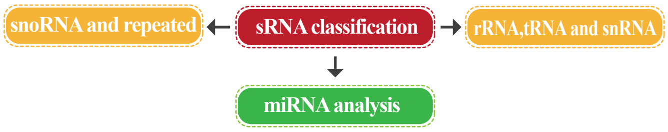
BMKGENE

Small RNA Sequencing

Small RNA, including microRNA (miRNA), small interference RNA (siRNA), and piwi-interacting RNA (piRNA), holds immense potential for cellular regulation. Among them, miRNA is endogenous small RNA with lengths of 20-24 nt that plays a crucial role in various biological processes, including cell cycle regulation, development, cell differentiation, and immune response. Additionally, miRNA is closely associated with the occurrence and progression of various diseases.With BMKGENE, unveil tissue-specific and stage-specific expression patterns and their conservation of miRNA in different species.

Technical Features

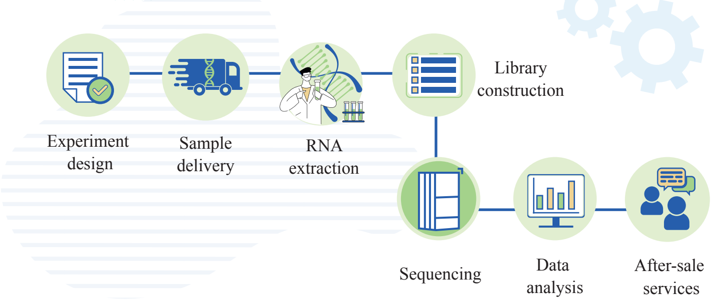


snoRNA and repeated ← sRNA classification → rRNA,tRNA and snRNA

↓

miRNA analysis

Service Workflow



Experiment design

Sample delivery

RNA extraction

Library construction

Sequencing

Data analysis

After-sale services

Bioinformatics

- Small RNA identification, classification, and annotation (miRBASE, RepBASE, Rfam, SILVA, GtRNAdb, etc.);
- miRNA base preference and base editing;
- miRNA quantification and differential expression analysis;
- miRNA targeted genes prediction;
- Functional annotation and enrichment on DE-miRNA targeted genes.

Service Advantages

- Extensive experience in sRNA sequencing with hundreds of closed projects covering 100+ species.
- Strict quality control system monitoring the entire project process.
- Comprehensive bioinformatics analysis on small RNA expression as well as targeted molecule prediction.
- Joint analysis available for miRNA+mRNA; miRNA+lncRNA; miRNA+circRNA+lncRNA, etc.
- **After-sale services:** After-sale services are valid for 3 months upon project completion, including project follow-up, trouble-shooting, results Q&A, etc.

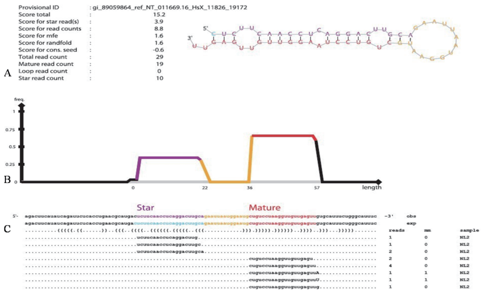
Service Specifications

Library	Read Length	Recommended Data	Data Quality
sRNA	SE50	10 M/20 M reads	Q30 ≥ 85%

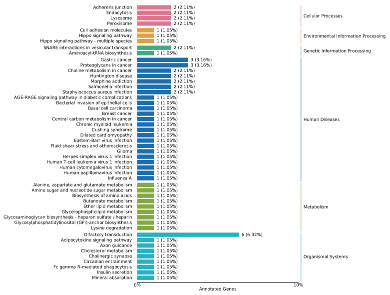
Sample Requirements

Amount	Purity	Integrity
Conc. ≥ 80 ng/μL; Volume ≥ 10 μL; Total ≥ 0.5 μg	OD260/280=1.7-2.5 OD260/230=0.5-2.5 Limited or no protein or DNA contamination shown on gel.	For plants: RIN ≥ 6.5; For animals: RIN ≥ 6.5; 5.0 ≥ 28S/18S ≥ 1.0; limited or no baseline elevation

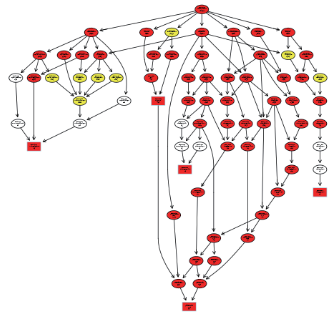
Demo Results



1.Candidate precursor of novel miRNAs predicted by miRDeep2



2. KEGG enrichment on DE-miRNA targeted genes



3. GO enrichment on DE-miRNA targeted genes

Featured Publications

Year	Journal	Article	Applications	DOI
2023	EMBO Reports	The plant FYVE domain-containing protein FREE1 associates with microprocessor components to repress miRNA biogenesis	Developmental regulation	10.15252/embr.202255037
2023	Plant Physiology and Biochemistry	Viral infections inhibit saponin biosynthesis and photosynthesis in Panax notoginseng	Disease treatment	10.1016/j.plaphy.2023.108038
2022	International Journal of Molecular Sciences	The microRNA ame-Bantam-3p controls larval pupal development by targeting the multiple epidermal growth factor-like domains 8 gene (megf8) in the honeybee, apis mellifera	Developmental regulation	10.3390/ijms24065726

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