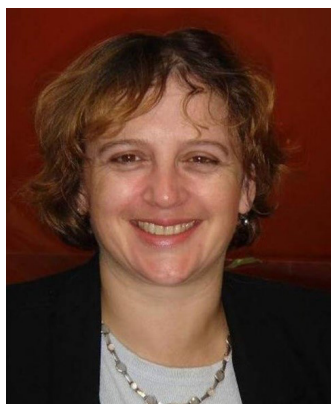


# Agilent Community Designs for Infectious Disease Research

## SureSelect Community Design Pan Human Coronavirus Panel



**Judith Breuer**  
Professor of Virology, UCL

*"SureSelect target enrichment enables highly efficient whole-viral-genome sequencing without the need for prior culture or PCR. The robust and consistent performance of SureSelect is why we've been depending on it for over 10 years. For Coronavirus, we use targeted enrichment in the variant analysis as it is much cleaner than other methods"*

The first cases of the novel coronavirus (SARS-CoV-2) were reported in Wuhan, China in late 2019. Several months later, on March 11 2020, the World Health Organization declared a global pandemic (1). Monitoring outbreaks, tracing epidemiology and understanding the genetics of host-pathogen interactions are essential in efforts to understand the spread of this virus.

Whole-genome sequencing of viruses directly from clinical samples would provide vital information to accomplish these tasks. A research group led by Professor Judith Breuer from University College London (UCL) has pioneered targeted virus genome sequencing using the SureSelect target enrichment technology. Using the SureSelect oligo probes designed against specific viruses, viral genomes can be enriched directly from clinical samples for sequencing (2). The SureSelect technology offers the flexibility to design probes for any virus of interest and enables streamlined and cost-effective sequencing of viruses directly from human samples. Professor Breuer has now applied her expertise and our technology to researching coronavirus to better combat this pandemic.

Targeted sequencing of viral genomes provides a powerful tool to aid national public health efforts seeking to interrupt the spread of the novel coronavirus. By studying viral genomes from COVID-19-positive people, scientists can monitor changes in the virus on a national scale. This data will help researchers better understand how the virus is spreading, whether different strains are emerging, and how to use this information for public health interventions.

To meet these aims, Professor Breuer's team at UCL has designed a SureSelect NGS panel targeting a comprehensive set of human coronavirus genomes. Combining expertise from the UCL Pathogen Genomics Unit and our market-leading SureSelect technology, this pan-coronavirus panel enables the efficient capture of viral sequences from RNA extracted from various sample types. It is now available as the SureSelect Community Design Pan Human Coronavirus Panel (Table 1) and it will help researchers around the globe accelerate their research into coronavirus.

<b>Design Size</b>	235 Kb, (Agilent Tier 1)
<b>Boosting</b>	For Fast Hybridization
<b>Target Virus</b>	<p>The panel is designed with all known human coronaviruses for which complete genomes were available at the time of the design (March 2020). The panel targets the following strains but may also identify additional human coronaviruses that have not been well characterized.</p> <p>229E  NL63  OC43  HU1 and HKU24  Enteric coronavirus 4408  SARS  Mers  Sars-CoV-2</p>
<b>Sequencing Strategy</b>	Up to 96 samples can be pooled on MiSeq v2 500 cycle run depending on the read depth required*.
<b>Special Notes</b>	This panel is used at 10-fold dilution of the probes (See Ref 2 - 5994-0909EN) <sup>§</sup>

**Table 1.** Features of the SureSelect CD Pan Human Coronavirus Panel.

\* Sequencing amount is subjected to individual lab practice and needs.

§ Please refer to the application note authored by Professor Breuer's group for the full protocol prior to ordering these panels (2).

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**For Research Use Only. Not for use in diagnostic procedures.**

Disclaimer: Agilent products are not approved, marketed, or validated for COVID-19 testing, diagnosis, treatment, or mitigation. Agilent has not validated a product to detect the novel coronavirus nor is an assay under development internally.

This information is subject to change without notice.

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The SureSelect CD Pan Human Coronavirus Panel is compatible with modified<sup>§</sup> Agilent SureSelect XT HS and XT Low Input and XT HS2 workflows. The SureSelect XT HS and XT Low Input workflows can be easily automated on both the Agilent Bravo and Agilent Magnis systems for more rapid, reproducible results.

Part Number	Product Description
5191-6838	SureSelect Community Design Pan Human Coronavirus Panel, 160 rxn

**Table 2.** Ordering information of the SureSelect Community Design Pan Human Coronavirus Panel. *Note: This part number covers the capture probe library only. Library prep and target enrichment kits must be purchased separately.*

## Reference

1. WHO COVID-19 Timeline. <https://www.who.int/news-room/detail/08-04-2020-who-timeline--covid-19>
2. Williams, R.J.; Tutill, H.; Roy, S.; Romero, E.Y.; Williams, C.A. Breuer, J.; Depledge, D. Utilization of Agilent SureSelect Target Enrichment for whole genome sequencing of viruses and bacteria. *Agilent Application Note*. 2019, PN 5994-0909EN.