TO **A**	Rosslynn Miller-Lee Executive Director, Medical Device Evaluation Bureau MDD
FROM **DE**	Emily Hollink Medical Device Directorate

Application Information Information de soumission			
Application ***Soumission*** 314982	**Name of device** ***Nom de l'homologation*** ELECSYS ANTI-SARS-COV-2	**Licence Number** ***No. de l'homologation*** N/A	**Risk Class** ***Classe de l'instrument*** 4
Application Type ***Type de soumission*** Amendment Application under IO	**Licence Type** ***Type d'homologation*** Test Kit	**Manufacturer** ***Fabricant*** ROCHE DIAGNOSTICS GMBH	**Company ID** ***No. d'entreprise*** 114999

Technology	Antibody
Test Setting	Lab

1 Background/*Antécédents*

The Elecsys Anti-SARS-CoV-2 assay was authorized under the Interim Order on 2020-06-04. An amendment to the authorization was granted on 2020-06-24, extending the reagent onboard duration from 72 hours to 14 days.

The manufacturer submitted a response to five previous conditions that sought information on post-market performance, analytical specificity, hook effect, and precision. The information reviewed and summarized herein addressed the conditions, with the exception of the post-market performance plan, which will be addressed in a revised approach for all related post-market performance plans.

In addition to providing information to respond to the five conditions, the manufacturer also submitted an amendment to add the PreciControl Anti-SARS-CoV-2 to the Elecsys Anti-SARS-CoV-2 assay, and to revise the labelling for the Elecsys Anti-SARS-CoV-2 assay to include the following information:

1) Revised reagent stability after first opening;
2) Revised specimen stability;
3) Added capillary blood as a source for plasma or serum sample preparation; and
4) Included a correlation study of the Elecsys Anti-SARS-CoV-2 assay to a Vesicular Stomatitis Virus (VSV)-based pseudo neutralization assay in the clinical sensitivity section of the Method Sheet (for an educational purpose).

The application was reviewed under the Interim Order Respecting the Importation and Sale of Medical Devices for Use in Relation to COVID-19. This Interim Order allows the

Department to issue expedited authorization for sale or import of medical devices to deal with the current significant risk of COVID-19 to the health and safety of Canadians. The information submitted was evaluated based on the Health Canada Requirements for serological antibody tests submitted under the COVID-19 Interim Order.

The PreciControl Anti-SARS-CoV-2 has been authorised by the US FDA, and is included in the Elecsys Anti-SARS-CoV-2 test kit. However, capillary blood as a source of the plasma or serum samples, and information on the correlation of the Elecsys Anti-SARS-CoV-2 assay with the VSV-based pseudo neutralization assay, are not included in the FDA-authorized labelling.

2 Intended Use

PreciControl Anti-SARS-CoV-2 is a ready-for-use control serum based on human serum. The controls are used for monitoring the accuracy of the Elecsys Anti-SARS-CoV-2 immunoassay.

[Package Insert PreciControl Anti-SARS-CoV-2 Ref. 09216928190 V 2.0 Can English 2020-06].

3 Discussion/*Évaluation*

The information provided meets the minimum requirements for issue of Authorization under the Interim Order.

To respond to the conditions, the following information was submitted:

1) A plan to assess post-market performance. This condition has been fulfilled, but will be further addressed in a revised approach for all related post-market performance plans. Given that the manufacturer has complied with this condition at this time, it will be removed from the revised authorization.

2) A plan to supplement analytical specificity was provided, given that clinical samples with potentially cross-reactive pathogens are not currently available. The plan is acceptable, and the study will be completed once these samples can be obtained.

3) Studies to assess the potential for hook effect and precision were acceptable.

The amendment request to add the PreciControl Anti-SARS-CoV-2 is for a ready-for-use control reagent based on human serum. The control reagent is used for monitoring the accuracy of the Elecsys Anti-SARS-CoV-2 immunoassay. The manufacturer holds a valid MDSAP Certificate.

Studies for specimen and reagent stability were conducted in compliance with ISO 23640:2011 Evaluation of stability of in vitro diagnostic reagents, and the results were acceptable. Storage instructions and limitations are included in the Elecsys Anti-SARS-CoV-2 assay labelling.

Capillary blood, as a source of serum or plasma, offers a way of collecting low sample volumes. Serum and plasma collected from a capillary source were compared against results in positive serum samples using whole blood as the source. Recovery values suggested a linear correlation, with more variability demonstrated in the EDTA capillary-sourced plasma correlation; these differences were not clinically significant, as the higher variability results were for strong positive samples. Labelling instructions provide guidance to test these types of samples as soon as possible to mitigate interference

risks associated with low sample volumes (e.g. high relative concentration of anti-coagulant).

A clinical study added to the labelling indicates that the qualitative results were compared to a VSV-based pseudo-neutralization assay using 46 clinical samples from individual patients. Positive percent agreement and negative percent agreement (2 samples only) were 86.4% and 100%, respectively. A virus neutralization assay is used in conjunction with an infectivity assay, and is designed to detect antibody that is capable of inhibiting viral replication (and therefore, neutralizes viral infection). Given that no changes were made to the intended use statement, it is acceptable that this information has been included for information purposes.

Labelling meets the minimum requirements of the Regulations.

In the context of the COVID-19 pandemic, the benefits of amending the authorization to include the PreciControl Anti-SARS-CoV-2 and to modify the labelling outweigh the risks related to the current COVID-19 national health emergency.

4 Recommendation

Previously, the Elecsys Anti-SARS-CoV-2 and Elecsys Anti-SARS-CoV-2 assays were authorized with the following conditions:

Within one month:

1) Submit a plan to Health Canada that will assess the performance of the test when used in the intended sites. This may be supported by identification of a minimum of two Canadian sites where the performance of the test will be monitored.

2) To supplement information on cross-reactivity studies already included in your application, provide a study that assesses potential interference for hematocrit, anti-nuclear antibodies, and human anti-mouse antibodies; and for the potential interference by medications commonly prescribed in the intended patient population.

3) To further supplement information on cross-reactivity studies already included in your application, provide a plan to assess cross-reactivity for the following endogenous substances and pathogens:

Mandatory organisms

- Adenovirus (e.g. C1 Ad. 71)
- Parainfluenza virus 1- 4
- Human Metapneumovirus (hMPV)
- Enterovirus (e.g. EV68)
- Rhinovirus
- Respiratory synctytial virus
- SARS

Optional organisms

- MERS
- Norovirus
- *Haemophilus influenza*
- *Legionella pneumophila*
- *Mycobacterium tuberculosis*
- *Streptococcus pneumoniae*
- *Streptococcus pyogenes*
- *Bordetella pertussis*
- *Mycoplasma pneumonia*
- *Pneumocystis jiroveci (PJP)*
- *Candida albicans*
- *Staphylococcus epidermis*
- *Staphylococcus salivarius*

***Note the optional organisms will be removed as a condition, given that they are optional.**

4) To supplement the precision results already included in your application, provide the results of a full study evaluating the repeatability of the assay (20x2x2) or a full study evaluating reproducibility (3x5x5) per CLSI EP05-A3.

When available:

5) Provide a summary of the cross-reactivity studies and a study assessing the potential for the assay to demonstrate a hook effect.

6) Provide the final reagent stability report upon completion of the study.

Authorization to add the PreciControl Anti-SARS-CoV-2, and to amend the labelling for the Elecsys Anti-SARS-CoV-2 assay, is now recommended with the following revised conditions:

When available:

1) Provide a summary of the cross-reactivity studies.

2) Provide the final reagent stability report upon completion of the study for the Elecsys Anti-SARS-CoV-2 assay and for the PreciControl Anti-SARS-CoV-2.

I concur / Je suis d'accord

Signed in Docubridge	2020-9-3	*Signed in Docubridge*	
Emily Hollink	Date	Rosslynn Miller-Lee Executive Director/ Directrice Executive Medical Devices Evaluation Bureau/ Bureau de l'évaluation des instruments médicaux	Date