

# DNBSEQ™ SERVICE OVERVIEW

## Long Non-coding RNA Sequencing



### Service Description

Long non-coding RNAs (lncRNAs) are a large class of transcribed RNA molecules with a length of more than 200 nucleotides that do not encode proteins. lncRNAs are thought to encompass nearly 30,000 different transcripts in humans, hence lncRNA transcripts account for the major part of the non-coding transcriptome.

lncRNA discovery is still at an early stage and only a small proportion of lncRNAs have so far been investigated. Although we can start to classify different types of lncRNA functions, we are still far from being able to predict the function of new lncRNAs.

### Sequencing Service Description

BGI offers expression profiling as one way to uncover the function of lncRNA. Identifying lncRNAs that are differentially expressed during development or in particular situations can shed light on their potential functions. Alternatively, looking for lncRNAs and protein-coding genes whose expression is correlated, can indicate co-regulation or related functions.

### Sequencing Service Specification

DNBSEQ™ Long non-coding RNA Sequencing services are executed with the DNBSEQ™ Technology Platform, with the benefit of lower cost and faster turnaround time.



- Paired-end 100 bp
- Strand specific library with rRNA removal
- Data and bioinformatics analysis are available in standard file formats
- Advanced RNA data visualization and data mining with Dr.Tom system



#### Sequencing Quality Standard

- Guaranteed  $\geq 80\%$  of bases with quality score of  $\geq Q30$

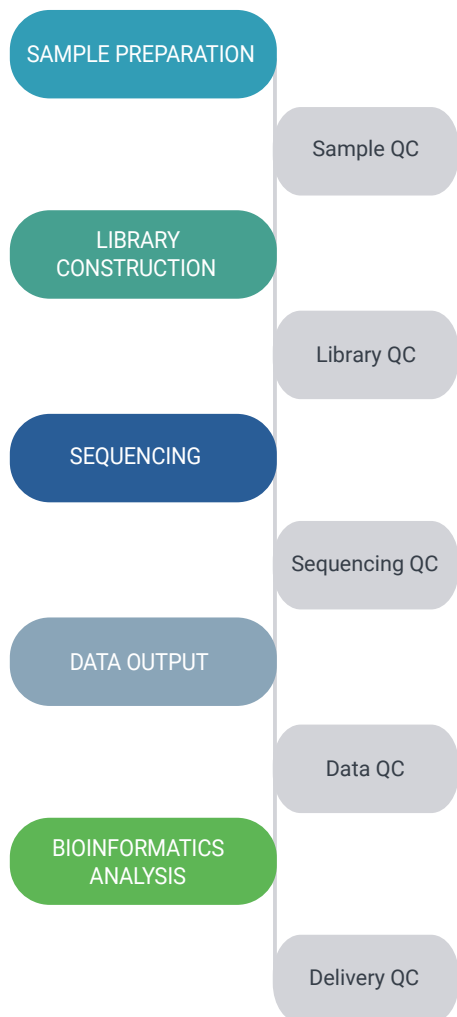
#### Turnaround Time



- Typical 27 working days from sample QC acceptance to filtered data availability
- Expedited services are available, contact your local BGI specialist for details

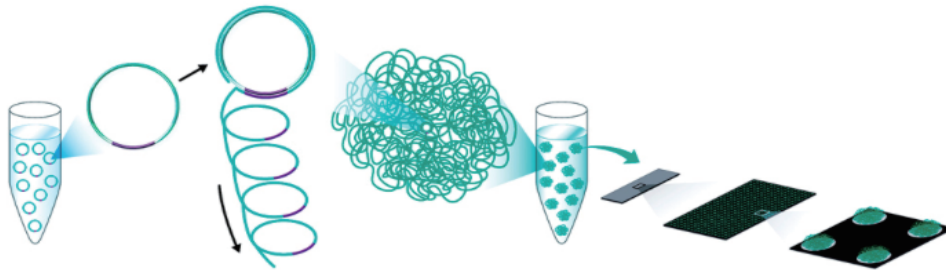
### Project Workflow

We care for your project from the receipt of samples through to the reporting of results. Highly experienced laboratory professionals follow strict quality procedures to ensure the integrity of your results.



## DNBSEQ™ Sequencing Technology

DNBSEQ™ is an innovative high-throughput sequencing solution, developed by BGI's Complete Genomics subsidiary in Silicon Valley. The system is powered by combinatorial Probe-Anchor Synthesis (cPAS), linear isothermal Rolling-Circle Replication and DNA Nanoballs (DNB™) technology, followed by high-resolution digital imaging.



The combination of linear amplification and DNB technology reduces the error rate while enhancing the signal. The size of the DNB is controlled in such a way that only one DNB is bound per active site on the flow cell. This densely patterned array technology provides optimal sequencing accuracy and increases flow cell utilization.

## Data Analysis

In addition to data output, BGI offers a range of standard and customized bioinformatics pipelines for your Long non-coding RNA sequencing project. Reports and output data files are delivered in industry standard file formats: FASTQ, BAM and Excel.

### STANDARD ANALYSIS

- Identification of mRNA and LncRNA
- Quantification and differential expression analysis
- Gene ontology analysis and pathway enrichment analysis

### DR.TOM SYSTEM ANALYSIS

- Transcription factor prediction (For AnimalTFDB/PlantTFDB)
- GSEA Analysis
- Rfam、 Pfam、 Reactome、 COG、 EggNOG and InterPro annotation
- miRNA-mRNA interaction, lncRNA-mRNA interaction analysis
- Protein-Protein Interaction (PPI) analysis
- Co-expression Interaction Network Analysis
- Custom dataset table upload

## Sample Requirements

We can process your total RNA, blood, cell line, FFPE, fresh frozen tissues samples from a variety of species, with the following general requirements.

Purity: OD260/280  $\geq$  2.0, OD260/230  $\geq$  2.0, without degradation and DNA contamination

Species	RNA Amount and Concentration	Quantitative Result
Human, mouse and rat	Total RNA $\geq$ 200ng	RIN $\geq$ 7.0
	Concentration $\geq$ 20ng/ $\mu$ l	28S/18S $\geq$ 1.0

## Request for Information or Quotation

Contact your BGI account representative for the most affordable rates in the industry and to discuss how we can meet your specific project requirements or for expert advice on experiment design, from sample to bioinformatics.

[info@bgi.com](mailto:info@bgi.com)

[www.bgi.com](http://www.bgi.com)

## BGI Offices

### BGI Americas

One Broadway, 3rd Floor  
Cambridge, MA 02142,  
USA

### BGI Europe

Ole Maaløes Vej 3,  
DK-2200 Copenhagen N,  
Denmark

### BGI Asia

Building NO.7, BGI Park,  
No.21 Hongan 3rd Street,  
Yantian District, Shenzhen

### BGI Australia

L6, CBCRC, 300 Herston  
Road, Herston, Brisbane,  
Queensland 4006, Australia

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We Sequence, You Discover