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**MEMORANDUM** **NOTE DE SERVICE**

**TO** Rosslynn Miller-Lee
Executive Director,
Medical Device Evaluation Bureau
MDD

**FROM** Emily Hollink
**DE** MDD

**SUBJECT** Recommendation for Authorization under the COVID-19 Interim Order
**OBJET** Manufacturer: Abbott Ireland, Diagnostics Division

Device: ARCHITECT SARS-CoV-2 IgG Assay
Application: 314941

Background

The application for the ARCHITECT SARS-CoV-2 IgG Assay was reviewed under the Interim Order Respecting the Importation and Sale of Medical Devices for Use in Relation to COVID-19. This Interim Order will allow 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 Guidance: Requirements for Serological Antibody Tests Submitted under the COVID-19 Interim Order.

The ARCHITECT SARS-CoV-2 IgG Assay received a US FDA Emergency Use Authorization (EUA) on April 26, 2020.

***Intended Use***

The SARS-CoV-2 IgG assay is a chemiluminescent microparticle immunoassay (CMIA) intended for the qualitative detection of IgG antibodies to SARS-CoV-2 in human serum, serum separator tube and plasma (ACD, CPD, CPDA-1, dipotassium EDTA, tripotassium EDTA, lithium heparin, lithium heparin separator tube, sodium citrate, sodium heparin). The SARS-CoV-2 IgG assay is intended for use as an aid in identifying individuals with an adaptive immune response to SARS-CoV-2, indicating recent or prior infection. At this time, it is unknown for how long antibodies persist following infection and if the presence of antibodies confers protective immunity. The SARSCoV-2 IgG assay should not be used to diagnose acute SARS-CoV-2 infection. Testing is limited to laboratories certified under the Clinical Laboratory Improvement Amendments (CLIA) of 1988, 42 U.S.C 263a, to perform moderate or high complexity test.

Results are for the detection of SARS CoV-2 antibodies. IgG antibodies to SARS-CoV-2 are generally detectable in blood several days after initial infection, although the duration of time antibodies are present post-infection is not well characterized. Individuals may have detectable virus present for several weeks following seroconversion.

Laboratories within the United States and its territories are required to report all positive results to the appropriate public health authorities.

The sensitivity of SARS-CoV-2 IgG early after infection is unknown. Negative results do not preclude acute SARS-CoV-2 infection. If acute infection is suspected, direct testing for SARS-CoV-2 is necessary.

False positive results for SARS-CoV-2 IgG assay may occur due to cross-reactivity from pre-existing antibodies or other possible causes. The SARS-CoV-2 IgG assay is only for use under the Food and Drug Administration's Emergency Use Authorization.

[ SARS-CoV-2 IgG 6R86 Instructions for Use, H07891R02 – Rev April 2020]

Discussion: The information provided meets the minimum requirements to authorize the ARCHITECT SARS-CoV-2 IgG Assay under the Interim Order.

The ARCHITECT instrument has a Class IV medical device licence, thus this application builds off a platform in the highest risk class, and with experience of use in Canada. Pre-clinical studies included assessment of many of the requested potentially interfering substances outlined in the serological guidance. The remaining information will be requested as a post-authorization study, given the high demonstrated clinical sensitivity and specificity.

Clinical sensitivity (100%) was assessed using 122 specimens from 31 patients and presented over time: The highest sensitivity for the test is observed 2 weeks post symptom onset, which is consistent with known available evidence on the development of IgG antibodies post-infection. When 5 samples from one immunocompromised patient were included, the sensitivity dropped to 97%; immunocompromised patients may not produce measureable amounts of antibodies, and this has been included as a limitation in the labelling.

Clinical specificity (99%) was assessed using a total of 1070 samples. These included 997 samples collected prior to COVID-19, and 73 samples from subjects with respiratory illness, but who were negative by PCR for SARS-CoV-2.

The labelling includes detailed information to communicate test performance, and includes clear information to distinguish clinical sensitivity over time. The minimum requirements outlined in both the Regulations and in the serological guidance have been met.

Addition information on the clinical sensitivity and specificity is available in a peer-review scientific publication, and was consistent with the manufacturer's claims. Based on the scientific evidence available, it is reasonable that the test will be effective for the claimed intended use. In the current context related to COVID-19 pandemic, the risks related to the use of this assay are outweighed by the benefits associated with increased testing capacity that will be facilitated by the authorization for sale of this assay.

**RECOMMENDATION:**

Authorize the ARCHITECT SARS-CoV-2 IgG Assay 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 endogenous cross-reactivity studies already included in your application, provide a cross reactivity study for the following endogenous substances: protein, bilirubin, hemoglobin and triglycerides.

3) Given that some samples to assess cross reactivity are unavailable, provide a plan to assess cross-reactivity for the following substances or pathogens:

**Mandatory cross-reactivity studies**

- Human coronavirus 229E
- Human coronavirus NL63
- Human coronavirus HKU1
- Human coronavirus OC43
- Enterovirus (e.g. EV68)
- Human Metapneumovirus
- Parainfluenza virus 1 - 4
- Total IgM

**Optional organisms**

- MERS
- Norovirus
- *Haemophilus influenza*
- *Legionella pneumophila*
- *Mycobacterium tuberculosis*
- *Streptococcus pneumoniae*
- *Streptococcus pyogenes*
- *Chlamydia pneumonia*
- *Pneumocystis jiroveci (PJP)*
- *Candida albicans*
- *Pseudomonas aeruginosa*
- *Staphylococcus epidermis*
- *Staphylococcus salivarius*
- *T. pallidum*

When available:

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

5) Provide revised labelling to remove references to CLIA and other US-specific language from the intended use statement and other sections in the labelling.

6) Provide the 6 month and final reagent stability report upon completion of the study. Health Canada expects that the stability studies will be initiated immediately upon authorization.

[signed in docuBridge] | I concur / Je suis d'accord

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| | 2020-05-12 | | |
| **Emily Hollink** | Date | **Rosslyn Miller-Lee**<br>Executive Director/<br>Directrice Executive<br>Medical Devices Evaluation Bureau/ Bureau de l'évaluation des instruments médicaux | Date |