INSTRUCTION FOR THE PROCESSING OF BODY FLUIDS AND HUMAN TISSUE DUE TO COVID-19

Type of document: Instruction
Date of approval: 28 April 2020
Reg. no: FS 1.1-914-20
Approved by: Vice-Chancellor
Validity: 28 April 2020 – until further notice
Area: Environment and Safety, Human Resources, Equal Opportunities and Work Environment
Office in charge: Planning Office
Replaces document: New policy document
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* This document has been translated from Swedish into English. If the English version differs from the original, the Swedish version takes precedence.
1. **Description**

This instruction describes how to process human samples during COVID-19. According to requirements set by the Swedish Work Environment Authority (AFS 2018:4), a minimum of security class 2 needs to apply for the processing of material that may contain infectious agents. This includes all testing and processing of samples from human subjects and patients whose infectious status is unknown.

2. **Background**

Due to the current public spread of COVID-19, there is a risk that the novel coronavirus, SARS-CoV-2, can be found in untested body fluids and tissues. According to the Public Health Agency of Sweden, there is currently not sufficient knowledge about what body fluids can spread SARS-CoV-2. The virus has been found in samples from the lower and upper respiratory tracts, blood and faeces, and it is still unknown if other body fluids, such as seminal fluid, urine and breast milk can contain viable virus.

Since the spread of COVID-19 (the disease caused by SARS-CoV-2) can take place through contact, droplet and aerosol transmission, the formation of aerosols, splashes and sprays from the processing of human samples forms a risk for laboratory personnel. Tasks that represent a risk are aliquoting, mixing/shaking, sonication and centrifuging.

When processing body fluids and human tissue at the regions (Region Västerbotten, Region Västernorrland, Region Jämtland Härjedalen and Region Norrbotten), their guidelines apply.

3. **Guidelines**

According to requirements set by the Swedish Work Environment Authority (AFS 2018:4), a minimum of security class 2 needs to apply for the processing of material that may contain infectious agents. This includes all testing and processing of samples from human subjects and patients whose infectious status is unknown.

The Swedish Work Environment Authority, in consultation with the Public Health Agency of Sweden, have categorised SARS-CoV-2 in Risk Class 3. Based upon this, the Public Health Agency of Sweden has drafted recommendations for the processing of material suspected of containing SARS-CoV-2. These recommendations should be adhered to at Umeå University.

**When processing body fluids and human tissues with unknown infectious status** and where the work, for instance, involves analysing other infectious agents or perform other analyses on the material such as molecular biological analysis but does not include cultivating or processing of cultivated samples:

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- The minimum of security class 2 applies (safety precautions according to Section 23 AFS 2018:4)

- Processing must take place using a class II microbiological workbench

- The following protective equipment is required:
  
  • Protective gloves
  
  • Safety glasses or visor
  
  • A risk assessment will determine if additional protective equipment is necessary, for instance:
    
    ▪ long-sleeved water repellent lab coat, long-sleeved disposable apron (recommended by the Public Health Agency of Sweden in the event of suspicion of COVID-19)
    
    ▪ protective face mask
  
- Special hygiene measures must be taken (Section 14 AFS 2018:4)

- Waste disposal:
  
  • Sharp objects that have been in contact with human body fluids must be disposed of in secure disposal containers intended for piercing objects.
  
  • Other waste that has come in contact with human body fluids must be disposed of as contaminated waste. The waste must be placed in intended disposal containers marked UN 3291.

PLEASE NOTE! When cultivating SARS-CoV-2 and processing cultivated samples, protective measures must be applied corresponding to security class 3 and the work must be conducted in a class 3 laboratory. This also goes for all other intentional work with SARS-CoV-2. Such work must also be reported to the Swedish Work Environment Authority.

Everyone using material with unknown infectious status is urged to look over their risk assessments to validate if the safety precautions chosen are sufficient. Particularly risky patient material, with regards to SARS-CoV-2, are samples from lower and upper respiratory tracts (e.g. saliva, sputum, lavage, respiratory tract secretion), lung biopsies or faeces samples, but all material must be processed with caution as it is yet unknown what other body fluids and tissues can contain the virus.

Freezing samples
When freezing untested samples containing body fluids or human tissue during the COVID-19 pandemic, samples should be labelled with a symbol for biological hazard and the text "suspected
SARS-CoV-2”. When the time has come to process the frozen samples, staff will be made aware that the samples were taken during the COVID-19 pandemic and necessary safety precautions can be taken.

**Further information**


For more information, please contact the University’s biosafety expert Mikael Wikström.