



07.07.2021, Berlin, Copenhagen/Lyngby, and Umeå

The Robert Koch Institute (RKI) in Germany, the Technical University of Denmark (DTU), and the Swedish Defence Research Agency (FOI), in coordination with the United States Department of State and the RefBio project (Germany's contribution to strengthen the bio-analytical reference laboratories in the UNSGM), **have the honour to invite you to participate in two Dry Lab External Quality Assurance Exercises (EQAE), to be conducted in 2021 and 2022.** Efforts under EQAE are meant to assist the United Nations Office for Disarmament Affairs (UNODA) prepare for investigations of alleged biological weapons use as custodian of the Secretary General's Mechanism.

In an investigation of alleged biological weapon use, carried out by the United Nations Secretary-General's Mechanism (UNSGM), DNA sequence analysis has the ability to provide high discriminatory power for finding deviating sequence patterns and signs of genetic manipulation missed by standard methods.

In addition to the ongoing RefBio Wet Lab EQAEs, the exercises will evaluate the capability of a laboratory to identify and characterize viral pathogens from datasets generated by modern DNA sequencing techniques.

Each EQAE will include the analysis of a handful of virus sequence datasets, as well the interpretation and reporting of the bioinformatics results, and a simulated investigation process. There will be virtual workshops for the participants after each EQAE to discuss the results and to learn from each other.

We hope that you or another representative of your Organization will be able to accept this invitation and join us for the EQAEs.

The benefits of participating in the EQAEs include:

- learn from other experts
- broaden your network of laboratories
- eventually to be recognized as a laboratory resource by the UN for possible future investigations of alleged use of biological weapons

We would greatly appreciate if you could respond to this invitation not later than **6 September 2021** by signing in via the following link:

https://www.surveymonkey.com/r/ViralEQAE_signup

Sincerely, the EQAE coordination team

UNSGM

The United Nations Secretary-General's Mechanism (UNSGM) is a unique tool for investigating alleged use of chemical, biological and toxin weapons. In the event of a request by a United Nations Member State, the Secretary-General has the authority to launch an investigation, to be conducted by rostered experts with the aid of laboratories designated by Member States. However, efforts to investigate a case of alleged use of biological weapons may face substantial practical, technical and policy challenges.



Exercise information

Participants will be asked to perform detailed analysis on a handful of sequencing datasets, and to consider answer questions such as the following:

- Which relevant bio-threat virus(es) can be found in the dataset?
- Is the virus potentially genetically engineered?
- Can any peculiarities in the dataset/genome be identified?

EXERCISE 1

Fictitious outbreak of a virus among humans and in wild-life

Number of datasets: Five (5)

Sequencing Techniques: Illumina and Nanopore

Challenges: Concentration, quality of reads, and modifications of DNA virus.

Schedule: 20 September 2021

Time for analysis: 6 weeks

EXERCISE 2

Simulated investigation process.

Number of datasets: Five (5)

Sequencing Techniques: Illumina and Nanopore.

Challenges: Concentration, quality of reads, background, and modifications. Interpretation of results.

Schedule: May 2022

Time for analysis: 6 weeks

Who can participate?

All laboratories performing sequence analysis of infectious disease pathogens are invited to participate. Participation is free of charge.

Registration

Registration will be open until 6 September.

EQAE coordination team

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GOAL

The EQAEs are funded by the Bureau of Arms Control, Verification and Compliance in the United States Department of State. The aim is to increase the level of preparedness for laboratory participation in possible future UN investigations of alleged use of biological weapons, improve the methods for data analysis and virus identification and characterization with sequencing.