife

4. Clinical trials at Lacen

The samples processed at Cube Scan were collected by health professionals in ES, Brazil, using the nasal swab. Of the 1357 examined, 134 had no symptoms, 1223 had some symptom related to Covid-19. The patients examined were between 12 and 100 years old. The Cube Scan, as well as the RT-PCR method used in the comparison, makes a qualitative analysis, and it is not possible to determine the individual's viral load.

4.1 Data Collection

All samples processed by the Cube Scan in this study were provided by Lacen/ES. Lacen is a government reference laboratory for analysis in the areas of epidemiological, sanitary and environmental surveillance. It is subordinated to the State Department of Health, integrated within the Brazilian System of Public Health Laboratories (Sislab).

Lacen receives samples from the entire state of Espírito Santo (ES), Brazil. The municipalities are responsible for the correct collection and storage of the sample, until its delivery to Lacen/ES. The nasal swab samples are collected by a health professional (doctor, nurse or laboratory technician), following the applicable good practices. The collected material is stored in a sterile plastic tube, containing viral transport media (VTM), which conserves the environment and inhibits the growth of contaminating microorganisms associated with flora.

The patient goes to the collection point of his city, where a record is made with the main data, among them the date of onset of symptoms (when they exist). At this point, a barcode is generated for the sample. A qualified health professional collects the sample by means of a nasal swab and identifies it with a label, containing: full name, date of birth, day and time of collection. This sample is then frozen at -70 ° C.

Usually the samples are collected during the day, frozen, and the next day they are sent to Lacen. The collected samples are transported to Lacen in thermal boxes containing ice.

4.1.1 Sample acceptance

4.1.1.1 Lacen criteria/RT-PCR criteria:



- a. Temperature below 15 ° C;
- b. Sample properly identified. The data in the sample must be identical to that of the examination request;

4.1.1.2 Cube Scan criteria:

- a. Samples may not be frozen, because the magnetic properties of water in the liquid and solid state change considerably, affecting the accuracy of the equipment. That's why Radiolife has chosen to carry out analyses only on samples in the liquid state.
- b. Collection tubes must have a diameter of less than 19mm.
- c. Sample volume must be greater than 2mL.

4.1.2 Cube Scan Operation

After accepting and coding the samples at Lacen's triage sector, the samples were supplied to Radiolife for processing. The test steps are as follows:

1. Reading the barcode;
2. Inserting the tube in the Cube Scan;
3. Reading data regarding absorption and phase difference, over a wide frequency spectrum. The first samples were processed for 17 minutes each. After refinement of the software, the processing time decreased to 13 minutes.

After being analyzed, the samples tested by Cube Scan followed Lacen's workflow, for diagnosis by the RT-PCR test.

4.1.3 RT-PCR: amplification kit and equipments used at Lacen

Lacen uses Real-time Polymerase Chain Reaction (RT-PCR) test to diagnose Covid-19. The detection system used is TaqMan in the TaqPath RT-PCR COVID-19 Kit (manufactured by Thermo Fisher Scientific, approved for use in the USA from October 9, 2020¹), with the application of the one-step RT-PCR assay.

A brief description of the TaqPath RT-PCR COVID-19 Kit taken from the instructions for use² provided by the manufacturer says: "TaqPath RT-PCR COVID-19 Kit contains the reagents and controls for a real-time reverse transcription polymerase chain reaction (RT-PCR) test intended for the qualitative detection of nucleic acid from SARS-CoV-2 in upper respiratory specimens (such as nasopharyngeal, oropharyngeal, nasal, and

¹ Available in: <https://www.fda.gov/media/136113/download>

² Available in: https://assets.thermofisher.com/TFS-Assets/LSG/manuals/MAN0019215_RevE_TaqPathCOVID-19_CE-IVD_RT-PCRKit_IFU.pdf



mid-turbinate swabs, and nasopharyngeal aspirate) and bronchoalveolar lavage (BAL) specimens from individuals suspected of COVID-19.”

The detection system used by the TaqPath RT-PCR COVID-19 Kit (TaqMan) for real-time PCR consists of fluorescence-labeled probes that use 5' nuclease activity of the Taq DNA polymerase. This test identifies the presence of SARS-CoV-2 RNA, by amplifying the nucleic acid target by polymerase chain reaction. The target amplification is detected when it occurs for the first time.

The Real Time PCR equipments used by the laboratory are: Applied Biosystems™ 7500 Fast Dx Real-Time PCR Instrument, QuantStudio™ 3 Real-Time PCR Instrument, QuantStudio™ 5 Real-Time PCR Instrument, QuantStudio™ 6 Pro Real-Time PCR Instrument. All manufactured by Thermo Fisher Scientific.

Radiolife asked Lacen for the results of the analyzed samples, which were identified by means of barcodes at the beginning of the process. The results provided by Lacen were used in the learning phase, that is explained below.

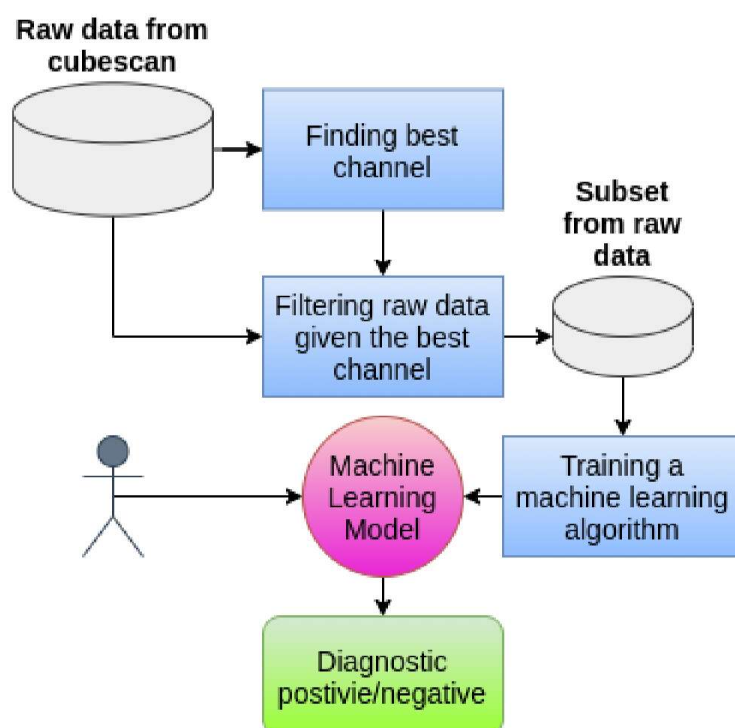
4.2 Learning

4.2.1 Detection method

Radiolife uses artificial intelligence techniques to detect positive and negative cases given a sample processed by Cube Scan. Artificial intelligence is the concept of simulating human thinking, where a machine will learn how to make decisions based on some kind of available data. In computer science, the specific area that explores this idea is named machine learning and it is considered a subset of artificial intelligence. This area involves many algorithms and statistical techniques, which enables machines to find patterns among data and understand its behaviors without being explicitly programmed.

Our proposal is illustrated in Figure 2, which consists of running a bunch of tests using different samples to generate a set of raw data and to train a learning-based algorithm. Each tested sample was provided by Lacen and previously analyzed by the RT-PCR procedure. Thus, the overall idea of our proposal is to take these labeled samples, i.e. samples infected by Covid or not, and put them into the Cube Scan in order to collect its electromagnetic information. In the end, a set of raw data will be produced consisting of different electromagnetic attributes for each sample.

Figure 2 - The proposed framework based on artificial intelligence to analyze a new sample.



A more detailed description of each step in the figure is given below.

Given a sample, Cube Scan processes the sample and returns the values of absorption of frequency and electromagnetic phase with respect to a predefined frequency channel. 250 different channel values were evaluated in order to better discriminate such attributes. Thus, performing this step for all samples will generate the **raw data from Cube Scan**.

From this raw data, it is possible to assess which channel better discriminates the samples into positives and negatives groups by measuring the separability among the data according to the difference between the electromagnetic attributes (see Figure 3 and Figure 4). This step of **finding the best channel** is performed as follows: the data is separated into positive and negative groups, then we calculate the difference of the



electromagnetic attributes between both groups. The channel that presents the greatest difference (i.e. greatest separability between positives and negatives) is selected.

Subsequently, we extract a subset containing these attributes by **filtering the raw data according to the best channel**. From this (sub)dataset, we are able to employ a machine learning algorithm to induce a model that predicts the diagnostic of samples analyzed by the cube.

More specifically, we **trained a random forest** to accomplish it, although we have assessed different algorithms, such as logit, decision trees, SVM, etc. This training phase will generate a learned **model**. This model is responsible for providing a **diagnostic given a new sample**.

Figure 3 - Average absorption in relation to all samples evaluated for each channel frequency. Red lines represent positive samples and blue lines represent negative samples.

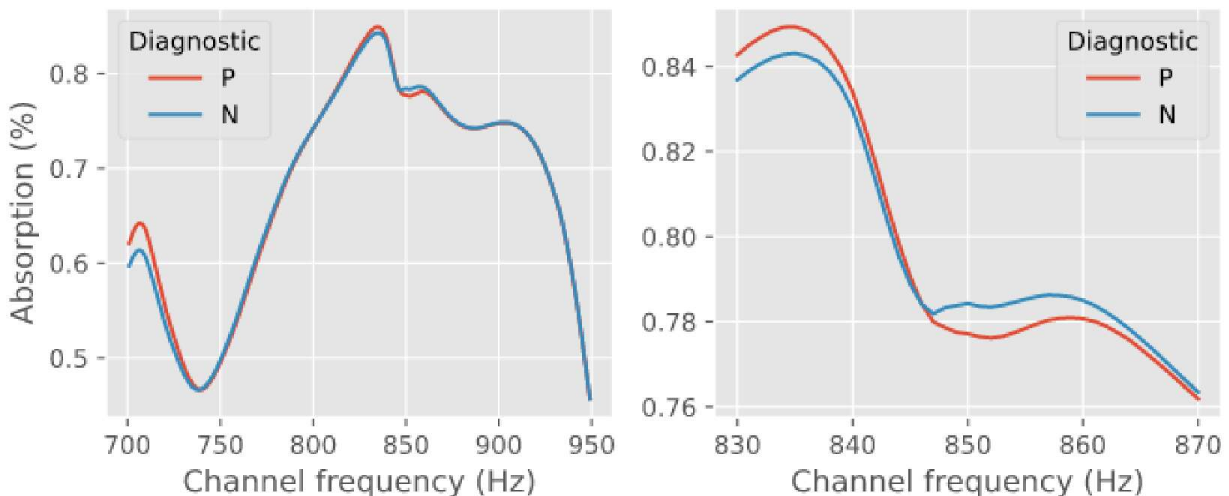
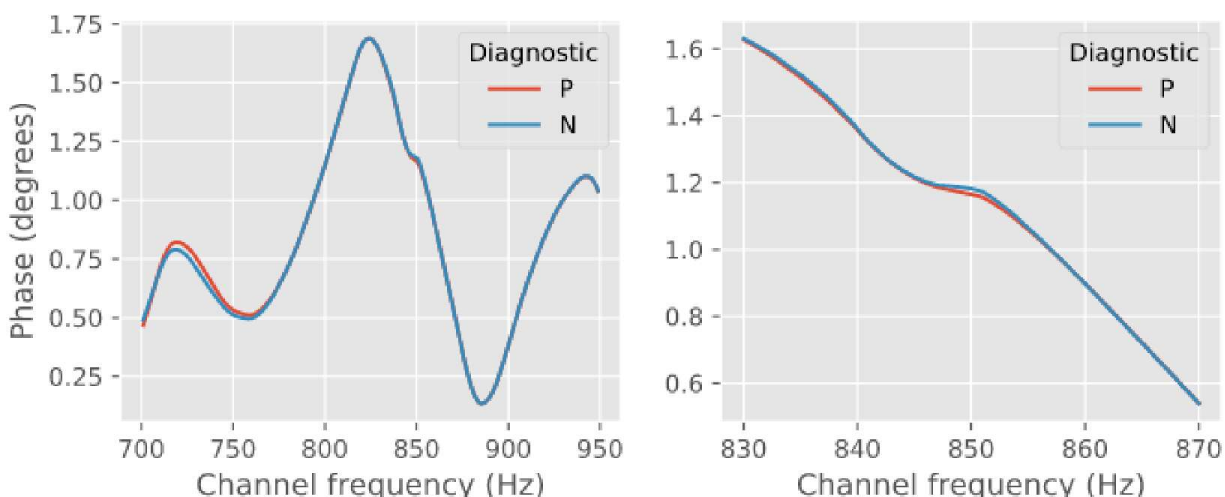


Figure 4 - Middle phase relative to all samples for each channel frequency. Red lines represent positive samples and blue lines represent negative samples.



In summary: machine learning algorithm will learn how to find patterns among the raw data collected and to generate a template. This model will be able to distinguish a new sample in positive or negative, given the electromagnetic information provided by Cube Scan.

Due to a small amount of data today, note that the ***predictive performances*** reported here were ***assessed only in the training set***. That means that the current version of the Cube Scan validates the learning algorithm through the same dataset that generates the model.

4.3 Analyses of the results

Lacen applies the RT-PCR test to diagnose covid-19. All tests performed by Radiolife were compared with results obtained using the amplification kit TaqPath RT-PCR COVID-19 Kit, which qualitatively detects the presence of the SARS-Cov-2 nucleic acid.

Radiolife conducted clinical trials at Lacen between 08/02/2021 and 16/03/2021. The company focused on the Cube Scan learning on samples with known results; that is, positive samples and negative samples, to promote the improvement of the software. The calibration step analyzed 1362 samples. Among these ones, 5 obtained an inconclusive result in the RT-PCR, therefore, we considered 1357 samples.

Table 2. Devices used by Lacen samples and samples by equipment

Equipments	7500	QS3	QS5	QS6	Total
Number of samples	242	242	683	190	1357

Table 3 - Agreement of Radiolife and Lacen-ES results

	CUBE SCAN POSITIVE	CUBE SCAN NEGATIVE	TOTAL
PCR Positive	490	3	493
PCR Negative	0	864	864
Total	490	867	1357

Positive agreement rate: 490/493 (99,39%)

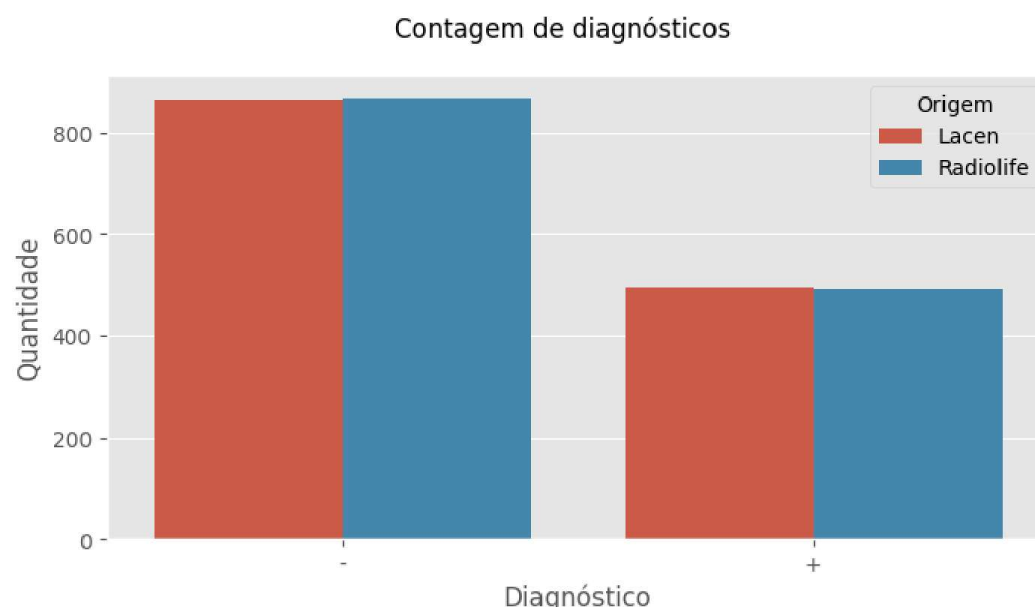
Negative agreement rate: 864/864 (100%)

Total coincidence rate: 1354/1357 (99.77%)

4.3.1 Analysis of positive judgment value

In order to assess the predictive performance of our proposal, we compared our results with the tests provided by Lacen. Thus, all samples tested in our Cube Scan were previously evaluated by the PCR. The graph below shows a comparison between both methods, regarding a total of 1357 samples. The Cube Scan classified 867 samples as negative, of these 864 were proven in RT-PCR. Were classified 867 samples as negative, On the other hand, for the remaining 493 positive cases from Lacen, 490 were classified as positive by the Cube Scan.

Graph 1 - Technology Cube Scan v. RT-PCR



We employed the sensitivity and specificity as evaluation metrics to better understand the general behaviour of our results. The former one measures the proportion of positive cases that were correctly identified, while the latter regards the proportion of negative cases correctly identified. Their respective formulas are given as follows:

Sensitivity = $TP / (TP + FN)$, where TP means true positive and FN false negative.

Specificity = $TN / (TN + FP)$, where TN means true negative and FP false positive.

See below the table its respective values:

Table 4 - Results of tests and the correctness of classifications.

Lacen / Radiolife	Negative	Positive
Negative	864 (TN)	0 (FP)
Positive	3 (FN)	490 (TP)

The final performance of each metric, achieved by the Cube Scan is given below:

Sensitivity= 0.9939

Specificity= 1.0

Among the analyses performed, Cube Scan demonstrated high performance in identifying the English variant (B.1.1.7) and the Brazilian variant (P.1).

Table 5 - Positive samples x variants

SARS-CoV-2	Samples analyzed	Detection efficiency
D614 / G614	400	99.50%
B.1.1.7 (English variant)	92	98.91%
P.1 (Brazilian variant)	1	100%

4.4 Performance characteristics

Regarding Cube Scan, the study was carried out with the Cube Scan prototype and the tests were not carried out on frozen samples. So, in order to be everything right for the Cube Scan test, collection, transport and storage must follow applicable good practices. Another limitation is that Cube Scan was designed for processing exams collected in a falcon 4 tube, and there were other kinds of tubes at Lacen during clinical trials.

Regarding RT-PCR, the test used to perform it was the TaqPath RT-PCR COVID- 19. This test has high specificity and sensitivity. This type of test should be performed between the third and tenth day of symptoms and it requires specific laboratory facilities and trained technicians.

Table 1. Limit of Detection TaqPath RT-PCR COVID- 19 Kit

Specimen type	Limit of Detection (GCE ³ /reaction)
Bronchoalveolar lavage	10 GCE/ reaction
Nasopharyngeal swab	10 GCE/ reaction

³ Genomic Copy Equivalents

5. Conclusion

Cube Scan used a wide frequency bandwidth to train classifiers and learn various metrics that will be applied to determine positive and negative tests. Its classification operates in three stages: the first one is deterministic and takes advantage of the differences in signal absorption between positive and negative samples for Sars-Cov-2, identifying the best frequencies for detecting the virus. Then, using sensor data, the information needed to be processed is extracted. Finally, a machine learning classifier is chosen to combine this information and interactively build decision trees, combining resources for the correct prediction of the result. The successful learning phase provided a 99.77% agreement between Lacen results and Cube Scan results.

In view of the validation study exposed in this document, and in line with Radiolife's goal of developing a product that is capable of offering innovative, fast and reliable diagnosis for Sars-Cov-2, Cube Scan does its job, especially when compared to the gold standard RT-PCR.

Anexo 1 - Results Lacen-ES specimens group

Sample	LACE N	Radiolife
1	-	-
2	-	-
3	+	+
4	+	+
5	+	+
6	-	-
7	-	-
8	-	-
9	+	+
10	-	-
11	-	-
12	-	-
13	-	-
14	-	-
15	-	-
16	-	-
17	+	+

Sample	LACE N	Radiolife
273		+
274		+
275	+	+
276	-	-
277	-	-
278	+	+
279	-	-
280	+	+
281	+	+
282	-	-
283	-	-
284	-	-
285	-	-
286	-	-
287	-	-
288	-	-
289	-	-

Sample	LACE N	Radiolife
545	-	-
546	-	-
547	+	+
548	+	+
549	-	-
550	-	-
551	-	-
552	-	-
553	+	+
554	+	-
555	-	-
556	+	+
557	+	+
558	-	-
559	-	-
560	+	+
561	-	-

Sample	LACE N	Radiolife
816	+	+
817	-	-
818	-	-
819	+	+
820	-	-
821	-	-
822	-	-
823	-	-
824	-	-
825	-	-
826	-	-
827	-	-
828	+	+
829	-	-
830	-	-
831	+	+
832	+	+

Sample	LACE N	Radiolife
1087	+	+
1088	-	-
1089	-	-
1090	+	+
1091	-	-
1092	-	-
1093	+	+
1094	-	-
1095	+	+
1096	-	-
1097	-	-
1098	+	+
1099	-	-
1100	-	-
1101	-	-
1102	+	+
1103	-	-

18	-	-
19	-	-
20	-	-
21	-	-
22	-	-
23	+	+
24	-	-
25	+	++
26	-	-
27	-	-
28	-	-
29	-	-
30	-	-
31	-	-
32	+	+
33	+	+
34	+	+
35	-	-
36	-	-
37	-	-

290	-	-
291	+	+
292	-	-
293	-	-
294	-	-
295	+	+
296	-	-
297	-	-
298	-	-
299	-	-
300	-	-
301	-	-
302	+	+
303	+	+
304	-	-
305	+	+
306	-	-
307	-	-
308	+	+
309	-	-

562	+	+
563	+	+
564	-	-
565	-	-
566	+	+
567	+	+
568	+	+
569	-	-
570	+	+
571	-	-
572	-	-
573	-	-
574	-	-
575	-	-
576	+	+
577	+	+
578	-	-
579	-	-
580	-	-
581	-	-

833	-	-
834	-	-
835	-	-
836	+	+
837	-	-
838	++	+
839	-	-
840	-	-
841	+	+
842	+	+
843	-	-
844	+	+
845	-	-
846	-	-
847	+	+
848	+	+
849	-	-
850	+	+
851	+	+
852	+	+

1104	+	+
1105	+	+
1106	+	+
1107	-	-
1108	-	-
1109	-	-
1110	+	+
1111	-	-
1112	-	-
1113	-	-
1114	-	-
1115	-	-
1116	-	-
1117	+	+
1118	-	-
1119	-	-
1120	-	-
1121	-	-
1122	-	-
1123	-	-

38	+	+
39	+	+
40	+	+
41	+	+
42	-	-
43	-	-
44	+	+
45	-	-
46	-	-
47	-	-
48	-	-
49	-	-
50	+	+
51	-	-
52	-	-
53	-	-
54	-	-
55	-	-
56	-	-
57	-	-

310	-	-
311	-	-
312	-	-
313	-	-
314	-	-
315	-	-
316	-	-
317	+	+
318	+	+
319	-	-
320	-	-
321	+	+
322	+	+
323	-	-
324	-	-
325	-	-
326	-	-
327	-	-
328	-	-
329	+	+

582	-	-
583	+	+
584	+	+
585	-	-
586	-	-
587	-	-
588	+	+
589	-	-
590	-	-
591	-	-
592	+	+
593	-	-
594	+	+
595	-	-
596		+
597		+
598	-	-
599	-	-
600	-	-
601	+	+

853	+	+
854	-	-
855	-	-
856	-	-
857	+	+
858	+	+
859	-	-
860	-	-
861	-	-
86 2	-	-
863	+	+
864	+	+
865	+	+
866	+	+
867	-	-
868	+	++
869	-	-
870	+	+
871	-	-
872	-	-

1124	-	-
1125	-	-
1126	+	+
1127	+	+
1128	+	+
1129	-	-
1130	+	+
1131	-	-
1132	-	-
1133	+	+
1134	-	-
1135	-	-
1136	-	-
1137	+	+
1 138	+	+
1139	-	-
1140	-	-
1141	-	-
1142	+	+
1143	+	+



RADIOLIFE

58	+	+
59	+	+
60	-	-
61	+	+
62	-	-
63	-	-
64	-	-
65	+	+
66	-	-
67	-	-
68	-	-
69	+	+
70	-	-
71	-	-
72	-	-
73	-	-
74	-	-
75	-	-
76	+	+
77	-	-

330	-	-
331	+	+
332	+	+
333	-	-
334	+	+
335	+	+
336	+	+
337	-	-
338	-	-
339	-	-
340	-	-
341	+	+
342	+	+
343	-	-
344	-	-
345	+	+
346	-	-
347	-	-
348	-	-
349	+	+

602	-	-
603	+	+
604	-	-
605	-	-
606	-	-
607	+	+
608	-	-
609	-	-
610	-	-
611	-	-
612	+	+
613	-	-
614	-	-
615	-	-
616	+	+
617	+	+
618	+	+
619	-	-
620	-	-
621	-	-

873	+	+
874	-	-
875	-	-
876	+	+
877	-	-
878	+	+
879	+	+
880	+	+
881	-	-
882	-	-
883	+	+
884	-	-
885	+	+
886	-	-
887	-	-
888	+	+
889	-	-
890	+	+
891	+	+
892	-	-

1144	-	-
1145	-	-
1146	-	-
1147	+	+
1148	-	-
1149	-	-
1150	-	-
1151	-	-
1152	+	+
1153	+	+
1154	-	-
1155	-	-
1156	-	-
1157	-	-
1158	-	-
1159	-	-
1160	+	+
1161	-	-
1162	-	-
1163	-	-



RADIOLIFE

78	-	-
79	+	+
80	+	+
81	-	-
82	-	-
83	-	-
84	+	+
85	-	-
86	-	-
87	-	-
88	+	+
89	+	+
90	-	-
91	-	-
92	-	-
93	-	-
94	-	-
95	+	+
96	+	+
97	-	-

350	-	-
351	+	+
352	-	-
353	+	+
354	-	-
355	-	-
356	+	+
357	+	+
358	+	+
359	+	+
360	+	+
361	-	-
362	-	-
363	+	+
364	+	+
365	+	+
366	-	-
367	-	-
368	+	+
369	-	-

622	+	+
623	-	-
624	-	-
625	-	-
626	+	+
627	-	-
628	-	-
629	+	+
630	-	-
631	-	-
632	-	-
633	+	+
634	+	+
635	+	+
636	+	+
637	+	+
638	-	-
639	-	-
640	-	-
641	-	-

893	-	-
894	+	+
895	+	+
896	+	+
897	+	+
898	-	-
899	-	-
900	-	-
901	-	-
902	+	+
903	+	+
904	+	+
905	+	+
906	-	-
907	-	-
908	-	-
909	-	-
910	-	-
911	+	+
91 2	-	-

1164	+	+
1165	-	-
1166	+	+
1167	+	+
1168	-	-
1169	+	+
1170	-	-
1171	+	+
1172	-	-
1173	+	+
1174	+	+
1175	-	-
1176	-	-
1177	-	-
1178	-	-
1179	-	-
1180	-	-
1181	-	-
1182	-	-
1183	-	-



RADIOLIFE

98	+	+
99	+	+
100	+	+
101	-	-
102	-	-
103	+	+
104	+	+
105	-	-
106	-	-
107	+	+
108	+	+
109	+	+
110	-	-
111	+	+
112	+	+
113	+	+
114	+	+
115	-	-
116	-	-
117	+	+

370	-	-
371	+	+
372	+	+
373	+	+
374	-	-
375	-	-
376	+	+
377	-	-
378	+	+
379	-	-
380	+	+
381	-	-
382	-	-
383	-	-
384	-	-
385	-	-
386	-	-
387	-	-
388	-	-
389	-	-

642	+	+
643	-	-
644	-	-
645	+	+
646	-	-
647	+	++
648	+	+
649	-	-
650	+	+
651	-	-
652	+	+
653	+	+
654	-	-
655	+	+
656	-	-
657	+	+
658	-	-
659	+	+
660	+	+
661	+	+

913	+	+
914	-	-
915	+	+
916	-	-
917	-	-
918	+	+
919	-	-
920	+	+
921	-	-
922	-	-
923	+	+
924	-	-
925	-	-
926	-	-
927	-	-
928	+	+
929	-	-
930	-	-
931	-	-
932	+	+

1184	-	-
1185	+	+
1186	-	-
1187	-	-
1188	-	-
1189	-	-
1190	-	-
1191	+	+
1192	-	-
1193	-	-
1194	-	-
1195	-	-
1196	+	+
1197	-	-
1198	-	-
1199	-	-
1200	-	-
1201	-	-
1202	-	-
1203	+	+

118	-	-
119	-	-
120	-	-
121	-	-
122	+	+
123	-	-
124	+	+
125	-	-
126	-	-
127	-	-
128	-	-
129	-	-
130	-	-
131	+	+
132	-	-
133	+	+
134	-	-
135	+	+
136	-	-
137	-	-

390	-	-
391	-	-
392	-	-
393	-	-
394	-	-
395	+	+
396	+	+
397	+	+
398	+	+
399	-	-
400	+	+
401	-	-
402	-	-
403	+	+
404	-	-
405	-	-
406	-	-
407	-	-
408	+	+
409	-	-

662	+	+
663	-	-
664	-	-
665	+	+
666	-	-
667	-	-
668	-	-
669	+	+
670	-	-
671	-	-
672	-	-
673	-	-
674	-	-
675	+	+
676	+	+
677	+	+
678	-	-
679	+	+
680	-	-
681	-	-

933	+	+
934	+	+
935	-	-
936	+	+
937	-	-
938	+	+
939	-	-
940	-	-
941	-	-
942	+	+
943	+	+
944	-	-
945	+	+
946	-	-
947	-	-
948	-	-
949	-	-
950	-	-
951	+	+
952	-	-

1204	-	-
1205	+	+
1206	+	+
1207	+	+
1208	+	+
1209	-	-
1210	-	-
1211	+	+
1212	-	-
1213	-	-
1214	-	-
1215	-	-
1216	-	-
1217	+	+
1218	-	-
1219	+	+
1220	+	+
1221	-	-
1222	+	+
1223	+	+

138	-	-
139	+	+
140	+	+
141	-	-
142	-	-
143	+	+
144	-	-
145	-	-
146	+	+
147	+	+
148	+	+
149	-	-
150	+	+
151	-	-
152	+	+
153	-	-
154	-	-
155	-	-
156	-	-
157	-	-

410	-	-
411	-	-
412	+	+
413	+	+
414	-	-
415	+	+
416	-	-
417	+	+
418	-	-
419	+	+
420	+	+
421	-	-
422	-	-
423	-	-
424	-	-
425	-	-
426	-	-
427	-	-
428	-	-
429	+	+

682	-	-
683	+	+
684	+	+
685	+	+
686	+	+
687	+	+
688	-	-
689	+	+
690	-	-
691	-	-
692	-	-
693	-	-
694	-	-
695	-	-
696	-	-
697	+	+
698	-	-
699	-	-
700	+	+
701	-	-

953	+	+
954	-	-
955	-	-
956	+	+
957	-	-
958	-	-
959	+	+
960	-	-
961	-	-
962	-	-
963	-	-
964	+	+
965	+	+
966	-	-
967	-	-
968	-	-
969	-	-
970	-	-
971	-	-
972	-	-

1224	+	+
1225	-	-
1226	+	+
1227	-	-
1228	-	-
1229	+	+
1230	-	-
1231	-	-
1232	+	+
1233	+	+
1234	-	-
1235	-	-
1236	-	-
1237	+	+
1238	-	-
1239	+	+
1240	-	-
1241	+	+
1242	+	+
1243	-	-

158	+	+
159	-	-
160	-	-
161	-	-
162	-	-
163	+	+
164	-	-
165	+	+
166	-	-
167	+	+
168	-	-
169	+	+
170	+	+
171	+	+
172	-	-
173	+	+
174	+	+
175	-	-
176	+	+
177	-	-

430	-	-
431	+	+
432	-	-
433	-	-
434	-	-
435	-	-
436	+	+
437	-	-
438	-	-
439	-	-
440	-	-
441	+	+
442	-	-
443	+	+
444	-	-
445	-	-
446	-	-
447	-	-
448	-	-
449	+	+

702	-	-
703	+	+
704	+	+
705	-	-
706	-	-
707	+	+
708	-	-
709	+	+
710	+	+
711	-	-
712	+	+
713	+	+
714	+	+
715	-	-
716	-	-
717	-	-
718	-	-
719	-	-
720	+	+
721	-	-

973	-	-
974	-	-
975	-	-
976	-	-
977	-	-
978	-	-
979	-	-
980	-	-
981	+	+
982	-	-
983	-	-
984	-	-
985	-	-
986	+	+
987	-	-
988	+	+
989	-	-
990	-	-
991	-	-
992	+	+

1244	+	+
1245	-	-
1246	+	+
1247	+	+
1248	+	+
1249	-	-
1250	-	-
1251	+	+
1252	+	+
1253	-	-
1254	-	-
1255	+	+
125 6	-	-
1257	+	-
1258	-	-
1259	-	-
1260	+	+
1261	+	+
1262	-	-
1263	+	+

178	-	-
179	-	-
180	-	-
181	-	-
182	-	-
183	-	-
184	+	+
185	+	+
186	-	-
187	-	-
188	+	+
189	+	+
190	-	-
191	-	-
192	+	+
193	-	-
194	+	+
195	-	-
196	-	-
197	-	-

450	-	-
451	-	-
452	+	+
453	-	-
454	+	+
455	-	-
456	+	+
457	-	-
458	-	-
459	-	-
460	+	+
461	-	-
462	+	+
463	-	-
464	-	-
465	-	-
466	-	-
467	+	+
468	-	-
469	-	-

722	+	+
723	-	-
724	-	-
725	+	+
726	-	-
727	-	-
728	-	-
729	-	-
730	-	-
731	-	-
732	+	+
733	+	+
734	-	-
735	-	-
736	-	-
737	-	-
738	-	-
739	-	-
740	-	-
741	+	+

993	+	+
994	-	-
995	-	-
996	-	-
997	-	-
998	-	-
999	-	-
1000	-	-
1001	-	-
1002	-	-
1003	+	+
1004	-	-
1005	+	+
1006	-	-
1007	-	-
1008	+	+
1009	+	+
1010	+	+
1011	+	+
1012	+	+

1264	+	+
1265	+	+
1266	-	-
1267	+	+
1268	+	+
1269	-	-
1270	-	-
1271	-	-
1272	+	+
1273	-	-
1274	+	+
1275	-	-
1276	+	+
1277	+	+
1278	-	-
1279	-	-
1280	-	-
1281	+	+
1282	-	-
1283	-	-



RADIOLIFE

198	-	-
199	+	+
200	-	-
201	-	-
202	-	-
203	-	-
204	-	-
205	-	-
206	-	-
207	-	-
208	-	-
209	-	-
210	-	-
211	+	+
212	-	-
213	+	+
214	-	-
215	-	-
216	-	-
217	-	-

470	-	-
471	-	-
472	+	+
473	-	-
474	+	+
475	-	-
476	+	+
477	-	-
478	-	-
479	-	-
480	-	-
481	+	+
482	+	+
483	-	-
484	-	-
485	-	-
486	+	+
487	-	-
488	-	-
489	-	-

742	+	+
743	-	-
744	-	-
745	-	-
746	+	+
747	-	-
748	-	-
749	+	+
750	+	+
751	-	-
752	-	-
753	-	-
754	-	-
755	-	-
756	+	+
757	-	-
758	-	-
759	-	-
760	+	+
761	+	+

1013	+	+
1014	-	-
1015	-	-
1016	-	-
1017	-	-
1018	+	+
1019	-	-
1020	+	+
1021	-	-
1022	-	-
1023	-	-
1024	-	-
1025	+	+
1026	+	+
1027	-	-
1028	-	-
1029	-	-
1030	+	+
1031	-	-
1032	-	-

1284	-	-
1285	-	-
1286	-	-
1287	-	-
1288	-	-
1289	+	+
1290	-	-
1291	-	-
1292	-	-
1293	-	-
1294	+	+
1295	-	-
1296	-	-
1297	+	+
1298	+	+
1299	-	-
1300	+	+
1301	+	+
1302	-	-
1303	-	-



RADIOLIFE

218	+	+
219	-	-
220	-	-
221	-	-
222	-	-
223	-	-
224	-	-
225	+	+
226	-	-
227	-	-
228	-	-
229	-	-
230	-	-
231	-	-
232	+	+
233	+	+
234	-	-
235	+	+
236	-	-
237	+	+

490	+	+
491	+	+
492	-	-
493	-	-
494	+	+
495	+	+
496	-	-
497	-	-
498	+	+
499	-	-
500	-	-
501	-	-
502	-	-
503	-	-
504	-	-
505	+	+
506	-	-
507	-	-
508	-	-
509	-	-

762	+	+
763	-	-
764	+	+
765	-	-
766	-	-
767	+	+
768	+	+
769	-	-
770	-	-
771	-	-
772	-	-
773	-	-
774	-	-
775	-	-
776	-	-
777	+	+
778	-	-
779	+	+
780	+	+
781	+	+

1033	-	-
1034	-	-
1035	-	-
1036	-	-
1037	-	-
1038	-	-
1039	-	-
1040	+	+
1041	+	+
1042	-	-
1043	-	-
1044	-	-
1045	+	+
1046	-	-
1047	-	-
1048	-	-
1049	-	-
1050	-	-
1051	+	+
1052	-	-

1304	-	-
1305	+	+
1306	+	+
1307	+	+
1308	+	+
1309	-	-
1310	+	+
1311	+	+
1312	-	-
1313	+	+
1314	-	-
1315	-	-
1316	-	-
1317	-	-
1318	-	-
1319	+	+
1320	+	+
1321	-	-
1322	+	+
1323	+	+



RADIOLIFE

238	-	-
239	+	+
240	-	-
241	+	+
242	-	-
243	+	+
244	-	-
245	-	-
246	-	-
247	+	+
248	-	-
249	-	-
250	-	-
251	-	-
252	-	-
253	+	+
254	+	+
255	-	-
256	-	-
257	-	-

510	-	-
511	-	-
512	-	-
513	-	-
514	-	-
515	-	-
516	-	-
517	-	-
518	+	+
519	+	+
520	+	+
521	+	+
522	-	-
523	-	-
524	-	-
525	+	+
526	-	-
527	-	-
528	-	-
529	+	+

782	-	-
783	-	-
784	-	-
785	-	-
786	+	+
787	-	-
788	+	+
789	+	+
790	+	+
791	-	-
792	-	-
793	+	+
794	-	-
795	-	-
796	-	-
797	-	-
798	-	-
799	-	-
800	-	-
801	-	-

1053	+	+
1054	+	+
1055	+	+
1056	-	-
10 57	+	+
1058	-	-
1059	+	+
1060	-	-
1061	+	+
1062	-	-
1063	+	+
1064	+	+
1065	+	+
1066	-	-
1067	-	-
1068	+	+
1069	-	-
1070	-	-
1071	-	-
1072	-	-

1324	-	-
1325	+	-
1326	+	+
1327	-	-
1328	-	-
1329	-	-
1330	-	-
1331	-	-
1332	-	-
1333	+	+
1334	+	+
1335	-	-
1336	-	-
1337	-	-
1338	-	-
1339	-	-
1340	-	-
1341	-	-
1342	+	+
1343	-	-

258	-	-
259	-	-
260	-	-
261	+	+
262	-	-
263	+	+
264	+	+
265	-	-
266	-	-
267	+	+
268	+	+
269	+	+
270	+	+
271	+	+

530	-	-
531	+	+
532	+	+
533	-	-
534	-	-
535	-	-
536	+	+
537	-	-
538	+	+
539	-	-
540	-	-
541	+	+
542	+	+
543	+	+

802	-	-
803	-	-
804	+	+
805	-	-
806	+	+
807	-	-
808	-	-
809	-	-
810	+	+
811	-	-
812	-	-
813	+	+
814	+	+
815	+	+

1073	+	+
1074	-	-
1075	+	+
1076	+	+
1077	-	-
1078	+	+
1079	-	-
1080	-	-
1081	+	+
1082	-	-
1083	-	-
1084	-	-
1085	-	-
1086	-	-

1344	-	-
1345	-	-
1346	+	+
1347	-	-
1348	-	-
1349	+	+
1350	+	+
1351	+	+
1352	-	-
1353	+	+
1354	-	-
1355	-	-
1356	-	-
1357	-	-

Anexo 2 - Sample CT ES-positive Lacen group

Sample	LACEN	Radiolife	S	ORF	N
3	+	+	30,21	30,75	29,77
4	+	+	29.02	29.29	28.63
5	+	+	31 , 24	30,03	31,02
9	+	+	28,98	28	28,42
17	+	+	24.18	21.82	21.4
23	+	+	26 , 64	25.75	26.63
25	+	+	21.62	21.09	20.24
32	+	+	20.78	19.84	19.22
33	+	+	18.96	18.03	18.42
34	+	+	27, 02	26.3	26.65
38	+	-	16.66	16.23	16.14
39	+	+	14.01	13.96	13.99
40	+	+	-	16,01	15,73
41	+	+	-	23.61	23.53
44	+	+	16, 57	15.9	16.95
50	+	+	24.09	22.88	23.15
58	+	+	14.59	14.39	14,26

Sample	LACEN	Radiolife	S	ORF	C
476	+	+	26,66	25,61	26,97
481	+	+	14, 81	14.63	14.85
482	+	+	25,2	19,27	18,76
486	+	+	15,82	15, 43	15.62
490	+	+	23.32	22.613	22.561
491	+	+	-	16.29	16.05
494	+	+	22.55	21 , 44	22.91
495	+	+	28, 45	27.95	28.78
498	+	+	19, 11	18.06	18.17
505	+	+	23.82	23.6	23.24
518	+	+	15.56	15 , 2	15.35
519	+	+	17.92	17.54	17.76
520	+	+	18,88	18,43	16,76
521	+	+	19.97	19.49	19.84
525	+	+	-	27.4	26.75
529	+	+	25.22	23.16	22, 86
531	+	+	18,37	15,95	16,24

Sample	LACEN	Radiolife	S	ORF	C
	+	+	26.51	25.71	25.86
902	+	+	19.13	20.43	19.59
903	+	+	21,75	21,11	21,67
904	+	+	-	27.74	27.81
905	+	+	16.39	15.52	15.2
911	+	+	17.41	17.66	16.46
913	+	+	19.83	19.24	18.78
915	+	+	1 8.55	27.27	17.79
918	+	+	23.73	22.64	22.95
920	+	+	17.11	15, 81	16.45
923	+	+	17.53	16.7	17.24
928	+	+	21.65	20.78	23.02
932	+	+	15,45	14,73	15,76
933	+	+	22.77	22.03	24.15
934	+	+	-	16.76	16.69
936	+	+	22.89	22.37	23.84
938	+	+	17,28	16,23	16,96

59	+	+	15,58	15,28	15,3
61	+	+	16.64	16.06	16.23
65	+	+	25.661	25.382	25.475
69	+	+	20.858	19.986	20.229
76	+	+	-	14.81	14.61
79	+	+	27.38	27.02	25.62
80	+	-	26.4	25, 8	25.9
84	+	+	21.84	21.57	22.63
88			-	18.17	17.52
89	+	+	20, 66	19.59	20.51
95	+	+	27.33	27.27	26.68
96	+	+	16.16	15, 67	14.96
98	+	+	20.15	19.52	18.56
99	+	+	20.52	19.74	18.95
100	+	+	18.08	17.56	18.56
103	+	+	-	18.17	17.6
104	+	+	-	21.78	21.82
107	+	+	15,64	14,6	14,92
108	+	+	-	31.6	33.9

532	+	+	-	15,71	15,54
536	+	+	15, 06	14.96	14.78
538	+	+	24.98	23.47	24.44
541	+	+	18.97	17.49	18.42
542	+	+	26.86	25.74	26, 76
543	+	+	15, 46	14.96	14.85
547	+	+	15.45	14.88	15.58
548	+	+	24.69	24.57	26, 54
553	+	+	-	14.36	14.83
554	+	-	28.25	28.23	31.84
556	+	+	20.87	20.38	18.38
557	+	+	17.86	17.49	15.69
560	+	+	17.2	15.33	15.66
562	+	+	25.15	23.13	23.45
563	+	+	26.52	23.89	24.46
566	+	+	-	17.91	17.26
567	+	+	-	17,56	17,33
568	+	+	20.3	19.6	20.45
570	+	+	-	15.16	15.16

942	+	+	19.18	17.32	17.9
943	+	+	18.76	16.99	17.11
945	+	+	19.3	17.78	18.72
951	+	+	18.08	16 79,	17.53
953	+	+	-	2 2.35	21.24
956	+	+	23.56	23.71	24.34
959	+	+	17.07	16, 47	16.84
964	+	+	28.14	27.73	26.99
965	+	+	25.08	24.72	25.15
981	+	+	14, 64	14.81	14.61
986	+	+	30.08	29.58	30.56
988	+	+	20.23	20, 35	19.58
992	+	+	-	16.47	15.98
993	+	+	-	19.46	18.26
1003	+	+	17, 09	16.18	16.62
1005		+	22.95	21.61	21.49
1008	+	+	18,76	18,27	20,01
1009	+	+	16, 22	15.77	16.4
1010	+	+	21.89	21.59	22.33

109	+	+	26.87	24.61	24.51
111	+	+	18.65	17.12	17.64
112	+	+	16.12	15.02	15.21
113	+	+	-	32.11	31.8
114	+	+	-	32.17	31.37
117	+	+	27.83	28.63	27.56
122	+	+	30.53	28.86	29.1
124	+	+	16.49	15.85	16, 13
131	+	+	-	27.38	31.73
133	+	+	23.37	22.9	24, 53
135	+	+	22.2	21.68	23,
139		+	25.72	23.8	24.27
140	+	+	18.2	16.19	16.52
143	+	+	-	22.56	21.3
146	+	+	17.97	16.37	16.39
147		+	17.84	17	18.53
148		+	-	20.68	19
150	+	+	-	15.7	16
152	+	+	19.23	18.43	19.69

576	+	+	18.21	16.44	16.91
577	+	+	28.51	27.46	26.15
583	+	+	*	*	35.93
584	+	+	22.51	22.13	21.84
588	+	+	23, 14	23.89	23.53
592	+	+	18.67	18.81	18.11
594	+	+	15.33	14.71	14.5
596	+	+	20.49	19.12	19.36
597	+	+	16.24	14.88	15.22
601	+	+	19.67	19.16	20
93 603		+	-	27.56	26.62
607		+	-	19.68	19.36
612	+	+	19.26	18.94	19.03
616	+	+	-	31.38	30.94
617	+	+	19.27	18.48	19.4
618	+	+	-	20.29	20.74
94 622		+	17.6	16.96	18.28
626	+	+	19.09	17.65	19.23
629	+	+	-	18.57	18

1011	+	+	-	20.24	19.61
1012	+	+	-	26.06	25.17
1013	+	+	-	20.86	20, 34
1018	+	+	24.85	23.61	24.91
1020	+	+	-	15.06	14.63
1025	+	+	25.87	25.34	26.27
1.026	+	+	20.25	19.56	19.13
1030	+	+	17.7	17.2 17	228
1040	+	+	23, 49	22.84	23.78
1041	+	+	-	19.51	19.49
1045		+	28.31	27.93	27.98
1051	+	+	33 62	33.36	33.52
1053	+	+	32, 94	30.53	30.41
1054	+	+	-	31.81	32.6
1055	+	+	33.49	31, 52	32.44
1057	+	+	21.99	20.99	20.31
1059	+	+	30.04	29.07	27.45
1061	+	+	18.7	18.13	18, 13
1063	+	+	23.85	23.46	21.55



RADIOLIFE

158	+	+	-	23.61	24.68
163	+	+		15.72	15.03
165	+	+		28,92	28,41
167	+	+		16.11	15.36
169	+	+	-	23.6	23.24
170	+	+	-	18.97	18.65
171	+	+	-	21.58	21.56
173	+	+	-	32.76	32.61
174	+	+		14.99	14.99
176	+	+		18	17.78
184	+	+		24.63	24.1
185	+	+	-	32.67	31.07
188	+	+		24.31	24.2
189	+	+		22.41	19.83
192	+	+		19.33	18.39
194	+	+		16.26	16.59
199	+	+		14.58	14.34
211	+	+		19.8	18.31
213	+	+		19,97	18,75

633	+	+		31,81	26,23
634	+	+	-	17,73	17,26
635	+	+		16,65	15,56
636	+	+		23,05	21,69
637	+	+		22,09	20,24
642	+	+		21.9	21.45
645	+	+		17.57	16.96
647	+	+		31.07	28.77
648	+	+	-	20.57	18.94
650	+	+		28.02	27.18
652	+	+		24,87	23,94
653	+	+		30,27	28,76
655	+	+		17,97	16,28
657	+	+	-	17,92	18,82
659	+	+		20,54	20,83
660	+	+		25,26	26,33
661	+	+		27,3	26,89
662	+	+		14,62	14,5
665	+	+		18,41	18,22

1064	+	+		18,88	18,13
1065	+	+		27,33	26,95
1068	+	+		18,27	16,78
1073	+	+		19,92	17,45
1075	+	+		18,14	16,62
1076	+	+		24,32	22,85
1078	+	+		29	27,65
1081	+	+		22,82	23,54
1087	+	+		23,94	23,73
1090	+	+	-	31,38	28,65
1093	+	+		26,2	25,79
1095	+	+		19,55	18,08
1098	+	+		23,36	22,43
1102	+	+		18,97	16,71
1104	+	+		29,5	27,29
1105	+	+		25,73	23,34
1106	+	+		18,71	16,55
1110	+	+	-	35,82	35,31
1117	+	+		20,98	20,35



RADIOLIFE

218	+	+	-	17,01	16,21
225	+	+		16.06	15.61
232	+	+	-	35.24	33.29
233	+	+		20.9	21.49
235	+	+		16,67	15,28
237	+	+		17,01	15,54
239	+	+		21,61	20,55
241	+	+		20,26	20,23
243	+	+		22,52	22,35
247	+	+		17,17	17,1
253	+	+	-	25,85	25,48
254	+	+		20,67	19,96
261	+	+		31,74	28,46
263	+	+		22,38	21,27
264	+	+		15,69	15
267	+	+		14,7	14,42
268	+	+		26,46	26,09
269	+	+		18,56	18,14
270	+	+		19,97	19,56

669	+	+		17,05	17,52
675	+	+		21,73	24,07
676	+	+		24,42	26,45
677	+	+		20,17	23,48
679	+	+		25,2	25,59
683	+	+		17,16	14,97
684	+	+	-	16,24	17,85
685	+	+		17,5	17,63
686	+	+	-	14,93	15,45
687	+	+		17,44	17,06
689	+	+		21,41	20,08
697	+	+	-	27,32	27,76
700	+	+	-	36,52	36,77
703	+	+		18,9	19,2
704	+	+		26,7	26,18
707	+	+		21,85	20,91
709	+	+		29,27	29,14
710	+	+		20,56	20,26
712	+	+		19	18,74

1126	+	+		22.18	21.28
1127	+	+		30.47	30.1
1128	+	+		20.21	18.4
1130	+	+		23.69	22.54
1133	+	+	-	26.41	25.34
1137	+	+		18.66	17.28
1138	+	+		18.69	17.47
1142	+	+		17.51	17.14
1143	+	+		22.9	22.69
1147	+	+		21.85	19.1
1152	+	+		27.97	27.73
1153	+	+		22.37	21.73
1160	+	+	-	20.75	20.33
1164	+	+		30,06	25,97
1166	+	+	-	18,57	18
1167	+	+		23,61	22,34
1169	+	+	-	21,68	21,25
1171	+	+		20.51	19.18
1173	+	+		22.81	21.33

Apr 6, 2021



RADIOLIFE

271	+	+	-	19,57	19,89
272	+	+	-	18,02	17,63
273	+	+	21,61	21	21,39
274	+	+	18,35	17,58	19,39
275	+	+	20,48	18,88	19,61
278	+	+	15,39	15,08	15,08
280	+	+	21,23	20,61	20,78
281	+	+	-	17,59	17,2
291	+	+	27,34	25,03	27,07
295	+	+	33,772	31,328	30,906
302	+	+	28,68	27,9	27,87
303	+	+	-	14,8	14,61
305	+	+	-	30,15	30,41
308	+	+	20,72	18,93	21
317	+	+	27,83	26,95	28,19
318	+	+	17,02	15,99	15,93
321	+	+	22,3	21,97	21,74
322	+	+	19,24	18,39	17,12
329	+	+	-	21,9	21,38

713	+	+	21,02	19,41	20,95
714	+	+	26,2	26,92	25,14
720	+	+	17,49	18,17	17,41
722	+	+	33,43	31,47	33,78
725	+	+	-	31,6	32,1
732	+	+	23,7	24,9	23,3
733	+	+	22,7	22,5	22,1
741	+	+	21,15	22,87	21,65
742	+	+	20,14	21,94	20,94
746	+	+	18,54	17,83	17,2
749	+	+	28,57	27,93	28,78
750	+	+	22,51	21,3	21,74
756	+	+	25,03	24,1	24,7
760	+	+	29,11	27,63	27,98
761	+	+	28,79	27,42	28,05
762	+	+	22,63	21,44	21,16
764	+	+	29,56	29,1	28,83
767	+	+	28,86	27,38	27,31
768	+	+	29,21	27,43	29,75

1174	+	+	21,11	20,56	20,74
1185	+	+	25,17	23,57	24,49
1191	+	+	17,62	17,42	17,31
1196	+	+	30,1	29,32	29,23
1203	+	+	22,05	21,07	21,6
1205	+	+	19,88	18,88	18,84
1206	+	+	-	14,91	15,08
1207	+	+	-	15,11	15,34
1208	+	+	-	15,94	16,06
1211	+	+	18,58	17,9	18,83
1217	+	+	17,21	15,85	16,69
1219	+	+	-	19,4	18,21
1220	+	+	18,14	17,57	18,1
1222	+	+	16,36	15,97	16,59
1223	+	+	16,95	16,49	16,37
1224	+	+	19,62	18,94	19,18
1226	+	+	20,153	19,22	20,124
1229	+	+	28,096	27,407	27,828
1232	+	+	18,9	18,63	17,65

Apr 6, 2021

331	+	+	-	14,27	14
332	+	+		19,98	18,38
334	+	+		28,53	26,48
335	+	+		20,09	17,57
336	+	+	-	22,58	22,31
341	+	+		15,82	15,6
342	+	+		14,7	14,58
345	+	+		27,73	26,63
349	+	+	-	16,31	15,71
351	+	+		18,49	17,78
353	+	+		25,73	25,46
356	+	+	-	34,83	35,87
357	+	+		25,43	25,33
358	+	+		17,11	16,5
359	+	+		20,62	20,32
360	+	+		20,54	19,9
363	+	+		20,71	18,42
364	+	+		17,32	15,52
365	+	+		17,65	15,65

777	+	+		21,82	21,43
779	+	+		27,7	27,16
780	+	+		17,52	15,64
781	+	+		24,72	23,77
786	+	+		18,26	17,71
788	+	+		16,11	16,94
789	+	+		19,99	20,82
790	+	+	-	37,13	38,51
793	+	+		16,09	15,58
804	+	+		23,56	23,42
806	+	+		24,68	24,44
810	+	+		17,17	15,76
813	+	+		16,78	15,45
814	+	+		16,88	15,61
815	+	+		26,56	26,66
816	+	+		24,05	23,67
819	+	+	-	29,38	28
828	+	+		17,88	17,53
831	+	+		28,21	28,18

1233	+	+	-	33,89	32,23
1237	+	+		20,43	19,56
1239	+	+		29,31	28,93
1241	+	+		16,15	14,83
1242	+	+		21,59	19,76
1244	+	+		18,19	17,46
1246	+	+		18,5	17,91
1247	+	+		24,5	23,07
1248	+	+		25,3	23,57
1251	+	+		24,94	25,29
1252	+	+		14,52	14,34
1255	+	+		17,57	16,71
1257	+	-	-	18	17,58
1260	+	+		20,55	18,97
1261	+	+		20,94	19,7
1263	+	+		20,95	19,26
1264	+	+		28,46	26,84
1265	+	+		28,33	26,72
1267	+	+		24,37	22,56

368	+	+	20,72	18,25	18,95
371	+	+	21,7	21,03	21,67
372	+	+	16,25	15,77	15,64
373	+	+	-	18,25	18,45
376	+	+	19,03	18,18	19,23
378	+	+	26,32	24,96	24,04
380	+	+	-	32,65	31,89
395	+	+	21,24	20,61	22,07
396	+	+	17,29	17,32	17,06
397	+	+	30,54	30,72	30,1
398	+	+	-	14,4	14,33
400	+	+	24,18	22,98	22,79
403	+	+	20,61	18,81	18,93
408	+	+	19,28	18,87	19,25
412	+	+	18,62	17,17	18,39
413	+	+	-	22,61	22,65
415	+	+	22,28	22,29	22,46
417	+	+	24,98	24,06	23,83
419	+	+	-	20,75	20,33

832	+	+	20,14	19,67	20,91
836	+	+	19,18	18,62	18,82
838	+	+	24,71	22,82	23,84
841	+	+	-	32,24	33,63
842	+	+	15,86	14,98	14,92
844	+	+	20,97	20,66	21,71
847	+	+	21,77	21,2	20,76
848	+	+	15,3	14,76	14,83
850	+	+	15,66	15,34	15,29
851	+	+	24,77	24,33	24,5
852	+	+	36,81	35,5	33,88
853	+	+	16,13	15,78	15,95
857	+	+	21,29	20,81	20,9
858	+	+	20,73	20,42	18,45
863	+	+	19,42	19,78	21,05
864	+	+	24,6	24,94	26,48
865	+	+	19,25	19,66	21,12
866	+	+	27,26	27,16	27,95
868	+	+	18,2	18,11	19,02

1268	+	+	16,04	15,53	16,29
1272	+	+	-	18,53	18,55
1274	+	+	22,5	21,93	21,4
1276	+	+	18,28	16,56	17,46
1277	+	+	31,09	28,84	29,88
1281	+	+	23,97	22,81	22,89
1289	+	+	21,67	21,44	21,36
1294	+	+	-	19,62	18,68
1297	+	+	16,16	14,98	15,26
1298	+	+	25,66	23,83	23,92
1300	+	+	19,93	18,2	18,05
1301	+	+	-	17,05	16,46
1305	+	+	29,19	29,02	29,69
1306	+	+	19,18	17,68	18,03
1307	+	+	25,88	24,71	24,94
1308	+	+	19,94	18,56	19,22
1310	+	+	24,35	23,31	24,14
1311	+	+	19,73	19,28	19,25
1313	+	+	18,75	18,07	18,42

420	+	+	26,18	25,01	24,34
429	+	+	21,45	20,85	20,94
431	+	+	20,27	19,71	19,66
436	+	+	19,73	18,38	18,09
441	+	+	20,09	18,32	19,2
443	+	+	24,07	23,12	23,6
449	+	+	27,28	27,29	27,36
452	+	+	21,61	21,55	21,02
454	+	+	22,17	22,06	21,7
456	+	+	25,05	24,11	25,22
460	+	+	27,94	27,14	26,86
462	+	+	29,54	28,18	28,35
467	+	+	32,96	30,95	30,54
472	+	+	19,88	19,53	20,75
474	+	+	-	14,83	14,77

870	+	+	29,36	28,83	28,61
873	+	+	17,89	18,18	17,41
876	+	+	28,19	27,58	27,58
878	+	+	23,79	23,48	23,14
879	+	+	-	15,35	15,72
880	+	+	-	16,05	16,53
883	+	+	20,49	20,07	20,39
885	+	+	28,65	27,94	28,8
888	+	+	24,4	23,16	22,82
890	+	+	15,81	15,17	15,44
891	+	+	16,28	15,6	15,72
894	+	+	16,91	16,62	16,08
895	+	+	22,63	21,26	21,1
896	+	+	17,82	16,84	16,6

1319	+	+	19,26	18,84	16,99
1320	+	+	14,92	14,9	13,9
1322	+	+	17,23	15,32	15,62
1323	+	+	21,69	19,24	19,59
1325	+	-	27,87	25,72	26,38
1326	+	+	-	15,19	15,04
1333	+	+	20,27	19,42	20,53
1334	+	+	24,29	21,66	22,86
1342	+	+	17,23	15,66	16,54
1346	+	+	28,08	27,33	28,51
1349	+	+	24,52	23,29	23,7
1350	+	+	32,57	27,15	26,55
1351	+	+	-	14,35	14,2
1353	+	+	-	16,78	15,89

Brazilian variant P.1

English variant

* CT values not provided to date (09/04//2021)

