**This agent summary includes the Risk Group 2/BSL2 human coronavirus strains, HCoV-229E, HCoV-OC43, HCoV-NL63, HCoV-HKU1 and variants, but excludes Risk Group 3/BSL3 coronavirus strains and variants, such as SARS-CoV, SARS-CoV-2 and MERS-CoV.**

* Virions of the human coronaviruses (family *Coronaviirdae*, subfamilies *Coronavirinae* and *Topovifinae*) are spherical, enveloped and typified by petal-like surface projections (spikes), which serve as attachment points to the host cells.
* Coronavirus genomes are linear, positive, single-stranded RNA, the largest genomes of known RNA viruses.
* Alpha-type human coronaviruses:
* HCoV-229E commonly causes coryza, with nasal discharge, nasal obstruction, sneezing, sore throat, general malaise and cough.
* HCoV-NL63 causes laryngotracheitis (croup) and nonfatal upper and lower respiratory tract infections in children, elderly, and immunocompromised individuals
* Beta-type coronaviruses
* HCoV-OC43 is characterized by sore throats.
* HCoV-HKU1 causes mild upper respiratory diseases, the common cold, bronchiolitis, and pneumonia, with symptoms such as rhinorrhoea, fever, cough, febrile seizure, and wheezing.
* SARS-CoV and MERS-CoV.
* Human coronaviruses have a worldwide distribution, causing 10-15% of seasonal common cold cases.
* Human-to-human transmission is possible through inhalation of respiratory droplet aerosols and close physical contact. Virus can also be spread via the fecal-oral route, and through fomites. The incubation period is 2-4 days.
* More severe illness may occur in children, the immunocompromised, adults with underlying disease, and the elderly, and may be associated with gastrointestinal illness.
* No specific treatments, prophylaxis or immunizations are available.
* BSL2 containment and PPE is required for work with HCoV-229E, HCoV-OC43, HCoV-NL63, HCoV-HKU.

References

* CDC: Common Human Coronaviruses

<https://www.cdc.gov/coronavirus/downloads/Common-HCoV-fact-sheet-508.pdf>

* Pathogen Safety Data Sheets: Infectious Substances – Human Coronavirus

<https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/human-coronavirus.html>

* [*Biosafety in Microbiological and Biomedical Laboratories*, 5th edition. U.S. Department of Health and Human Services; CDC, NIH. HHS Publication No. (CDC) 21-1112. December 2009 Revision](https://www.cdc.gov/labs/pdf/CDC-BiosafetyMicrobiologicalBiomedicalLaboratories-2009-P.PDF).
* Andrew M.Q. King, 2012, **“**Family – *Coronaviridae*” in *Virus Taxonomy, Ninth Report of the International Committee on Taxonomy of Viruses*, Pages 806-828, Publisher: Elsevier, Inc.

<https://doi.org/10.1016/B978-0-12-384684-6.00068-9>

Enter the following information:

1. Name of the Principal Investigator: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Applicable IBC protocol number(s) (approved or submitted): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. List the laboratory locations (building/room[s]) for BSL2 human coronaviruses:

* Procedures: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and Storage: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. If introducing BSL2 human coronaviruses into animals, list the animal facility locations (building/room[s]) for these animals. Minimally, ABSL2 containment is required.

* Confirm with ULAR that the rooms listed below are suitable for ABSL2 animals.
* Procedures:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and Housing:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Date of Agent Summary form completion: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_