



VERSION 2

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WORKS FOR ME

1

GenomeTrakr WGS Protocol Collection and Workflow for MiSeq V.2

COMMENTS 0

DOI

dx.doi.org/10.17504/protocols.io.3byl4bwyjvo5/v2

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ABSTRACT

Here we have created a collection of all the protocols used for WGS using the MiSeq, in order, from sample extraction to NCBI submission.

This collection has three sections:

- **Section 1: WGS Wet lab workflow for Illumina MiSeq**
- **Section 2: Dry lab workflow for sequence QC and NCBI submission - Direct Submission**
- **Section 3: Dry lab workflow for sequence QC and NCBI submission - PulseNet labs**

Associated protocols:

- [Querying the NCBI database for GenomeTrakr data \(protocols.io\)](#)
- [NCBI data curation protocol - SOP for editing GenomeTrakr submissions \(protocols.io\)](#)

DOI

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PROTOCOL CITATION

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Version created by Tina.Pfefer

KEYWORDS

GenomeTrakr, whole genome sequencing, enteric pathogens, surveillance, MiSeq

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Wet lab

1 WGS Wet lab workflow for Illumina MiSeq

2 DNA Extraction

Protocol



NAME

Manual DNA Extraction using Qiagen DNeasy Blood and Tissue Kit

CREATED BY

Julie Haendiges

[PREVIEW](#)

3 DNA Quantification

Protocol



NAME

DNA Quantification using the Qubit Fluorometer

CREATED BY

Julie Haendiges

[PREVIEW](#)

4 Library Preparation

Protocol



NAME

Illumina DNA Prep (M) Tagmentation Library Preparation for use on an Illumina MiSeq Sequencer

CREATED BY

Julie Haendiges

[PREVIEW](#)



5 Sequencing

Protocol



NAME

Procedure for Operation and Maintenance of the Illumina MiSeq for Whole Genome Sequencing

CREATED BY

Julie Haendiges

[PREVIEW](#)



Dry lab - Direct Submission

6 Dry lab workflow for sequence QC and NCBI submission - Direct Submission:

The following protocols are also included in a Springer Methods book chapter collection: [Utilizing the Public GenomeTrakr Database for Foodborne Pathogen Traceback \(protocols.io\)](#)

7 Check sequence quality:

Protocol



NAME

Quality control assessment for microbial genomes: GalaxyTrakr MicroRunQC workflow

CREATED BY

Ruth Timme

[PREVIEW](#)



8 Populate BioSample AND SRA metadata templates:

Protocol



NAME

Guidance for populating GenomeTrakr metadata templates (BioSample and SRA)

CREATED BY

Ruth Timme

[PREVIEW](#)



9 Submit sequence and metadata to NCBI:

Protocol



NAME

NCBI submission protocol for microbial pathogen surveillance

CREATED BY

Ruth Timme

[PREVIEW](#)



10 Update, retract, or replace these records in NCBI databases, if necessary:

Protocol



NAME

NCBI data curation protocol - SOP for editing GenomeTrakr submissions

CREATED BY

Ruth Timme

PREVIEW

Dry lab - PulseNet submission

11 Dry lab workflow for sequence QC and NCBI submission - PulseNet labs:

12 Check sequence quality:

Follow the CDC's guidance for assessing QC in BioNumerics

13 Populate NCBI template:

*****NOTE:** For NCBI submission for fields not included in the BioNumerics Template, please remember to include the name of the laboratory sequencing the isolates and the surveillance effort name in the **sequenced_by** and **project_name** fields as described in Step 5 of this protocol.

Protocol



NAME

Populating NCBI template for submissions using BioNumerics v7.6

CREATED BY

Maria Balkey

PREVIEW

14 Submit sequence and metadata to NCBI:

Follow the CDC's guidance for NCBI submissions through BioNumerics.

15 Update, retract, or replace these records in NCBI databases, if necessary:

Protocol



NAME

NCBI data curation protocol - SOP for editing GenomeTrakr submissions

CREATED BY

Ruth Timme

PREVIEW