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🌐 GenomeTrakr WGS Protocol Collection and Workflow for MiSeq

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May 12, 2022

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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

GenomeTrakr, whole genome sequencing, enteric pathogens, surveillance, MiSeq
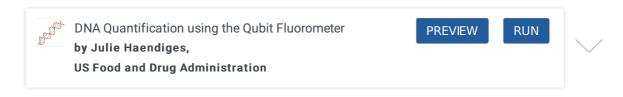
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1 **WGS Wet lab workflow for Illumina MiSeq**

2 **DNA Extraction**
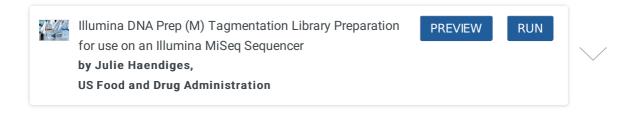
> Manual DNA Extraction using Qiagen DNeasy Blood and Tissue Kit
> **by Julie Haendiges,**
> **US Food and Drug Administration**
>
> PREVIEW   RUN

3 **DNA Quantification**

> DNA Quantification using the Qubit Fluorometer
> **by Julie Haendiges,**
> **US Food and Drug Administration**
>
> PREVIEW   RUN

4 **Library Preparation**

> Illumina DNA Prep (M) Tagmentation Library Preparation for use on an Illumina MiSeq Sequencer
> **by Julie Haendiges,**
> **US Food and Drug Administration**
>
> PREVIEW   RUN

5 **Sequencing**

	Procedure for Operation and Maintenance of the Illumina MiSeq for Whole Genome Sequencing **by Julie Haendiges,** **US Food and Drug Administration**	PREVIEW	RUN

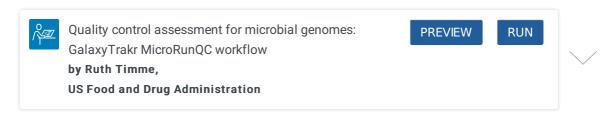**Dry lab - Direct Submission**

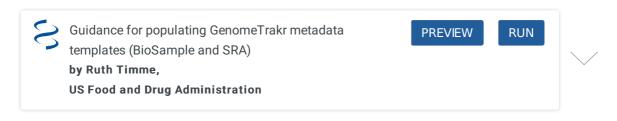6   **Dry lab workflow for sequence QC and NCBI submission - Direct Submission:**

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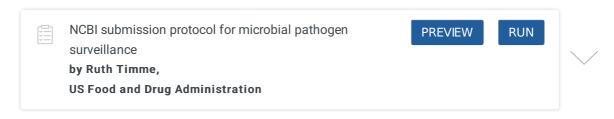[Utilizing the Public GenomeTrakr Database for Foodborne Pathogen Traceback (protocols.io)](#)

7   **Check sequence quality:**

	Quality control assessment for microbial genomes: GalaxyTrakr MicroRunQC workflow **by Ruth Timme,** **US Food and Drug Administration**	PREVIEW	RUN

8   **Populate BioSample AND SRA metadata templates:**

	Guidance for populating GenomeTrakr metadata templates (BioSample and SRA) **by Ruth Timme,** **US Food and Drug Administration**	PREVIEW	RUN

9   **Submit sequence and metadata to NCBI:**

	NCBI submission protocol for microbial pathogen surveillance **by Ruth Timme,** **US Food and Drug Administration**	PREVIEW	RUN

10 **Update, retract, or replace these records in NCBI databases, if necessary:**
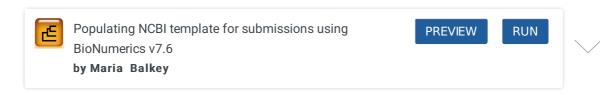
NCBI data curation protocol - SOP for editing GenomeTrakr submissions (protocols.io)

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:**

| | Populating NCBI template for submissions using BioNumerics v7.6 **by Maria Balkey** | PREVIEW | RUN | |

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:**

NCBI data curation protocol - SOP for editing GenomeTrakr submissions (protocols.io)