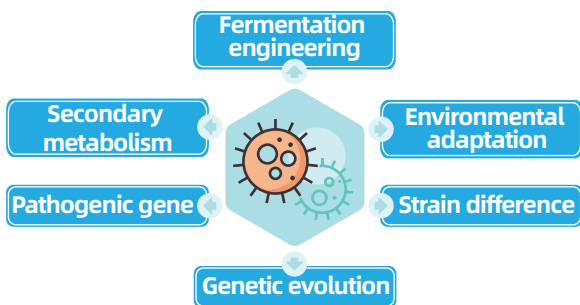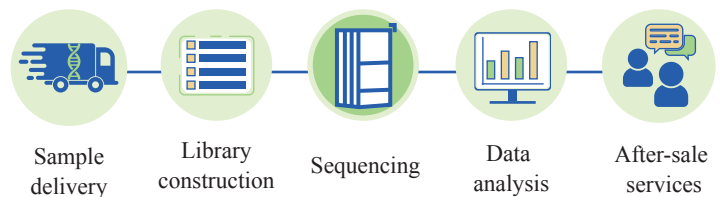# Bacterial Genome Sequencing

Tailored to meet various research goals, BMKGENE offers genome sequencing and assembly services for bacteria, including whole genome, draft genome, and complete genome. By combining next-generation sequencing with third-generation sequencing data, to achieve high-quality genome assembly and accurate functional annotation. For complete bacterial genome assembly, BMKGENE guarantees 0 gap, providing researchers with a comprehensive understanding of their target bacteria.

Application

- Fermentation engineering
- Secondary metabolism
- Environmental adaptation
- Pathogenic gene
- Strain difference
- Genetic evolution

Service Workflow

Sample delivery → Library construction → Sequencing → Data analysis → After-sale services

Bacterial Genome Solutions

Option 1 Genome re-sequencing:
- Bacterial whole genome sequencing(WGS): SNP calling.

Option 2 Genome assembly:
- Bacterial Draft Genome (NGS): Genome com-ponent analysis and function annotation.
- Bacterial Complete Genome (TGS+NGS): Genome component analysis, function annota-tion, and circos of genome.

Service Advantages

- Multiple sequencing strategies are available for different bacterial genome research goals.
- The species identification and classification of bacteria are conducted to study their evolutionary relationships and more.
- Bacteria complete genome sequencing by PacBio or ONT platform with **0 Gap** guaranteed.
- Highly experienced in bacterial genome assembly with over 10,000 microbial genomes assembled.
- Professional after-sale technical support team fulfilling more specific research needs.

Service Specifications ·····

Library	Read Length	Recommended Strategy	Assembly
Illumina	PE150	100X NGS	Draft map
PacBio	HiFi-15 Kb	30X HiFi	Complete map 0-Gap
Nanopore	10-20 Kb	100X ONT + 50X NGS	Complete map 0-Gap

Sample Requirements ·····

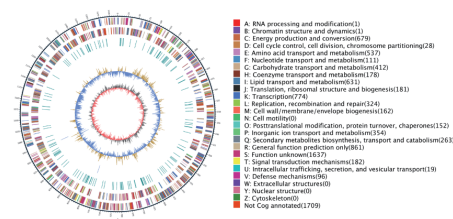| Platform	Qubit Conc. (ng/μL)	Amount (μg)	Volume (μL)	Purity
Illumina	1	0.06	20	OD260/280: 1.7-2.2;
PacBio	20	1.2	20	OD260/230: ≥ 1.0;
Nanopore	40	2	20	Nanodrop/Qubit: 0.8-2.5

Demo Results ·····
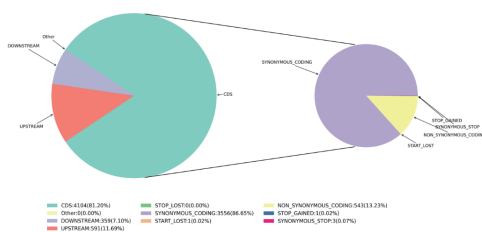
1.SNP classification and annotation
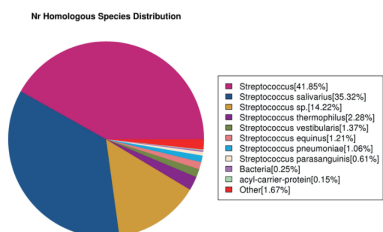
2. Coding gene annotation

3. Genome visualization

Featured Publications ·····

Year	Journal	Article	Applications	DOI
2023	Science Advances	Ampicillin-controlled glucose metabolism manipulates the transition from tolerance to resistance in bacteria	Bacterial resistance	10.1126/sciadv.ade8582
2023	International Journal of Molecular Sciences	Discovery of Bacteroides uniformis F18-22 as a Safe and Novel Probiotic Bacterium for the Treatment of Ulcerative Colitis from the Healthy Human Colon	Disease treatment	10.3390/ijms241914669
2022	Science of The Total Environment	Integrative chemical and omics analysis of the ammonia nitrogen removal characteristics and mechanism of a novel oligotrophic heterotrophicnitrification-aerobic denitrification bacterium	Pollution treatment	10.1016/j.scitotenv. 2022.158519

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