

Introduction to WGS in AMR surveillance – Day 2

Course offered by SEQAFRICA



17 February 2021

Pernille Nilsson

Virtual Housekeeping



Please **turn off your cameras and microphones** – this will help with bandwidth and maximise audibility.



Do frequently **use Slack** to share comments and ask questions. Keep the chat constructive, respectful and on topic!



For Q&A's **use Slack to submit your questions!** Please upvote (give a thumbs-up) to the questions that you like.



The session is being **recorded for distribution to participants** as a post course resource as well as for future reruns of the course.

Agenda

Wednesday 17th February 09:00 – 11:45



Day 2: Wednesday – 17 Feb 2021 – Quality control and bioinformatics		
Join Zoom for Day 2		
08.45 – 09.00	Joining the call – Assistance will be provided at this time to help participants join	
09.00 – 09.15	Welcome and Introduction (Live)	
09.15 – 09.45	[5] Basic quality control of raw reads (Pre-recorded Lecture)	Mushal Allam (NICD, South Africa)
09.45 – 10.15	[5E] Exercise: Basic quality control of raw reads using FastQC. A tutorial where you learn how to import, view and check the quality of a sequenced data using FastQC. (Live introduction) Note: You will perform the exercise on your own computer and submit replies through this SurveyMonkey link .	Mushal Allam (NICD, South Africa)
10.15 – 10.30	BREAK	
10.30 – 11.30	[6] Bioinformatics Basics: General introduction to bioinformatics and introducing genome assembly. What components/features of bacteria are used in genomic identification of species? (Pre-recorded Lecture)	Marco van Zwetselaar (KCRI, Tanzania)
11.30 – 11.45	Q&A and Wrap-up (Live)	

[5] Basic quality control of raw reads

Mushal Allam (NICD, South Africa)



[5E] Exercise in basic quality control of raw reads

Mushal Allam (NICD, South Africa)



[5E] Exercise in basic quality control of raw reads

In this session you will learn to import, view and check the quality of a sequenced data using [FastQC](#)

- Install FastQC in your computer:
FastQC has a graphical interface and can be downloaded and run on a Windows /Linux/Mac computer. It is available [here](#)
- Download the Fastq files or the raw data to your computer:
- The dataset you will be working with is an E.coli isolate sequenced in an Illumina platform. The dataset contain millions of reads and are therefore quite big. We are only going to use a subset (EC505_subset_R1.fastq.gz and EC505_subset_R1.fastq.gz) of the original dataset for this tutorial which are available via the [Jottacloud](#) link provided to you by email (~100MB, 2 files)
- Import EC505_subset_R1.fastq.gz and EC505_subset_R2.fastq.gz to FastQC
- To know how to run FastQC please refer to FastQC documentation [here](#)
- Run FastQC, look what it producing, and wait for the outputs
- For each fastq file, a .zip archive containing all the plots, and a .html report will be produced
- Open the .html files with your favourite web browser
- Study both files and FastQC results and answer the questions in the following survey:
<https://www.surveymonkey.com/r/5EBasicQC>



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BREAK



[6] Bioinformatics basics

Marco van Zwetselaar (KCRI, Tanzania)





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Q&A



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Agenda

Friday 19th February 09:00 – 11:30



Day 3: Friday – 19 Feb 2021 – Bioinformatics with online tools		
Join Zoom for Day 3		
08.45 – 09.00	Joining the call – Assistance will be provided at this time to help participants join	
09.00 – 09.15	Welcome and Introduction (Live)	
09.15 – 09.45	[7] Online tools 1: Introduction to online tools. Kmers, MLST and serotyping of Salmonella and E.coli	Stanford Kwenda (NICD, South Africa)
09.45 – 10.00	BREAK	
10.00 – 10.30	[8] Online tools 2: CGE Online Bioinformatics Tools. SpeciesFinder, KmerFinder, ResFinder.	Sonda Tolbert (KCRI, Tanzania)
10.30 – 11.00	[9] Online tools 3: Presentation of online tools available for microbial identification using sequence analysis: Pathogenwatch, autoMLST, pubMLST-ribosomal MLST	Anthony Smith (NICD, South Africa)
11.00 – 11.15	[9E] Exercise using online tools: Participants will download sequence data and tasked to perform analysis using the presented online tools. (Live introduction). To be handed in through this SurveyMonkey link prior to Day 5.	Anthony Smith (NICD, South Africa)
11.15 – 11.30	Q&A and Wrap-up (Live)	

Contact us for more information



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antimicrobialresistance.dk/seqafrica.aspx



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Thank you



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