29 Sept 2025

Neissflow

Advanced Molecular Detection

Southeast Region Bioinformatics

This resource was made possible through funding provided under the Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC) Cooperative Agreement (CK24-0002), Project D: Advanced Molecular Detection to the Florida Department of Health. The conclusions, findings, and opinions expressed by authors do not necessarily reflect the official position of the U.S. Department of Health and Human Services, the Public Health Service, or the Centers for Disease Control and Prevention.

Overview

Purpose:

- This tool is developed for whole genome sequencing (WGS) analysis of *Neisseria meningitidis* (and subspecies), enabling standardized quality control, genome assembly, species confirmation, molecular typing (MLST), and antimicrobial resistance (AMR) profiling.

Usage:

- Can be used by public health laboratories and researchers for molecular typing, outbreak investigation, surveillance, and comparative genomic studies.

Dependencies:

- Nextflow
- Singularity/Apptainer
- Java
- Conda
- PubMLST DB

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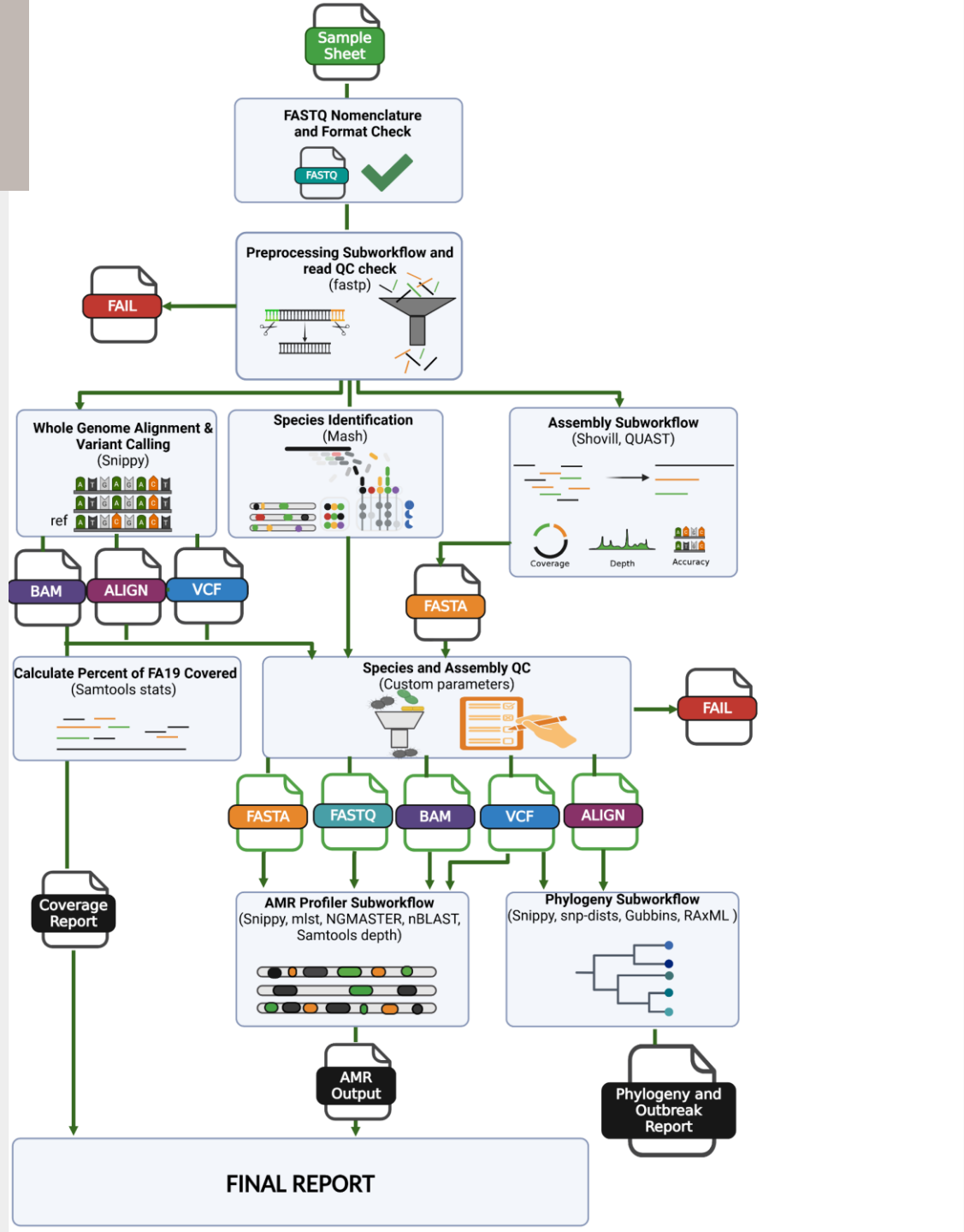
Workflow



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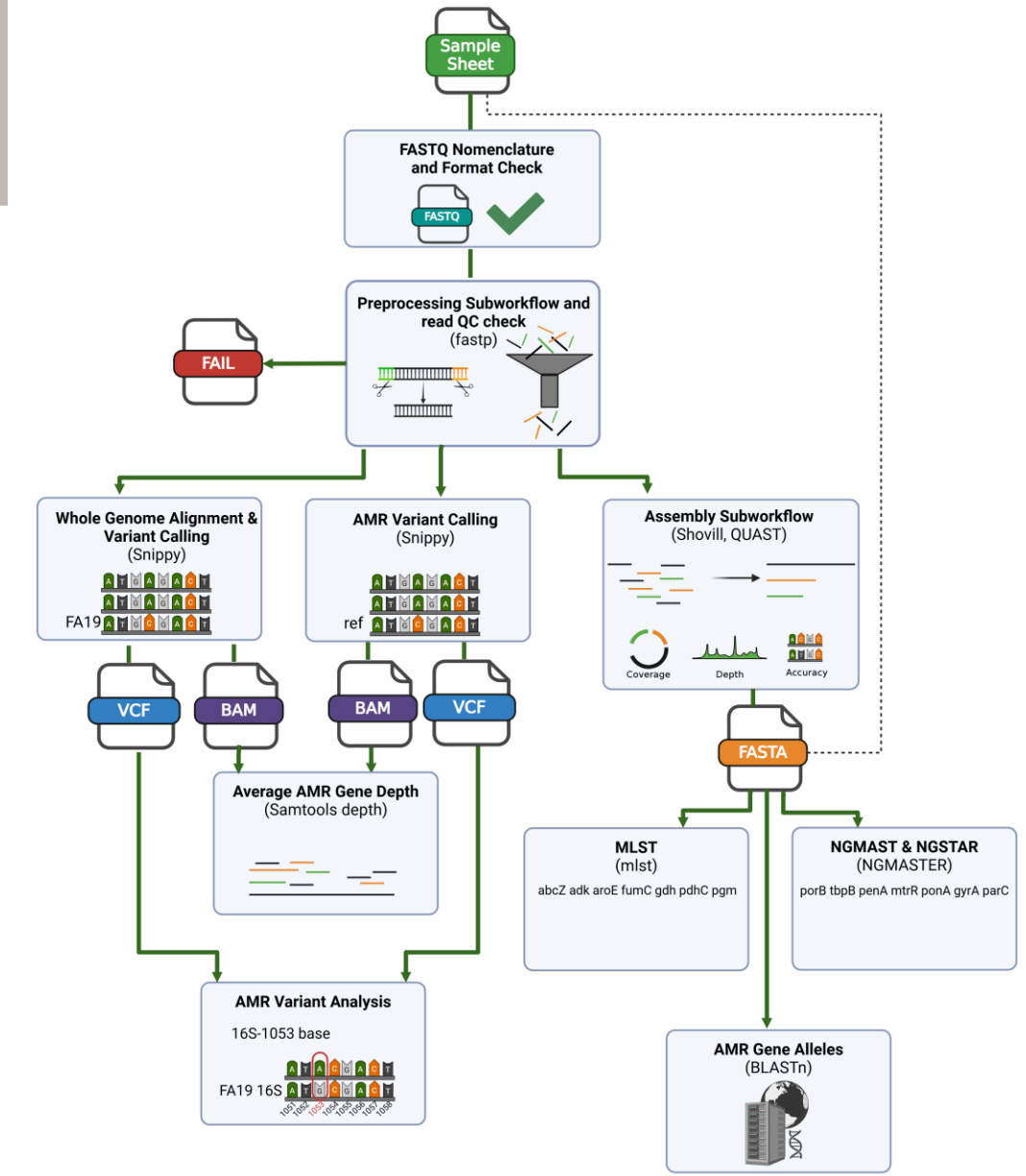
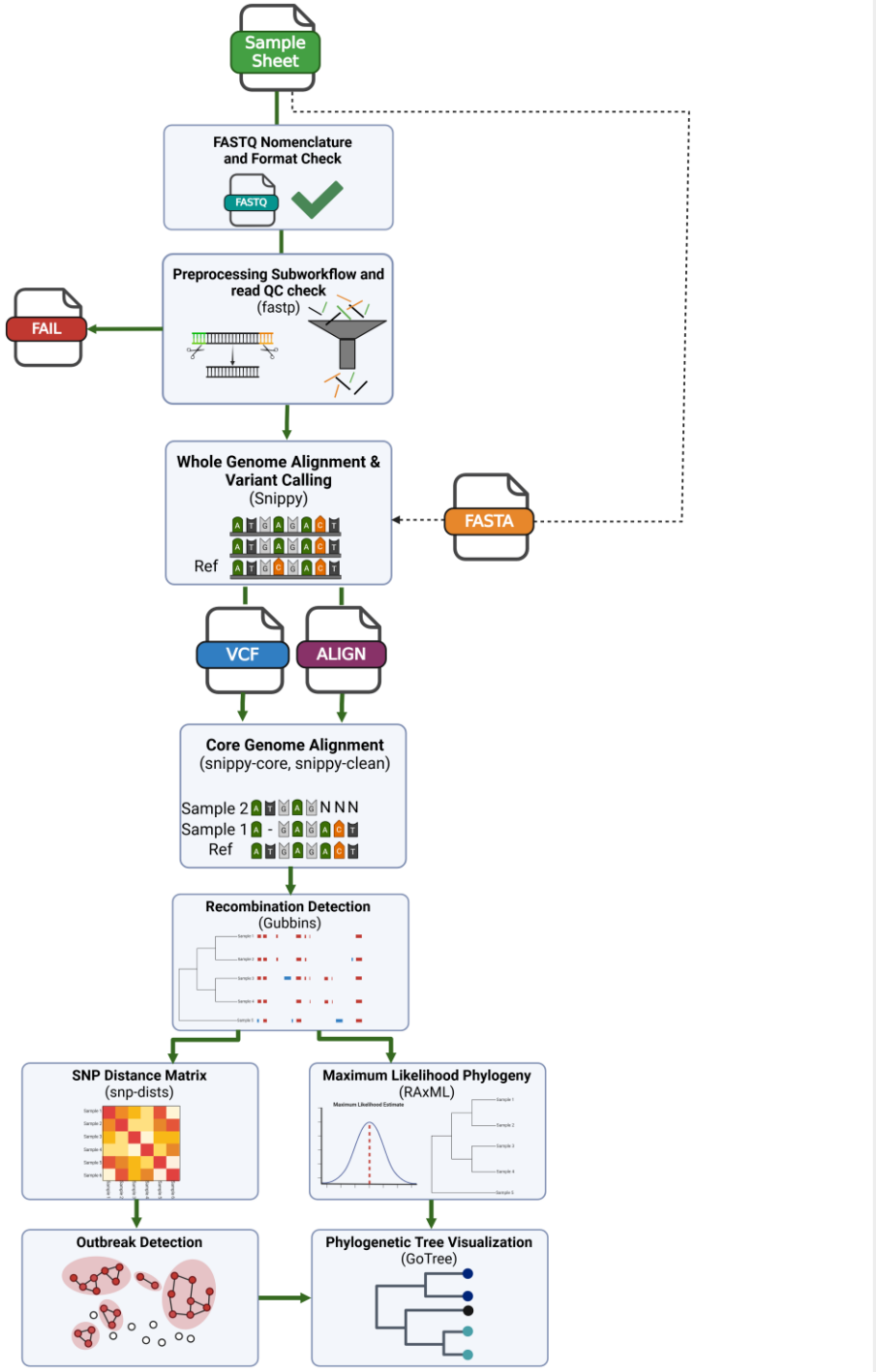
Workflow Cont.



Workflow Cont.



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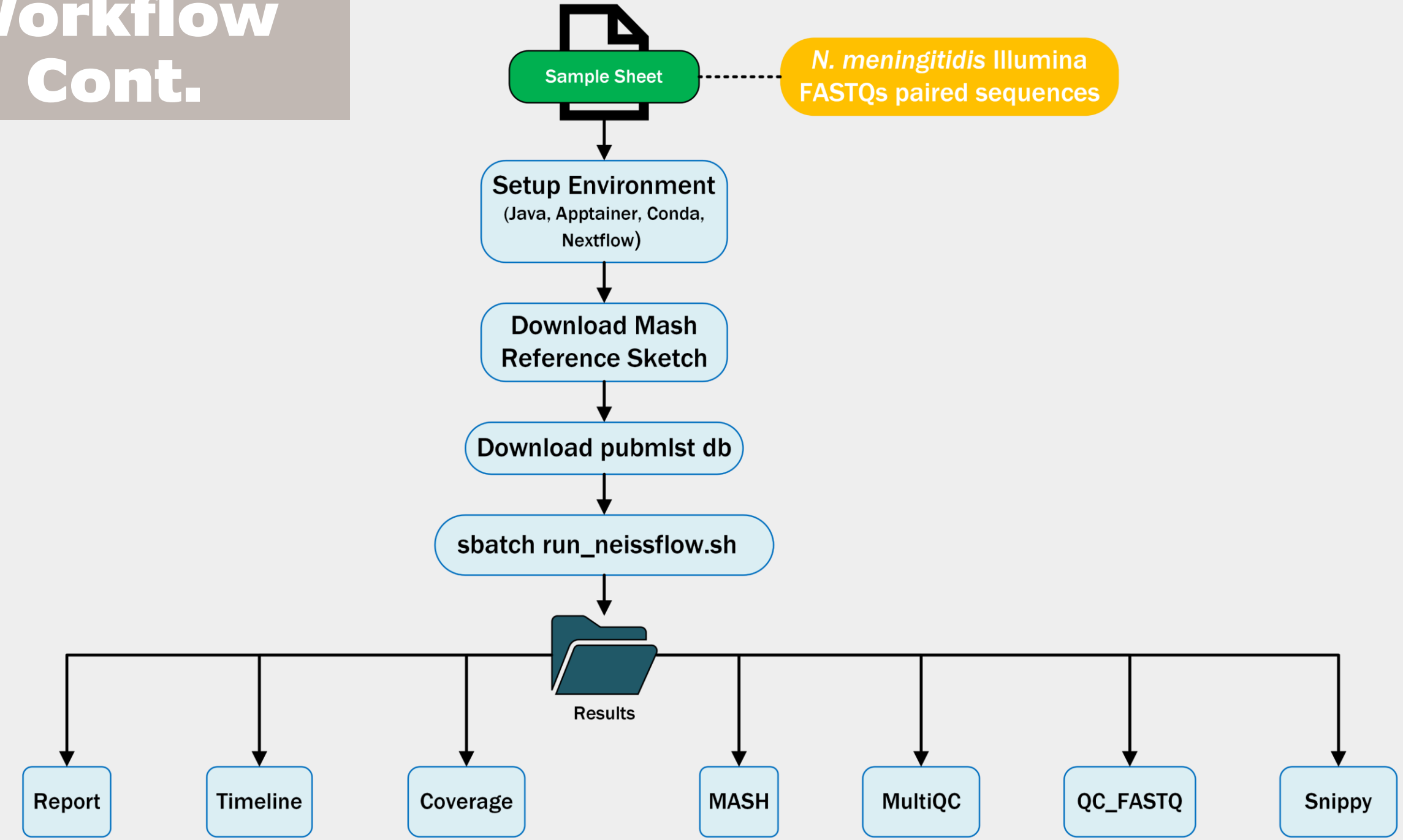
Workflow Cont.



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Application

Acquire *N. meningitidis* Illumina FASTQs paired sequences from NCBI database, use Neissflow to analyze the samples

Application Cont.

cd blue/bphl-<state>/<user>/repos/bphl-molecular/

git clone https://github.com/CDCgov/

mkdir analysis/

cd analysis/

cp /blue/bphl-<state>/<user>/repos/bphl-molecular/ neissflow/

wget https://gembox.cbcb.umd.edu/mash/RefSeqSketchesDefaults.msh.gz

gunzip RefSeqSketchesDefaults.msh.gz

mlst-download_pub_mlst –d /blue/bphl-<state>/<user>/repos/bphl-molecular/analysis/neissflow/pubmlst

/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/

Name

- ..
- assets
- bin
- conf
- data
- docs
- input
- logs
- modules
- pubmlst
- results
- subworkflows
- tmp
- work
- workflows
- CHANGELOG.md
- CITATIONS.md
- code-of-conduct.md
- CONTRIBUTING.md
- DISCLAIMER.md
- force_slurm_64gb.config
- LICENSE
- main.nf
- modules.json
- neissflow.13432233.err
- neissflow.13432233.out
- nextflow.config
- nextflow_schema.json
- open_practices.md
- README.md
- RefSeqSketchesDefaults.msh
- rules_of_behavior.md
- run_neissflow.sh
- thanks.md
- tower.yml

/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/

Name

- ..
- samplesheet.csv
- SRR35142010_R1.fastq.gz
- SRR35142010_R2.fastq.gz
- SRR35142011_R1.fastq.gz
- SRR35142011_R2.fastq.gz
- SRR35142012_R1.fastq.gz
- SRR35142012_R2.fastq.gz
- SRR35142013_R1.fastq.gz
- SRR35142013_R2.fastq.gz
- SRR35142014_R1.fastq.gz
- SRR35142014_R2.fastq.gz
- SRR35142015_R1.fastq.gz
- SRR35142015_R2.fastq.gz
- SRR35142016_R1.fastq.gz
- SRR35142016_R2.fastq.gz
- SRR35142017_R1.fastq.gz
- SRR35142017_R2.fastq.gz
- SRR35142018_R1.fastq.gz
- SRR35142018_R2.fastq.gz
- SRR35142019_R1.fastq.gz
- SRR35142019_R2.fastq.gz
- SRR35142020_R1.fastq.gz
- SRR35142020_R2.fastq.gz

```
sample,fastq_1,fastq_2
SRR35142010,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142010_R1.fastq.gz,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142010_R2.fastq.gz
SRR35142011,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142011_R1.fastq.gz,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142011_R2.fastq.gz
SRR35142012,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142012_R1.fastq.gz,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142012_R2.fastq.gz
SRR35142013,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142013_R1.fastq.gz,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142013_R2.fastq.gz
SRR35142014,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142014_R1.fastq.gz,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142014_R2.fastq.gz
SRR35142015,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142015_R1.fastq.gz,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142015_R2.fastq.gz
SRR35142016,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142016_R1.fastq.gz,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142016_R2.fastq.gz
SRR35142017,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142017_R1.fastq.gz,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142017_R2.fastq.gz
SRR35142018,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142018_R1.fastq.gz,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142018_R2.fastq.gz
SRR35142019,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142019_R1.fastq.gz,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142019_R2.fastq.gz
SRR35142020,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142020_R1.fastq.gz,/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/SRR35142020_R2.fastq.gz
```

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Application Cont.

```bash
#!/bin/bash
#SBATCH --account=bphl-umbrella
#SBATCH --qos=bphl-umbrella
#SBATCH --job-name=neissflow
#SBATCH --cpus-per-task=8
#SBATCH --mem=64gb
#SBATCH --time=48:00:00
#SBATCH --output=neissflow.%j.out
#SBATCH --error=neissflow.%j.err
#SBATCH --mail-user=nikhil.yengala@flhealth.gov
#SBATCH --mail-type=FAIL,END

# Modules / env
module load java/20
module load apptainer
module load git
module load conda
module load nextflow/24.04 || true
conda activate Nextflow || true

# Paths
PIPE_DIR="/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929"
OUT_DIR="$PIPE_DIR/results"
INPUT_CSV="$PIPE_DIR/input/samplesheet.csv"
PUBMLST_DB="$PIPE_DIR/pubmlst"
mash_db="$PIPE_DIR/RefSeqSketchesDefaults.msh"   # <-- Mash DB (.msh)
TMPDIR="$PIPE_DIR/tmp"
mkdir -p "$OUT_DIR" "$PIPE_DIR/logs" "$PUBMLST_DB" "$TMPDIR"
```

```bash
# Run
cd "$PIPE_DIR"

nextflow run "$PIPE_DIR/main.nf" \
  -profile singularity \
  -c "$PIPE_DIR/force_slurm_64gb.config" \
  --input "$INPUT_CSV" \
  --outdir "$OUT_DIR" \
  --mash_db "$mash_db" \
  --name "ng_run_$(date +%Y%m%d_%H%M)" \
  --max_memory '64.GB' \
  --max_cpus 8 \
  --max_time '48.h' \
  -with-report   "$OUT_DIR/report.html" \
  -with-trace    "$OUT_DIR/trace.txt" \
  -with-timeline "$OUT_DIR/timeline.html"

echo "[INFO] Run finished. Outputs in: $OUT_DIR"
```

/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/

Name

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- CHANGELOG.md
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- DISCLAIMER.md
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- LICENSE
- main.nf
- modules.json
- neissflow.13432233.err
- neissflow.13432233.out
- nextflow.config
- nextflow_schema.json
- open_practices.md
- README.md
- RefSeqSketchesDefaults.msh
- rules_of_behavior.md
- run_neissflow.sh
- thanks.md
- tower.yml

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Application Cont.

/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results/

Name
..
neissflow_out
pipeline_info
report.html
timeline.html
trace.txt

/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/

Name
..
assets
bin
conf
data
docs
input
logs
modules
pubmlst
results
subworkflows
tmp
work
workflows
CHANGELOG.md
CITATIONS.md
code-of-conduct.md
CONTRIBUTING.md
DISCLAIMER.md
force_slurm_64gb.config
LICENSE
main.nf
modules.json
neissflow.13432233.err
neissflow.13432233.out
nextflow.config
nextflow_schema.json
open_practices.md
README.md
RefSeqSketchesDefaults.msh
rules_of_behavior.md
run_neissflow.sh
thanks.md
tower.yml

Nextflow workflow report

[tiny_khorana]

Workflow execution completed successfully!

Run times

19-Sep-2025 19:25:03 - 19-Sep-2025 21:09:41 (duration: **1h 44m 38s**)

71 succeeded

Nextflow command

```
nextflow run /blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/main.nf -profile singularity -c /blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/force_slurm_64gb.config --input /blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/input/samplesheet.csv --outdir /blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results --mash_db /blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/RefSeqSketchesDefaults.msh --name ng_run_20250919_1924 --max_memory 64.GB --max_cpus 8 --max_time 48.h -with-report /blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results/report.html -with-trace /blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results/trace.txt -with-timeline /blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results/timeline.html
```

CPU-Hours	1.9
Launch directory	/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929
Work directory	/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/work
Project directory	/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929
Script name	main.nf
Script ID	93f13dad4b7f5a348c1bf7f43947ca0d
Workflow session	35a9474d-5a84-457d-890f-77d59b943008
Workflow profile	singularity
Nextflow version	version 24.10.2, build 5932 (27-11-2024 21:23 UTC)

sbatch run_neissflow.sh

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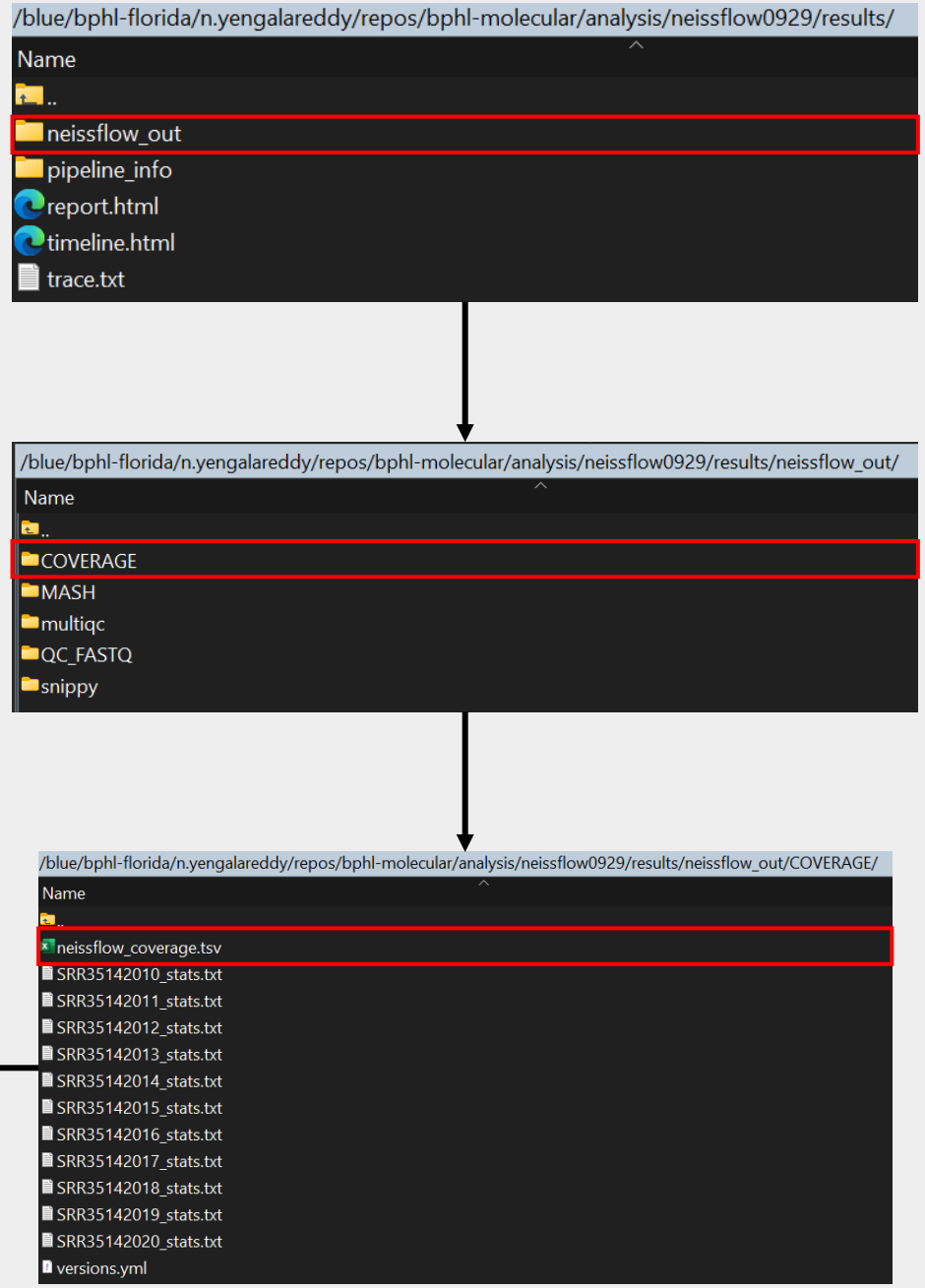
Application Cont.

ID	%target>10x
SRR35142014	77.89
SRR35142012	78.62
SRR35142015	80.27
SRR35142010	78.07
SRR35142011	76.33
SRR35142016	77.66
SRR35142013	76.24
SRR35142017	77.33
SRR35142019	77.69
SRR35142018	77.88
SRR35142020	77.71



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Application Cont.

/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results/neissflow_out/

Name
..
COVERAGE
MASH
multiqc
QC_FASTQ
snippy

/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results/neissflow_out/MASH/

Name
..
neissflow_Mash_contaminants.tsv
neissflow_Mash_plasmids.tsv
neissflow_Mash_top_hit_report.tsv
SRR35142010.tsv
SRR35142011.tsv
SRR35142012.tsv
SRR35142013.tsv
SRR35142014.tsv
SRR35142015.tsv
SRR35142016.tsv
SRR35142017.tsv
SRR35142018.tsv
SRR35142019.tsv
SRR35142020.tsv
versions.yml

ID	ident	hashes	median_mult	p_val	hit_name
SRR35142011	0.98551	736/1000	37	0	Neisseria_meningitidis_NM2781
SRR35142010	0.988479	784/1000	69	0	Neisseria_meningitidis_M13399
SRR35142013	0.996703	933/1000	79	0	Neisseria_meningitidis_NM2657
SRR35142012	0.989548	802/1000	77	0	Neisseria_meningitidis_M13399
SRR35142015	0.984738	724/1000	60	0	Neisseria_meningitidis_M01_240355
SRR35142014	0.987936	775/1000	83	0	Neisseria_meningitidis_M13399
SRR35142016	0.99756	950/1000	71	0	Neisseria_meningitidis_CU385
SRR35142017	0.993985	881/1000	103	0	Neisseria_meningitidis_NM2795
SRR35142019	0.999905	998/1000	195	0	Neisseria_meningitidis_S0108
SRR35142020	0.99489	898/1000	84	0	Neisseria_meningitidis_NS44
SRR35142018	0.99489	898/1000	87	0	Neisseria_meningitidis_NS44

Application Cont.

/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results/neissflow_out/

Name
..
COVERAGE
MASH
multiqc
QC_FASTQ
snippy

/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results/neissflow_out/multiqc/

Name
..
multiqc_data
multiqc_plots
multiqc_report.html
versions.yml

multiqc

A modular tool to aggregate results from bioinformatics analyses across many samples into a single report.

This report has been generated by the nf-core/neissflow analysis pipeline. For information about how to interpret these results, please see the documentation.

Report generated on 2025-09-19, 21:09 EDT based on data in: /blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/work/cb/15609a9300d3f25b2b9a0d748a0dfc

Welcome! Not sure where to start? Watch a tutorial video (6:06) don't show again

General Statistics

Copy table | Configure columns | Scatter plot | Violin plot | Showing 22/22 rows and 5/6 columns. | Export as CSV

Sample Name	# Variants	% Duplication	M Reads After Filtering	GC content	% PF	% Adapter
SRR35142010	49582					
SRR35142010_R1		1.1%	1.2M	51.2%	88.2%	0.5%
SRR35142011	48495					
SRR35142011_R1		0.9%	0.7M	51.0%	89.3%	0.5%
SRR35142012	50084					
SRR35142012_R1		1.3%	1.4M	51.4%	89.4%	0.4%
SRR35142013	49706					
SRR35142013_R1		0.5%	0.8M	50.9%	81.2%	0.6%
SRR35142014	49905					
SRR35142014_R1		1.4%	1.4M	51.9%	89.8%	0.4%
SRR35142015	51381					
SRR35142015_R1		1.0%	1.1M	50.8%	88.8%	0.6%
SRR35142016	49872					
SRR35142016_R1		1.2%	1.2M	51.3%	88.7%	0.5%
SRR35142017	50296					

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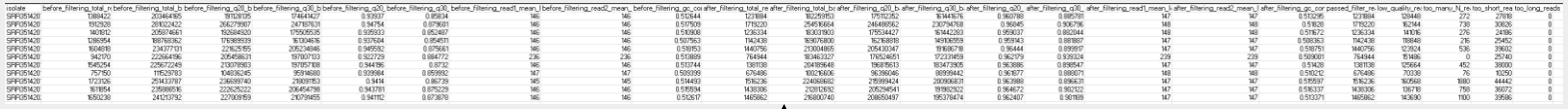
Application Cont.



/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results/neissflow_out/

Name
..
COVERAGE
MASH
multiqc
QC_FASTQ
snippy

/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results/neissflow_out/QC_FASTQ/

Name
..
Reports
Samples

/blue/bphl-florida/n.yengalareddy/repos/bphl-molecular/analysis/neissflow0929/results/neissflow_out/QC_FASTQ/Reports/

Name
..
neissflow_failed_qc1.tsv
neissflow_FASTQ_QC_report.tsv
neissflow_passed_qc1.tsv

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Application Cont.

CHROM	POS	TYPE	REF	ALT	EVIDENCE	FTYPE	STRAND	NT_POS	AA_POS	EFFECT	LOCUS_TAG	GENE	PRODUCT
CP012026	53	complex	CG	TT	TT:51 CG:0	CDS	+	27/861	9/286	missense_variant c.27_28delCGinsTT p.Val10Leu	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	89	complex	TTCC	CTCA	CTCA:61 TTCC:0	CDS	+	63/861	21/286	synonymous_variant c.63_66delTTCCinsCTCA p.23	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	182	snp	G	C	C:47 G:0	CDS	+	156/861	52/286	synonymous_variant c.156G>C p.Arg52Arg	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	233	snp	T	C	C:56 T:0	CDS	+	207/861	69/286	synonymous_variant c.207T>C p.Ser69Ser	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	275	snp	A	C	C:33 A:0	CDS	+	249/861	83/286	missense_variant c.249A>C p.Gln83His	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	291	complex	GATTCA	AATCAG	AATCAG:49 GATTCA:0	CDS	+	265/861	89/286	missense_variant c.265_270delGATTCAinsAATCAG p.Asp89Asn91Gln	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	304	snp	G	A	A:55 G:0	CDS	+	278/861	93/286	missense_variant c.278G>A p.Arg93Gln	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	334	snp	T	C	C:41 T:0	CDS	+	330/861	110/286	synonymous_variant c.330T>C p.Leu110Leu	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	363	complex	ATCAACATC	GTTAATATA	GTTAATATA:51 ATCAACATC:0	CDS	+	337/861	113/286	missense_variant c.337_345delATCAACATCinsGTTAATATA p.Ile113Val	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	377	snp	G	A	A:63 G:0	CDS	+	351/861	117/286	synonymous_variant c.351G>A p.Gly117Gly	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	385	complex	CGTA	TGTG	TGTG:37 CGTA:0	CDS	+	359/861	123/286	synonymous_variant c.359_372delCGTAinsTGTG p.125	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	419	complex	CC	TT	TT:53 CC:0	CDS	+	393/861	131/286	synonymous_variant c.393_394delCCinsTT p.133	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	448	snp	T	C	C:70 T:0	CDS	+	420/861	140/286	synonymous_variant c.420T>C p.Arg140Arg	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	554	snp	C	A	A:46 C:0	CDS	+	528/861	176/286	synonymous_variant c.528C>A p.Pro176Pro	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	651	complex	GCAGGAAGGGTTA	ACAAAAAGAGCGT	ACAAAAAGAGCGT:36 GCAGGAAGGGTTA:0	CDS	+	625/861	209/286	missense_variant c.625_637delGCAGGAAGGGTTAinsACAAAAAGAGCGT p.AlaGlyArg/ValThr209ThrLysArgAlaSer	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	675	snp	AAA	TCG	TCG:37 AAA:0	CDS	+	649/861	217/286	missense_variant c.649_651delAAAinsTCG p.Lys217Ser	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	660	snp	T	C	C:47 T:0	CDS	+	660/861	220/286	synonymous_variant c.660T>C p.Arg220Arg	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	669	snp	T	C	C:51 T:0	CDS	+	669/861	223/286	synonymous_variant c.669T>C p.Ala223Ala	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	788	snp	T	C	C:56 T:0	CDS	+	762/861	254/286	synonymous_variant c.762T>C p.Thr254Thr	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	848	snp	G	A	A:53 G:0	CDS	+	822/861	274/286	synonymous_variant c.822G>A p.Pro274Pro	V7T05_00001	lbpA_1	Lactoferrin-binding protein A precursor
CP012026	895	snp	G	A	A:58 G:0								
CP012026	903	snp	G	A	A:54 G:0								
CP012026	972	snp	A	G	G:44 A:0								
CP012026	1017	snp	CG	TA	TA:29 CG:0								
CP012026	1069	snp	C	T	T:10 C:0								
CP012026	1343	snp	G	A	A:32 G:0								
CP012026	1369	snp	G	A	A:38 G:0	CDS	-	620/627	207/208	missense_variant c.620C>T p.Ser207Phe	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1401	snp	G	A	A:43 G:0	CDS	-	588/627	196/208	synonymous_variant c.588C>T p.Val196Val	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1412	complex	GG	CA	CA:45 GG:0	CDS	-	577/627	192/208	missense_variant c.576_577delCCinsTG p.Pro193Ala	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1422	snp	G	T	T:49 G:0	CDS	-	567/627	189/208	synonymous_variant c.567C>A p.Gly189Gly	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1428	complex	AGAC	CGAT	CGAT:48 AGAC:0	CDS	-	561/627	188/208	missense_variant c.558_561delGTCTinsATCG p.188	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1452	snp	G	A	A:46 G:0	CDS	-	537/627	179/208	synonymous_variant c.537C>T p.Asp179Asp	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1521	snp	C	T	T:54 C:0	CDS	-	468/627	156/208	synonymous_variant c.468G>A p.Val156Val	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1530	snp	C	T	T:40 C:0	CDS	-	459/627	153/208	synonymous_variant c.459G>A p.Lys153Lys	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1550	snp	A	G	G:62 A:0	CDS	-	439/627	147/208	synonymous_variant c.439T>C p.Leu147Leu	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1596	complex	GTGA	ATGG	ATGG:70 GTGA:0	CDS	-	393/627	130/208	synonymous_variant c.390_393delTCACinsCCAT p.132	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1611	snp	C	A	A:69 C:0	CDS	-	378/627	126/208	synonymous_variant c.378G>T p.Leu126Leu	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1628	snp	T	C	C:70 T:0	CDS	-	361/627	121/208	missense_variant c.361A>G p.Asn121Asp	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1658	snp	CGT	GTC	GTC:47 CGT:0	CDS	-	331/627	111/208	missense_variant c.349_351delACGinsGAC p.Thr117Asp	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1664	snp	C	T	T:74 C:0	CDS	-	325/627	109/208	missense_variant c.325G>A p.Ala109Thr	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1683	complex	TTTA	CTTG	CTTG:61 TTTA:0	CDS	-	306/627	101/208	synonymous_variant c.303_306delTAAAinsCAAG p.103	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1700	snp	C	G	G:62 C:0	CDS	-	289/627	97/208	missense_variant c.289G>C p.Asp97His	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1707	snp	C	A	A:58 C:0	CDS	-	282/627	94/208	synonymous_variant c.282G>T p.Arg94Arg	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	1718	complex	CA	TG	TG:52 CA:0	CDS	-	271/627	90/208	missense_variant c.270_271delTGinsCA p.Ala91Thr	V7T05_00002	trpF	N-(5'-phosphoribosyl)anthranilate isomerase
CP012026	2013	snp	T	C	C:41 T:0								
CP012026	2023	snp	TG	CA	CA:50 TG:0								
CP012026	2095	snp	G	C	C:75 G:0	CDS	-	444/492	148/163	synonymous_variant c.444C>G p.Gly148Gly	V7T05_00003	greB	Transcription elongation factor GreB
CP012026	2146	snp	G	A	A:72 G:0	CDS	-	393/492	131/163	synonymous_variant c.393C>T p.Cys131Cys	V7T05_00003	greB	Transcription elongation factor GreB
CP012026	2152	snp	C	A	A:71 C:0	CDS	-	387/492	129/163	synonymous_variant c.387G>T p.Ala129Ala	V7T05_00003	greB	Transcription elongation factor GreB
CP012026	2157	snp	A	G	G:75 A:0	CDS	-	382/492	128/163	synonymous_variant c.382T>C p.Leu128Leu	V7T05_00003	greB	Transcription elongation factor GreB
CP012026	2205	snp	C	T	T:72 C:0	CDS	-	334/492	112/163	missense_variant c.334G>A p.Val112Ile	V7T05_00003	greB	Transcription elongation factor GreB
CP012026	2272	snp	T	C	C:74 T:0	CDS	-	287/492	89/163	synonymous_variant c.287A>G p.Val89Val	V7T05_00003	greB	Transcription elongation factor GreB
CP012026	2305	snp	G	A	A:74 G:0	CDS	-	254/492	75/163	synonymous_variant c.254C>T p.Val75Val	V7T05_00003	greB	Transcription elongation factor GreB
CP012026	2317	complex	AGCC	GGCT	GGCT:77 AGCC:0	CDS	-	222/492	73/163	synonymous_variant c.219_222delGCCTinsAGCC p.75	V7T05_00003	greB	Transcription elongation factor GreB
CP012026	2329	snp	T	C	C:81 T:0	CDS	-	210/492	70/163	synonymous_variant c.210A>G p.Lys70Lys	V7T05_00003	greB	Transcription elongation factor GreB
CP012026	2481	snp	A	G	G:71 A:0	CDS	-	78/492	26/163	synonymous_variant c.78T>C p.Asn26Asn	V7T05_00003	greB	Transcription elongation factor GreB
CP012026	2500	snp	G	T	T:70 G:0	CDS	-	59/492	13/163	synonymous_variant c.39C>A p.Gly13Gly	V7T05_00003	greB	Transcription elongation factor GreB
CP012026	2541	snp	C	T	T:92 C:0								
CP012026	2599	snp	AA	GG	GG:82 AA:0								
CP012026	2708	snp	G	C	C:66 G:0	CDS	-	1475/1545	492/514	missense_variant c.1475C>G p.Ala492Gly	V7T05_00004	purF	Amidophosphoribosyltransferase
CP012026	2748	snp	C	T	T:63 C:0	CDS	-	1435/1545	478/514	missense_variant c.1433G>A p.Arg478Gln	V7T05_00004	purF	Amidophosphoribosyltransferase
CP012026	2839	snp	C	T	T:57 C:0	CDS	-	1344/1545	448/514	synonymous_variant c.1344G>A p.Leu448Leu	V7T05_00004	purF	Amidophosphoribosyltransferase

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- MASH
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- QC_FASTQ
- snippy

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- SRR35142012
- SRR35142013
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- SRR35142018
- SRR35142019
- SRR35142020

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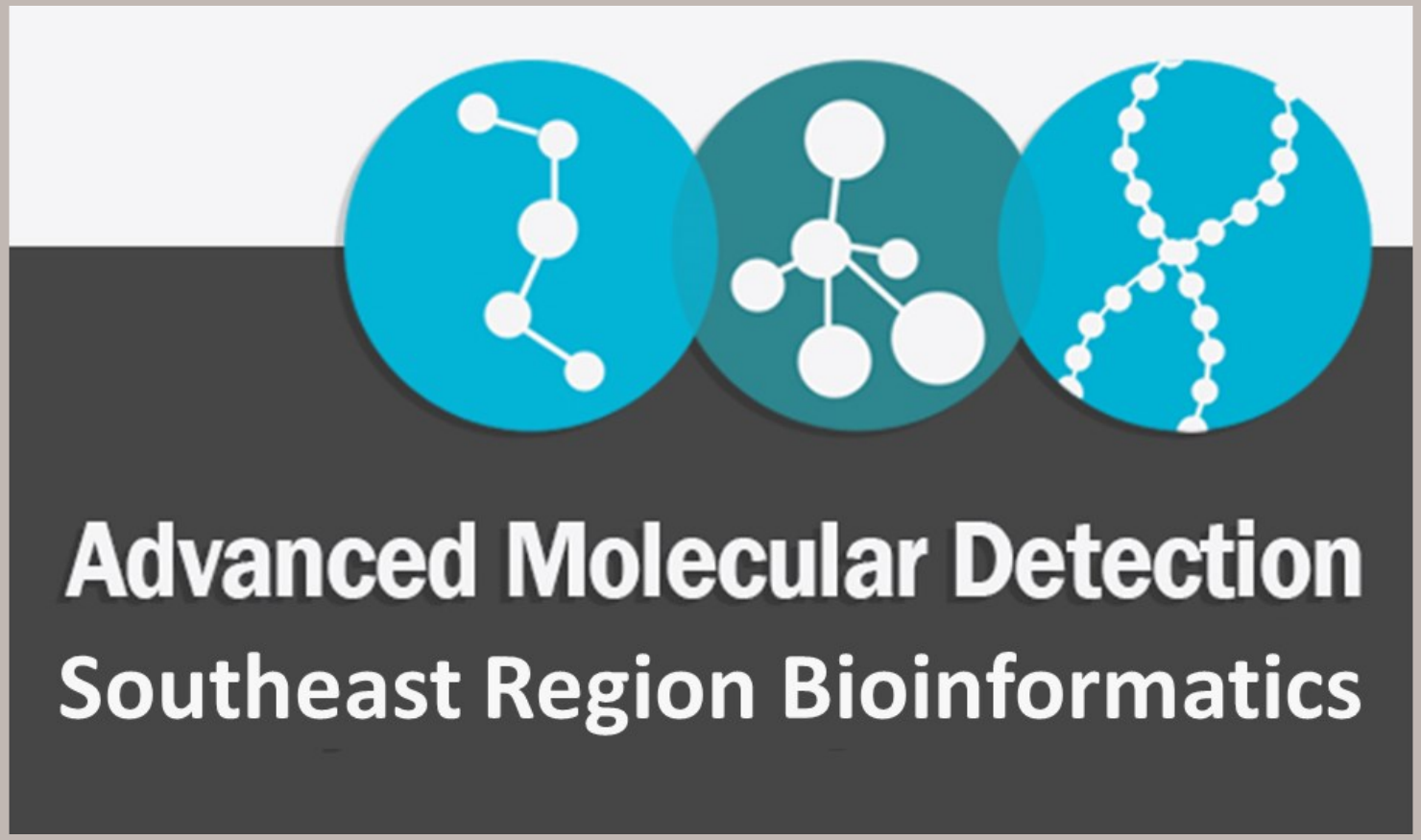
- SRR35142010.bam
- SRR35142010.bam.bai
- SRR35142010.bed
- SRR35142010.consensus.fa
- SRR35142010.consensus.subs.fa
- SRR35142010.csv
- SRR35142010.filt.vcf
- SRR35142010.gff
- SRR35142010.html
- SRR35142010.log
- SRR35142010.raw.vcf
- SRR35142010.subs.vcf
- SRR35142010.tab
- SRR35142010.txt
- SRR35142010.vcf
- SRR35142010.vcf.gz
- SRR35142010.vcf.gz.csi

Advanced Molecular Detection
Southeast Region Bioinformatics

Conclusion

- Fundamentals of Neissflow
- Installation and setup of Neissflow in HPG
- Successfully executed job query for Neissflow
- Generated output files



Questions?

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