

VICAST-Annotate

Genome Preparation (run once per virus)

Download Reference Genome
NCBI GenBank / FASTA

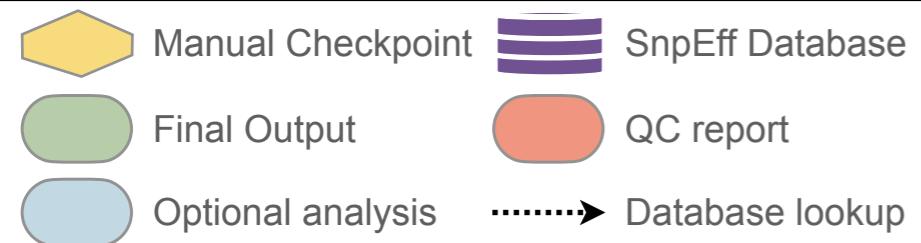
Generate Gene Annotations
4 pathways: pre-built, parse GenBank,
BLASTx-based, segmented genomes

Manual Curation

Build SnpEff Database

or install pre-built genome

Custom
SnpEff
Database



VICAST-Analyze

Variant Calling & Annotation (run per sample)

Paired end reads
FASTQ

QC & Trimming
fastp

De novo Assembly
MEGAHIT

Alignment
bwa mem

Contamination Screen
BLASTN vs 18,804 seq DB

Variant Calling
lofreq

Checkpoint 2

Variant Filtering
frequency, depth, quality

Annotation
SnpEff

Contamination Report

Annotated Variants
VCF • TSV • HTML Report

Advanced:
Haplotype Consensus & Co-occurrence Validation