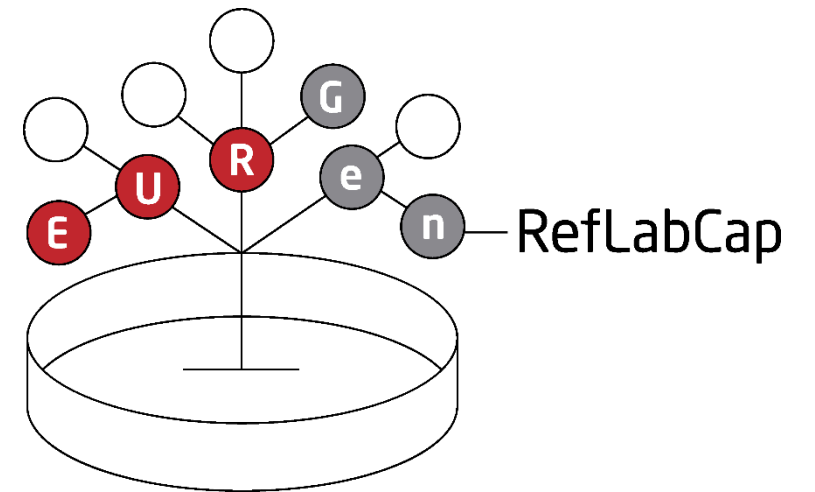


EURGen-RefLabCap Physical Workshop 2023

Welcome

Wednesday, 21 June 2023

13:30 -17:00 CET



René S. Hendriksen

rshe@food.dtu.dk

Welcome, agenda for the day and introduction round

Meeting agenda of day 1 (21 June)

When arriving at DTU: Lunch

13:30 - 14:00: Welcome, agenda for the day and introduction round (Rene S. Hendriksen, DTU)

14:00 – 14:15: Explanation of networking exercise (Ana Rita Rebelo, DTU)

14:15 – 15:15: Networking exercise (all)

15:15 - 15:30: Coffee break

15:30 – 16:00: Plenary discussion of networking exercise (all)

~~16:00 – 16:45: Reflections about the first EQA (Ana Rita Rebelo, DTU)~~ **postponed due to lack of time**

16:45 – 17:00: Wrap-up (Rene S. Hendriksen, DTU)

17:00: Transport from DTU to the hotel

Introduction round

FIRST STEP:

In the white board, please mark if your NRL has provided physical workshops/training on site, and/or online workshops/training, and/or organized national exercises (e.g. EQAs)

SECOND STEP:

Find a colleague (not from your own NRL)

THIRD STEP:

Talk to your colleague for two minutes and exchange some interesting information not related to work (e.g. hobbies)

FOURTH STEP:

Introduce your colleague to everyone and share 2 details about them

Ana Rita Rebelo
anrire@food.dtu.dk

Explanation of networking exercise

Networking exercise

Please discuss how you would arrange the following activities in your **national network**:

- 1) physical workshop
- 2) virtual workshop (or webinar)
- 3) training course

For **all types of activities** identify a relevant topic and the relevant participants.

For **one (or more) of the activities**, design a complete agenda and an institutional workplan (including how you would invite the participants, where would the training take place, how you would prepare the physical setting, etc.)

Networking exercise

The ideas must be relevant for the specific situation in your country.

The members of the groups can (and should) have different ideas.

The members of the groups don't need to choose the same activity to design in detail, but should collaborate with each other to help design their respective activities.

These ideas can be implemented in real life and you can use the tailored support from your EURGen-RefLabCap team to further develop them during the priority country meetings.

Networking exercise

Examples

For **all types of activities** identify a relevant topic, the relevant participants and the duration

- 1) I would organize a **physical workshop** for planning national surveillance of colistin resistance through molecular methods. I would invite one microbiologist and one epidemiologist from every national clinical microbiology laboratory (in total 22 people). The workshop would last one full day.
- 2) I would organize a **virtual workshop** for discussion of the different AMR phenotypes mediated by the different blaOXA variants. I would invite one microbiologist from every national clinical microbiology laboratory (in total 11 people). The workshop would last three hours.
- 3) I would organize a **training course** for DNA extraction protocols. I would invite one representative from every national clinical microbiology laboratory, which should be the person that will perform the protocol during routine work or should be a person able to teach relevant colleagues when back on site. The adequate person should be decided by each laboratory, and in total we would have 11 participants. The course would last two full days.

Networking exercise

will include sessions that promote the development of pedagogical and didactic capacities. The workshop will focus on the practical organisation of physical and virtual training courses, exercises and workshops.

The workshop will be held **physically at the Technical University of Denmark (DTU) on 21 and 22 June 2023.**

Agenda:

First day – Wednesday 21 June 2023, 13:30 - 17:00 CET

12:00: Transport from the Network Meeting at SSI to the Physical Workshop at DTU, including picking-up new participants at the hotel

When arriving at DTU: Lunch

13:30 - 14:00: Welcome, agenda for the day and introduction round (Rene S. Hendriksen, DTU)

14:00 – 14:15: Explanation of networking exercise (Ana Rita Rebelo, DTU)

14:15 – 15:15: Networking exercise (all)

15:15 - 15:30: Coffee break

15:30 – 16:00: Plenary discussion of networking exercise (all)

16:00 – 16:45: Reflections about the first EQA (Ana Rita Rebelo, DTU)

16:45 – 17:00: Wrap-up (Rene S. Hendriksen, DTU)

17:00: Transport from DTU to the hotel

Comments

Ana Rita Bastos Rebelo

They will have water and coffee available. Next to the coffee they will have a "poster" where they tick off if they have provided physical trainings, online trainings, and organised national exercises (such as EQA)

Ana Rita Bastos Rebelo

During the introduction they speak to a neighbor a few minutes and then they must present their neighbor; they should present 1-2 non-scientific details e.g. some hobby

Ana Rita Bastos Rebelo

We roll the poster into the room so we can see each expertise; 6 teams of ca. 5 people and all discuss all three topics: Please discuss how you would go about arranging a Physical workshop in your network (including identification of topics and participants, planning the program and conducting the physical workshop etc.)
 · Please discuss how you would go about arranging a Virtual workshop (or webinar) in your network (including identification of topics and participants, planning the program and conducting the virtual workshop etc.)
 · Please discuss how you would go about arranging a relevant Training course in your network (including identification of topics and participants, planning the program and conducting of the training course etc.)

Invitation email

Location

Materials

Food

Hotel

Feedback

Etc, etc.

Networking exercise

Groups

1	2	3	4	5	6	7

Networking exercise

14:15 – 15:15: Networking exercise (all)

15:15 - 15:30: Coffee break

15:30 – 16:00: Plenary discussion of networking exercise (all)

René S. Hendriksen

rshe@food.dtu.dk

Questions and wrapping up the day

EURGen-RefLabCap@food.dtu.dk

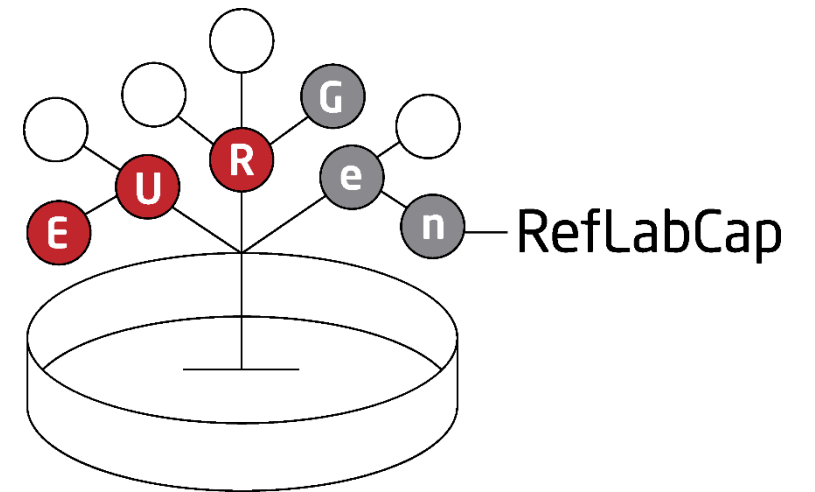
Thank you on behalf of the EURGen-RefLabCap team

EURGen-RefLabCap Physical Workshop 2023

Welcome

Thursday, 22 June 2023

9:00 - 13:30 CET



René S. Hendriksen

rshe@food.dtu.dk

Welcome, agenda for the day and re- cap of yesterday

Meeting agenda of day 2 (22 June)

9:00 - 9:15: Welcome, agenda for the day and re-cap of yesterday (Rene S. Hendriksen, DTU)

9:15 - 9:45: Presentation of the pilot project (Birgitte, DTU? Camilla/Valeria? Countries?)

9:45 - 10:45: Brainstorming for the pilot project (all)

10:45 - 11:00: Coffee break

~~11:00 – 11:30: Strategies and examples for physical and virtual courses and exercises (Ana Rita Rebelo, DTU)~~

Reflections about the first EQA

11:30 – 12:00: How to prepare and share reference documents and materials (Susanne K. Pedersen, DTU)

12:00 – 12:30: How to prepare and share big data (Faisal Ahmad Khan, DTU)

12:30 - 12:45: Wrap-up and goodbye (Rene S. Hendriksen, DTU)

12:45: Lunch

13:30: Transport from the DTU to the hotel

Camilla Wiuff Coia, SSI

cmwi@ssi.dk

Explanation of the pilot project

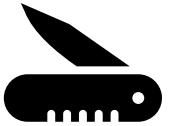
EURGen-RefLabCap Network Workshop 2023

Pilot genomic surveillance study

Wednesday, 09.15-9.45, 22 June 2023

Camilla W Coia

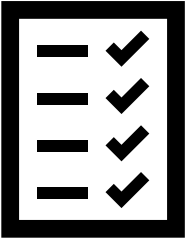
Objective of pilot genomic surveillance study



The **objective of the national pilot study** is to build capacity at the NRLs for genomic surveillance and outbreak investigations of specific AMR priority pathogens.

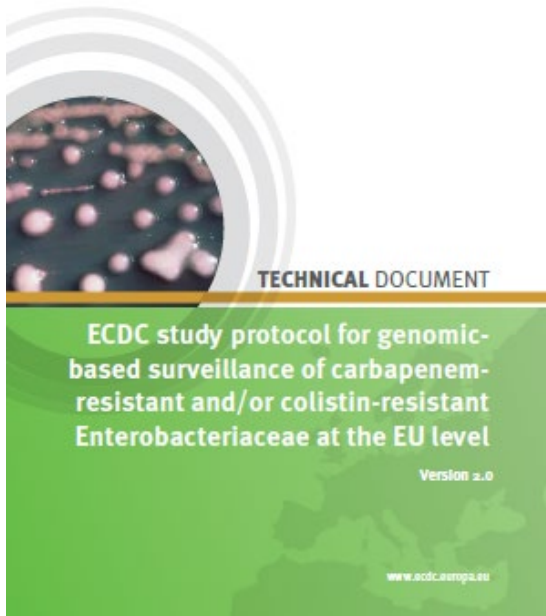
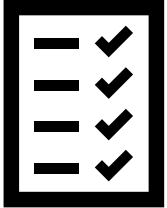
- Consider identified gaps and needs from your NRL action plans
- Select priority pathogen
 - WS1: carbapenem- and/or colistin-resistant Enterobacterales, or
 - WS2: carbapenem- and/or colistin-resistant *A. baumannii* or *P. aeruginosa*)

Step 1: Produce a brief project description (using EURGen-RefLabCap template)



- **Objective of the pilot study** (what is being investigated?)
- **Study inclusion criteria** (healthcare setting, patients, case definition, study period)
- **Sample collection** (period, clinical sample types, number of samples)
- **Patient data collection** (age, gender, in/out patient, type of ward)
- **Microbiology data** (strain collection and testing dates, species ID, AST results, location of pathogen (organ/system), infection/colonisation)
- **Epidemiology data** (patient location, hospitalisation periods, transfers, travels etc.)
- **Whole genome sequencing** (number of isolates, technology)
- **Bioinformatic analysis** (resistance determining genes, phylogenetic relatedness, plasmids)
- **Data handling and storage** (computer/server capacity, secure handling)

Step 1 (cont.): Patient data items



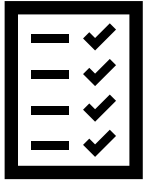
- **Patient data** items should **be aligned** with those of:

ECDC study protocol for genomic-based surveillance of carbapenem-resistant and/or colistin-resistant Enterobacteriaceae at the EU level
Version 2.0

See page 7

- https://www.ecdc.europa.eu/sites/default/files/documents/Protocol-genomic-surveillance-resistant-Enterobacteriaceae-v2_0.pdf

Step 1 (cont.): Collection of strains



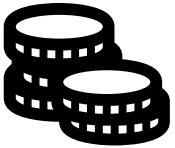
- The **target** is to collect **25-30 strains in each country**.
- The collection may include strains that have been previously **sequenced** and **analysed** by ECDC or other collaborators (e.g. strains included in ECDC rapid risk assessments and in the CCRE survey). This will allow assessment of the accuracy of the newly implemented WGS method in the laboratory.
- A lower number of strains for inclusion in the study can be agreed, if the target cannot be reached, although a minimum of **10 strains is mandatory**.

Step 2: Discuss the project description



- Share your project description with the EURGen-RefLabCap team
- Receive feedback and discuss the study setup and individual steps you need to take to carry out the study
- Reality check (is it feasible within the timeframe?)
- Revise if necessary

Step 3: Apply for funding



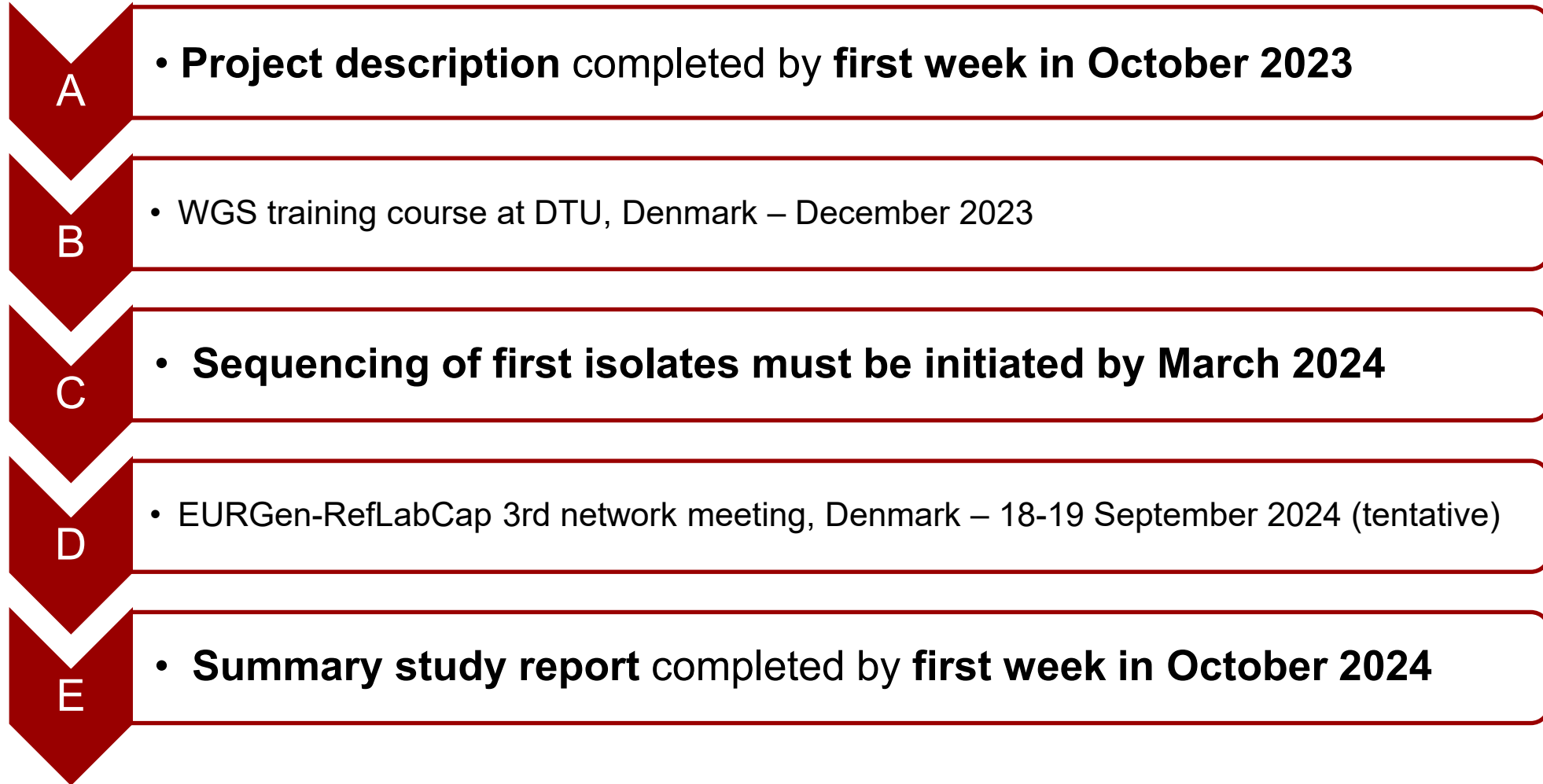
- Apply for funding using a EURGen-RefLabCap template
- A maximum of 14,000 euros can be applied for
- List the number of isolates planned for WGS and predicted consumables
- 100 euros per whole genome sequenced isolate
- Other expenses

Step 4: Write report (using EURGen-RefLabCap template)



- **Write a brief summary report** of your findings in the pilot study (using a EURGen-RefLabCap template: Methods, Results and Discussion sections, including a commentary on the impact on capacity building at your NRL)
- **Include any deviations or changes** in the study from the project description (Step 1)
- **Include QC-data from WGS runs**
- It is encouraged that the **NRLs submit their WGS-data to EpiPulse or ENA WGS data repositories**

Time lines of the pilot study



Ana Rita Rebelo
anrire@food.dtu.dk

Brainstorming for the pilot project

Examples of topics to discuss

What is the objective of the study?

Surveillance? Active outbreak? Diagnostics?

What are the target pathogens?

Species-specific? AMR-specific?

How many isolates to collect and sequence? Are older strains from ECDC surveillance/studies included?

What is the complete workflow?

Starting from contacting the relevant people to collect the samples

Ending with submitting the pilot report

In each step of the workflow, what kind of support do you need from the EURGen-RefLabCap?

Financial support? Targeted teaching?

What is the desired impact on capacity for WGS-based surveillance and outbreak detection at the NRL level?

What are potential follow-up activities, depending on the outcome of the study?

Groups

1		
2		
3		

4		
5		

Coffee break

10:45 - 11:00



Ana Rita Rebelo
anrire@food.dtu.dk

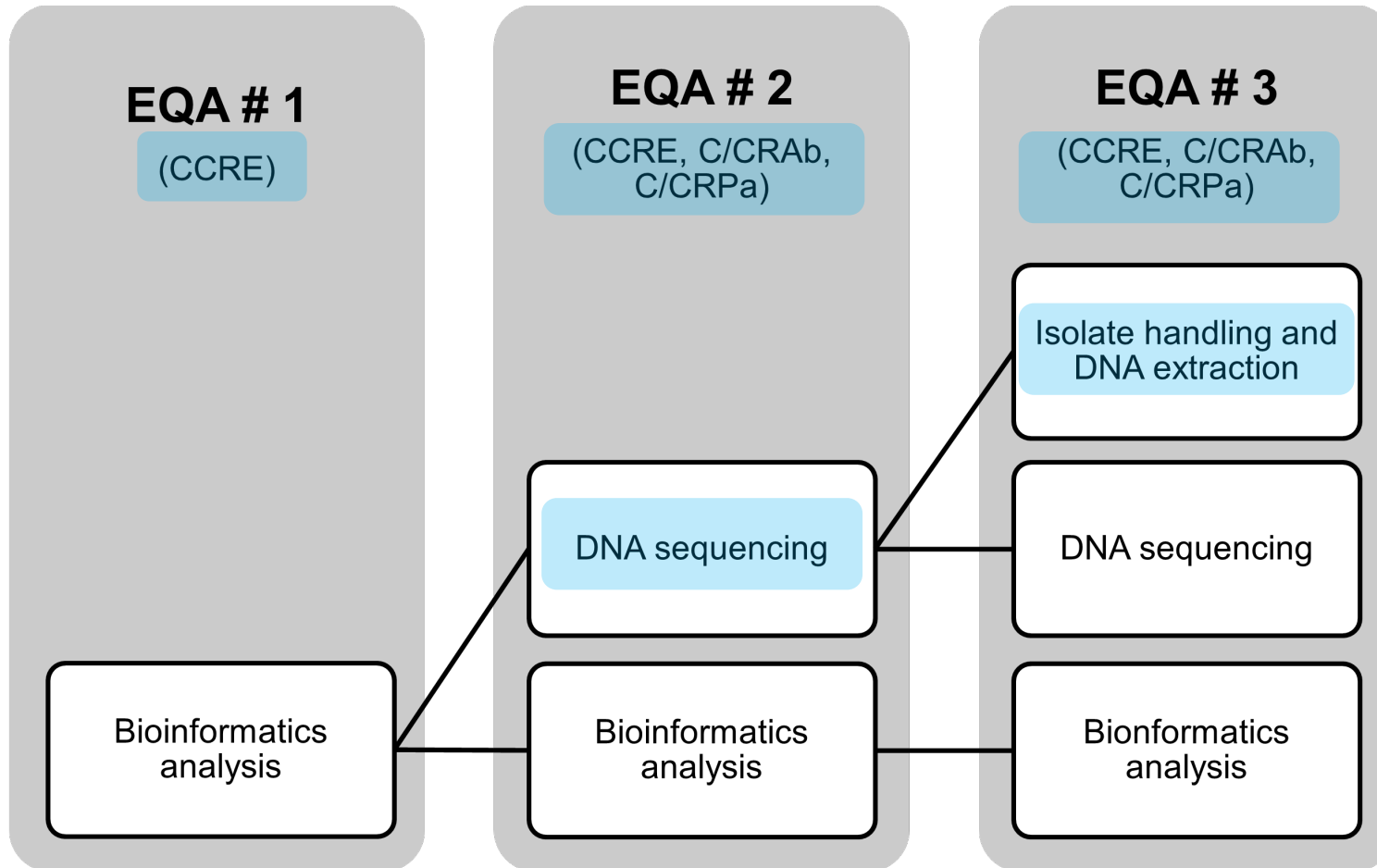
Reflections about the first EQA

Interactive discussion – please! 😊

Feel free to raise your hand, take notes for later, etc.

The objective is to have an open discussion and hear your ideas, opinions, suggestions.

OVERVIEW OF ALL EURGEN-REFLABCAP EQAs



Brief summary of the EQA - design

Strains:

EURGen-2022-01 *E. coli*

EURGen-2022-02 *K. pneumoniae*

EURGen-2022-03 *K. pneumoniae*

EURGen-2022-04 *E. coli*

Materials:

FASTA short-reads

FASTA long-reads

FASTQ short-reads

FASTQ long-reads

Analyses:

- i) prediction of multi-locus sequence
- ii) detection of plasmid replicon types
- iii) detection of genes and chromosomal point mutations mediating AMR
- iv) *in silico* prediction of the AMR profiles

Brief summary of the EQA – expected results

- Three external reference laboratories
 - DTU
 - SSI
 - Centre Hospitalier Universitaire de Caen Normandie
- Mainly tools from Center for Genomic Epidemiology (CGE)
- Default thresholds (80% ID and 60% COV) or higher

Final set of expected results:

Categorical agreement

+

ID ≥ 90%

+

COV ≥ 90% (plasmids) / ≥ 60% (ARGs)

Analysis	Submitted result	Score
Prediction of MLST	Correct MLST	1
	Incorrect MLST	0
Detection of plasmid replicons, AMR genes and chromosomal PMs	Genetic determinant correctly identified	1
	Missing a genetic determinant	blank
	Reporting a genetic determinant that was not part of the expected results	0
In silico prediction of AMR profiles	Complete AMR profile correctly predicted	1
	Missing one or more antimicrobial in the complete AMR profile, or including antimicrobials that were not part of the expected profile	0

Brief summary of the EQA - participation

Total short-reads = 28

Total long-reads = 7

	FASTA short-reads	FASTA long-reads	FASTQ short-reads	FASTQ long-reads
Number of sequence analyses	18	6	10	1

Total 24 FASTA	Total 11 FASTQ
----------------	----------------

Total 35 analyses

Most common bioinformatics approaches: CGE tools

Your participation

Participating countries:

How to ensure your continued participation in future EQAs?

How to help troubleshoot your results?

Other needs for support?

Missing countries:

How to support your participation in future EQAs?

Feedback for the EQA

Share any positive or negative feedback

Examples:

- The analyses included in the EQA helped us improve our pipelines
- We need more time to analyse the data
- We increased our expertise regarding AMR genes that mediate resistance profiles
- The protocol is not clear
- The individual evaluation reports were used to benchmark new tools
- The individual evaluation reports are not clear

Any other comments or suggestions

- How to improve future EQAs
- How to better support the PC/additional countries
- Etc.

These ideas can be implemented in real life and you can use the tailored support from your EURGen-RefLabCap team.

Susanne Karlsmose Pedersen

suska@food.dtu.dk

How to prepare and share reference documents and materials

Activities in your NRL network

E.g.,

Training courses

National exercises

National simulation exercises

National proficiency tests

NRL network meetings

NRL workshops

Face-to-face meetings

Virtual meetings

Data exercises

Laboratory exercises

Few or many participants

Individual meeting/activity or part of a series of meetings/same activity

Budget?

What are the requests from funding body?

Activities in your NRL network

E.g.,

Training course
National exercises
National simulation exercises
National proficiency tests
NRL network meetings
NRL workshops

To do when planning meetings

In good time:

- Identify scope and aim of the activity
- Identify intended participants
- Plan dates
- Book venue
- Plan agenda/time schedule
- Organize consumables, laboratory space, data sharing
- Inform participants of planned meeting/activity, including content, venue and dates
- Forward details on practical issues to speakers and participants and others
- Meeting notes and evaluation

Key: Communication

Activities in your NRL network

E.g.,

Training course
National exercises
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Consider:

Confirm scope and aim of the activity with workplan, agreements and relevant heads and collaborators

Type of meeting/activity:

- Gathering of knowledge or information?
- Distribution of knowledge or information?
- Discussion to reach agreement?
- Teaching activity?
- Learning activity?
- Might you – with a little extra effort be able to get something additional out of the activity (information, a report, a publication)?

Activities in your NRL network

E.g.,

Training [course](#)
National [exercises](#)
National simulation [exercises](#)
National [proficiency tests](#)
NRL [network meetings](#)
NRL workshops

To do when planning meetings

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Consider:

- Identify who to invite (Few? Larger group? Well-known contacts? New contacts?)
- confirm list of invitees
- collect contact information (via network? via a survey?)

Activities in your NRL network

E.g.,

Training course
National exercises
National simulation exercises
National proficiency tests
NRL network meetings
NRL workshops

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- Meeting notes and evaluation

Consider:

- Any deadlines that must be met?
- Any schedules/plans to take into account?
- Any conflicting meetings/activities?
- Any weeks/months that we know are particularly busy that we should dodge?

Activities in your NRL network

E.g.,

Training [course](#)
National [exercises](#)
National simulation [exercises](#)
National [proficiency tests](#)
NRL [network meetings](#)
NRL workshops

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- Meeting notes and evaluation

Consider:

- The institution where you're based?
- Collaborator institution?
- Hotel/conference centre
- What's needed in the room? Chairs (theater style)? Chairs/tables? Discussion group setup?
- Virtual meeting?

Activities in your NRL network

E.g.,

Training course
National exercises
National simulation exercises
National proficiency tests
NRL network meetings
NRL workshops

To do when planning meetings

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- Meeting notes and evaluation

Consider:

Consult scope and aim of the activity with workplan, agreements and relevant heads and collaborators

- Any issues that must be covered?
- Any issues that you would like to cover?
- Should somebody be invited to speak?
- Should colleagues be invited to speak?
- Could a speaker join virtually?
- Should a 'strong figure' be invited to set the scene and welcome at the meeting?
- Leave some flexibility in the agenda for discussions and for agenda items taking more time than planned

For activities involving the laboratory:

- Schedule time for reactions, incubation

Activities in your NRL network

E.g.,

Training course
National exercises
National simulation exercises
National proficiency tests
NRL network meetings
NRL workshops

To do when planning meetings

In good time:

- Identify scope and aim of the activity
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- Meeting notes and evaluation

Consider:

Plan with the laboratory:

- Consumables
- Time schedule
- Space
- Prepare participant protocols
- Participants to work in groups?
- Show some of the steps as a TV-kitchen?
- (Documentation of) safety introduction

Data sharing, e.g.,:

- Email
- Website
- ftp-sites
- ScienceData
- hardcopies

Activities in your NRL network

E.g.,

Training course
National exercises
National simulation exercises
National proficiency tests
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Consider:

Ensure participants are informed of

- where to be when
- what to bring (computer, software)
- what to have read (any publications or information participants should be acquainted with before the activity)
- what to have prepared (info via a survey beforehand? Discuss with colleagues beforehand? Slides?)

Activities in your NRL network

E.g.,

Training course
National exercises
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National proficiency tests
NRL network meetings
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Consider:

Communicate details with the

- speakers
- laboratory technicians
- hotel
- bus company
- canteen/restaurant

Activities in your NRL network

- E.g.,**
- Training course
 - National exercises
 - National simulation exercises
 - National proficiency tests
 - NRL network meetings
 - NRL workshops

To do when planning meetings

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- Meeting notes and evaluation

Consider:

- Minutes? Meeting notes?
- Is a formal meeting report required?
- Who captures them? How?
- Who finalizes?

Oral feedback at the end of the meeting

Written feedback:

- hardcopy (few questions on paper)
- virtual/plenum (link to kahoot)
- virtual/individual (link to survey tool – e.g., EU survey)

As for funding

- Agree activity with funding body
- Ensure that plans and agreements correspond to the budget
- Ensure to follow agreements made in relation to the budget
- Be specific to speakers and participants as to expenses covered by the organizers
- If external venue, ensure all expenses are covered
 - rental of rooms
 - technical assistance (sound/IT)
 - technical assistance (if hybrid or virtual meeting)
- Experience of other expenses that have come as a surprise?

E.g.,

Training course
National exercises
National simulation exercises
National proficiency tests
NRL network meetings
NRL workshops

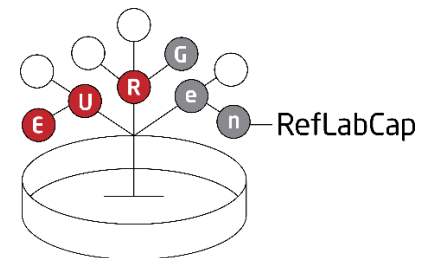
Faisal Ahmad Khan

fakh@food.dtu.dk

How to prepare and share big data

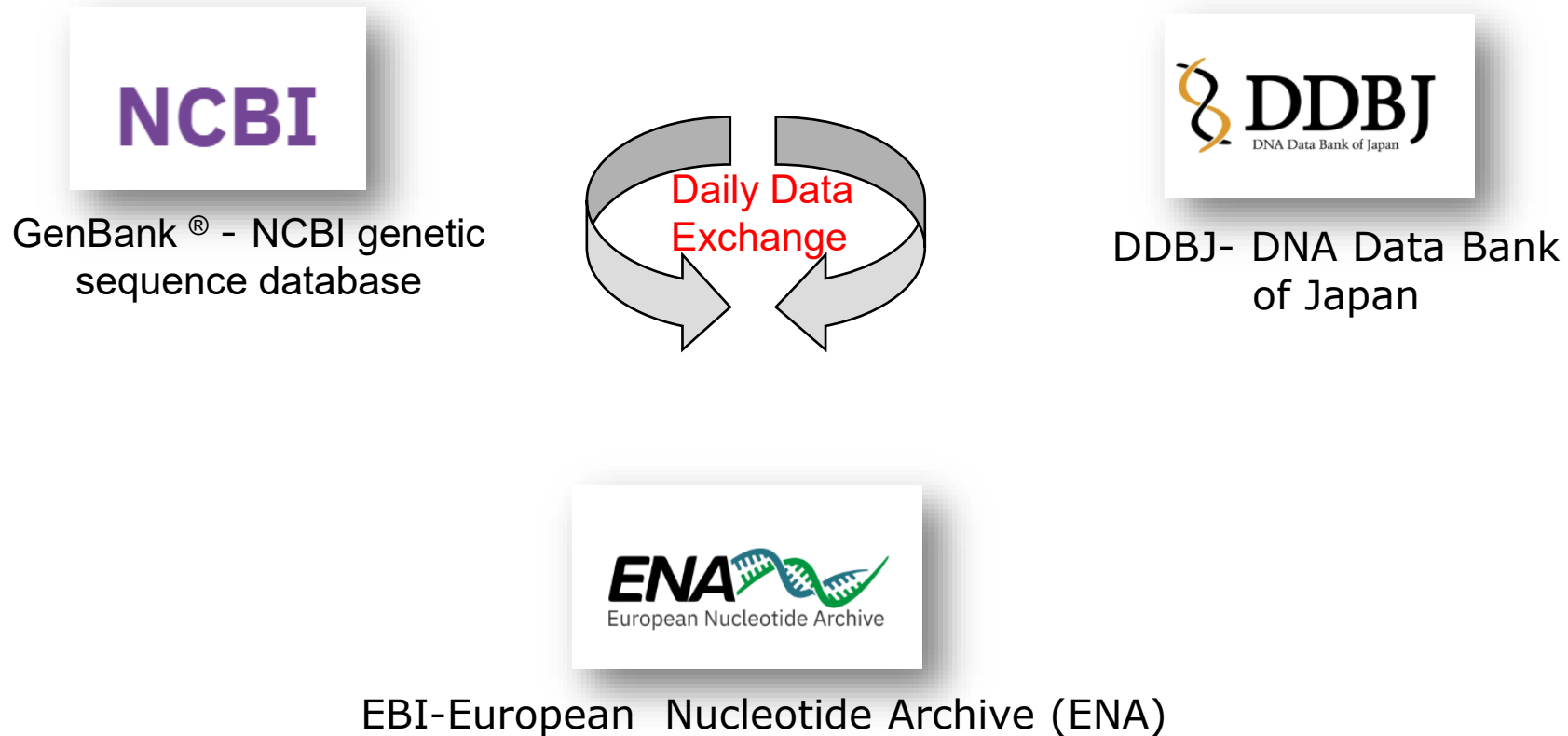
WGS repositories and data sharing

EURGen-RefLabCap
Workshop
22 June 2023
Faisal Khan
(fakh@food.dtu.dk)



Bacterial Sequence repositories

- Almost all sequences are submitted to [International Nucleotide Sequence Database Collaboration](#)



Databases within GenBank

- **BioProject**- collection of biological data related to a sequencing project
 - BioProject accession always starts with **PRJ**.... e.g., PRJNA271013
 - Contains description of the study/publication and number of samples

BioProject [Create alert](#) [Advanced](#) [Browse by Project attributes](#)

Display Settings: ▾

Gammaproteobacteria Accession: PRJDB10842

Japan Antimicrobial Resistant Bacterial Surveillance on Gram-negative Rods: JARBS-GNR

This project is for the genomes of third-generation cephalosporin- and carbapenem-resistant Gram-negative bacterial isolates collected from the Japan Antimicrobial Resistant Bacterial Surveillance (JARBS). [More...](#)

Accession	PRJDB10842
Data Type	Genome sequencing
Scope	Multiisolate
Organism	Gammaproteobacteria [Taxonomy ID: 1236] Bacteria; Pseudomonadota; Gammaproteobacteria
Submission	Registration date: 4-Nov-2021 Antimicrobial Resistance Research Center, National Institute of Infectious Diseases
Relevance	Medical

Databases within GenBank

- **BioSample**- contains description of biological source material (sample/isolate)
 - BioSample accession always starts with **SAM**.... e.g., SAMD00499521
 - Contains description of the isolate: strain name, host, country, collection date

BioSample

Full ▾

Japan Antimicrobial Resistant Bacterial Surveillance isolate JBCBAAD-19-0056

Identifiers BioSample: [SAMD00499521](#); SRA: DRS299167

Organism [Escherichia coli](#)
cellular organisms; Bacteria; Pseudomonadota; Gammaproteobacteria; Enterobacterales; Enterobacteriaceae; Escherichia

Package [Pathogen: clinical or host-associated; version 1.0](#)

Attributes

sample name	JBCBAAD-19-0056
collected by	AMRRC, NIID
collection date	2020-04-08
geographic location	Japan:Gifu
host	Homo sapiens
host disease	missing
isolation source	urine from catheter
latitude and longitude	35.391149 N 136.722199 E
strain	JBCBAAD-19-0056

Databases within GenBank

- **Sequencing Run Archive (SRA):** largest repository of raw sequencing data
 - Contains raw reads (fastq files) and genomic assemblies (fasta files)
 - Accession numbers are given based on source database and type of record

Study (e.g., the SRA record associated with a specific BioProject): SRP#, ERP#, or DRP#

Sample (e.g., the SRA record associated with a specific BioSample): SRS#, ERS#, or DRS#

Experiment (e.g., the SRA record for a specific experiment or run(s)): SRX#, ERX#, or DRX#

Run (e.g., the SRA record for a specific run): SRR#, ERR#, or DRR#

- The first letter in the accession makes a notation of the source database - SRA, EBI, or DDBJ correspondingly

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Items: 131

[Illumina WGS of Klebsiella pneumoniae subsp. pneumoniae str. MRSN752317](#)
1. 1 ILLUMINA (NextSeq 500) run: 1M spots, 303.3M bases, 137.4Mb downloads
Accession: SRX10701983

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2. 1 ILLUMINA (NextSeq 500) run: 2.5M spots, 739.5M bases, 332.9Mb downloads
Accession: SRX10701982

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3. 1 ILLUMINA (NextSeq 500) run: 1.1M spots, 336.6M bases, 152.6Mb downloads
Accession: SRX10701981

[Illumina WGS of Klebsiella pneumoniae subsp. pneumoniae str. MRSN752325](#)
4. 1 ILLUMINA (Illumina MiSeq) run: 1.3M spots, 749.5M bases, 456.5Mb downloads

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RunInfo ▾

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3
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(131)	
	Klebsiella pne
	PRJNA72548
	131
	SRR1434801
	11080
	131
	Japan Antimic
	Surveillance i
	2

Downloading genomic data from SRA database: Using BioProject

- Click on the Run accession
- Click FASTA/FASTQ Download

SRX10701983: Illumina WGS of Klebsiella pneumoniae subsp pneumoniae str. MRSN752309
 1 ILLUMINA (NextSeq 500) run: 1M spots, 303.3M bases, 137.4Mb downloads

Design: gDNA extracted with MOBIO DNeasy UltraClean sequencing libraries prepared with KAPA HyperPlus pcr-free

Illumina WGS of Klebsiella pneumoniae subsp pneumoniae str. MRSN752309

[Metadata](#)
[Analysis](#)
[Reads](#)
[Data access](#)
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Download for Experiment SRX10701983

<input type="checkbox"/> Accession	Total Bases	Spots	
		Total	Filtered
<input checked="" type="checkbox"/> SRR14348003	303.3Mbases	1.0M	

Filter Runs

Search by sub-sequence,

[What can the filter be applied to?](#)

Download

Filtered
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Searching for specific AMR Pathogens

- NCBI Pathogen Detection (<https://www.ncbi.nlm.nih.gov/pathogens/>)

Matched Isolates													
Page 1 of 16733 Records per Page 20 Choose columns Download Show all AMR genotypes Expand all Cross-browser selection Displaying 1 - 20 of 334649													
Isolate identifiers	Serovar	Isolate	Create date	Locat...	Isolation source	Isolation ...	SNP cluster	Min-same	Min-diff	BioSample	Assembly	AMR genotypes c	Computed typ...
9 DHQP1300177 SRS1336145		PDT000130464.2	2016-05-16	USA: ...	urine	clinical	PDS000104567.11	15	n/a	SAMN04448227	GCA_022315655.1	Complete (38) aac(3)-IId aac(6')-Ib-cr5 aac(6')-Ib-cr Mistranslation (1) blaTEM blaNDM Partial end of cor aac(3)-IId aadA1 arr Point (4) gyrA_D87G gyrA_S83Y ompK36_D135 Show all 51 gene	
6	Hospital KP31166 SRS9032423	PDT001044042.1	2021-05-21	China...	balf	clinical	PDS000090969.2	2	n/a	SAMN19291395	GCA_021942045.1	Complete (42) aac(3)-IId aac(3)-IVa aac(6')-Ib-cr5 Partial (1) ble Partial end of cor aadA1 aph(3')-Ia blaTEM Point (2) gyrA_S83I parC_S80I Show all 51 gene	

Lists all E. coli with blaNDM



Quality Control of sequence data

- Always check the quality of publicly available sequence data
- For fastq files (raw reads)
 - Check quality of the reads
 - E.g., with FastQC
- For fasta files (assembled reads)
 - Check the quality of assembly
 - E.g., with QUAST

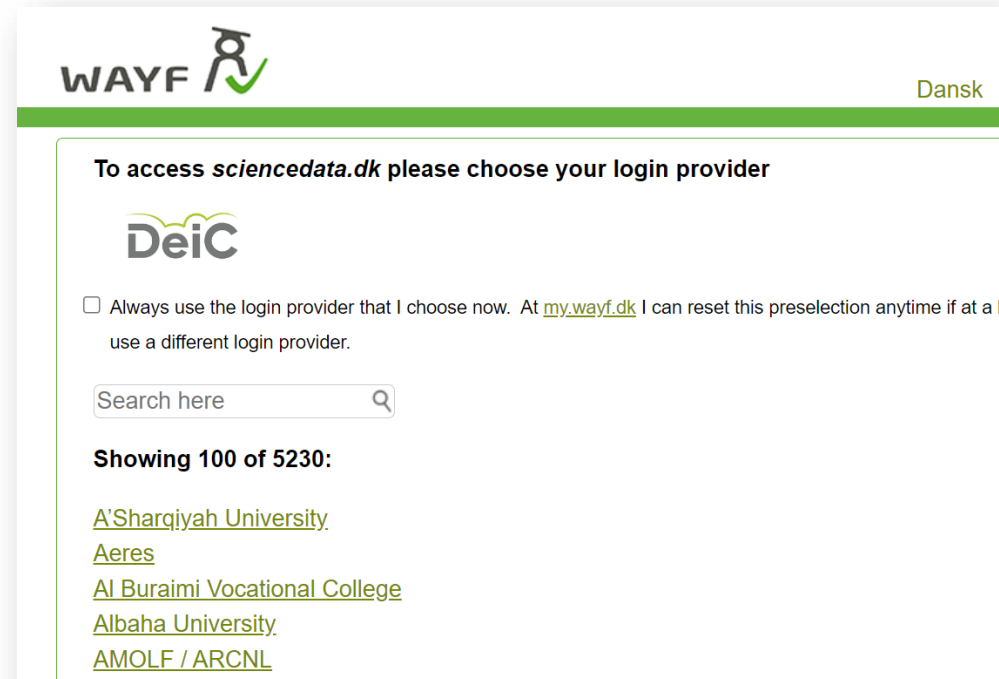
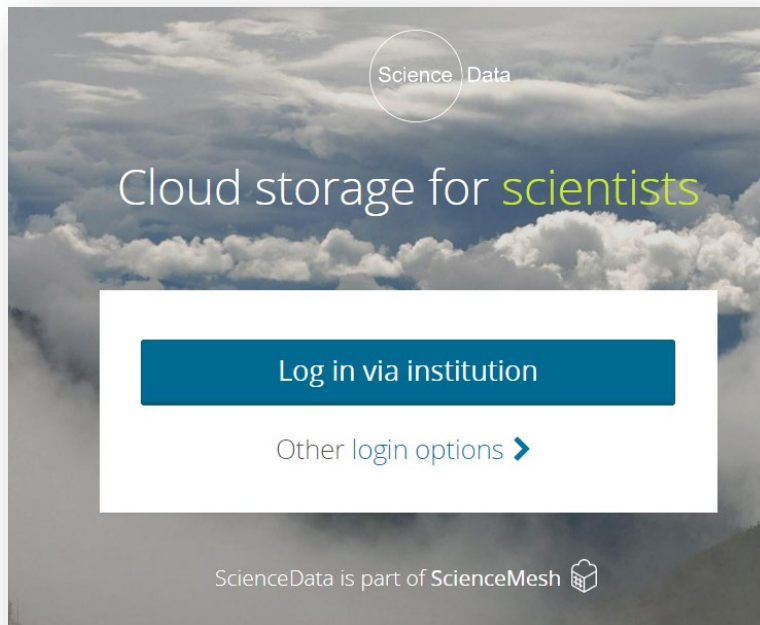
Sharing large sequence data- [ScienceData.dk](https://www.science-data.dk)

- WGS data can be hundreds of GBs in size
 - Cannot be shared via email
 - Need to be hosted on a cloud storage platform

- Provided by the Technical University of Denmark (DTU)
 - Mainly for Danish research institutes
 - Around 5200 institutes around the world can access ScienceData (eduGAIN member?)
 - 200GBs of free storage
 - Share large files with others via weblink

Sharing large sequence data- [ScienceData.dk](https://sciencedata.dk)

- <https://sciencedata.dk/>
- Log-in via institution
- Search your institution or country



Sharing large sequence data- EUDAT

- European Collaborative Data Infrastructure (EUDAT)
- B2DROP, the EUDAT's Personal Cloud Storage Service (<https://b2drop.eudat.eu>)
 - Access through institution?
 - Free 20GBs storage
 - Possibility to share data via weblink



Thank you!

Questions?

René S. Hendriksen

rshe@food.dtu.dk

Questions and wrapping up the day

EURGen-RefLabCap@food.dtu.dk

**Thank you on behalf of the
EURGen-RefLabCap team**