

Input

ONT long read
fast5 format

Illimina short read
fastq format

Preprocessing

Basecalling
Guppy

Trim and demultiplex
Guppy

Assembling

Map to genome
Minimap2

Splice junction correction
StringTie

Isoform detection
FLAMES

Map to genome
Hisat2

Isoform detection
StringTie

Annotaing
LncRNA

Domain annotation
Pfam

Coding potential
CPC

Domain annotation
Pfam

Coding potential
CPC

Differential analysis

Gene-level quantification
FeatureCounts

Differential gene expression
DESeq2

Gene-level quantification
FeatureCounts

Differential gene expression
DESeq2

Modification

DNA modification m5C
Tombo

DNA modification m6A
Tombo + MINES

Poly A
nanopolish