SIMBIOS

Saraswanti Microbiome Solutions

Platform : Next Generation Sequencing (NGS)

The microbiome is the community of microorganisms that can usually be found living together in a particular habitat. A small proportion of microorganisms are associated with disease or pathogenicity and most microorganisms are essential for the healthy functioning of ecosystems, and are known for their beneficial interactions with other microbes and other organisms. Hence, microbiome study can be applied to the fields of Health, Agriculture, Environment and Food Safety.

Saraswanti Genomics Institute offers SIMBIOS – **a Shotgun Metagenomics** - based service using NGS platform to bring knowledge in the field of microbiomes. Shotgun Metagenomics is a method by extracting all the DNA from raw samples, fragmenting it, then reading the sequence with the NGS.

Both cultured and uncultured microorganism can be identified.

Shotgun metagenomics methods can provide :

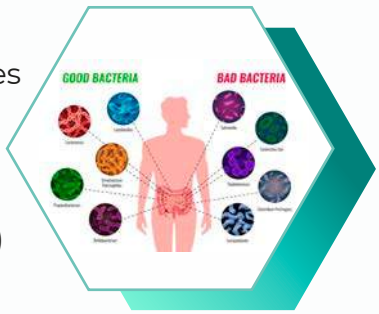
- Comprehensive analysis results, not only bacteria, but also fungi, protists, archaea and virus.
- Enabling identification at the species level and reveal their capabilities.
- Providing an overview of the existence of microbial communities in an environment and their association with other microbes or higher organisms in human, animal and plant health

Some of SIMBIOS Applications:

Agriculture
- Soil microbiome
- Biofertilizer studies
- Plant pathogen identification

Environment Studies
- Aquaculture microbiome studies
- Environmental testing
- Water safety

Animal Health
- AMR (Anti Microbial Resistance) surveillance
- Animal food and health studies
- Pathogen identification



Food Safety and Nutrition
- Pathogen detection
- Potential microbiome for food
- Probiotics analysis

Clinical
- Gut, oral, skin microbiome
- Disease prevention and Surveillance
- AMR analysis

Healthcare/Hospital Associated Infections (HAIs)
- Nasocomial infection

Our Services :

Sample Preparation

- Perform DNA extraction according to the sample type.
- DNA Quality Control.

Next Generation Sequencing

- With MGI Technology – DNBSEQ you will get sequencing data Q30 >90%

Bioinformatic Analysis

Sample Requirements:

Raw materials

Sample Type	Minimum requirement
Fresh Cell Culture	≥ 5 x 10^7 cells
Fresh Animal Tissue	≥ 5 g
Fresh Plant Tissue	≥ 5 g
Whole blood	≥ 3 ml
Buffy coat	≥ 500 µl
Stool	≥ 5 g
Soil	≥ 5 g
Food	≥ 5 g
Water (River, sewage, etc)	≥ 800 ml

for more types of samples, please contact us.

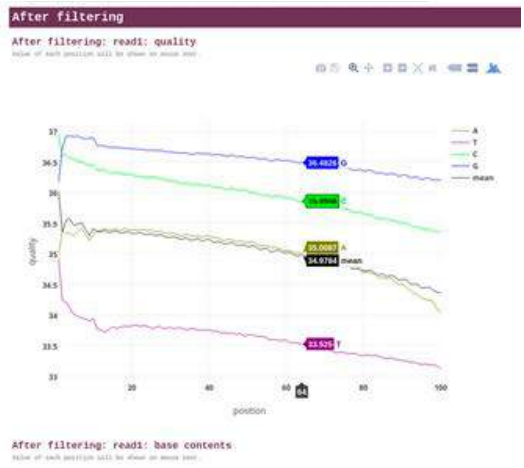
Mass	Concentration	Integrity	Sample Purify
≥ 1 µg	≥ 12,5ng/µl	The band shown on gel electrophoresis has little degradation, or of fragment size greater then 20kb	No contamination with RNA, protein or salt ions; colorless and transparent; non-sticky. *) Ensure purify of the sample

What will you get :

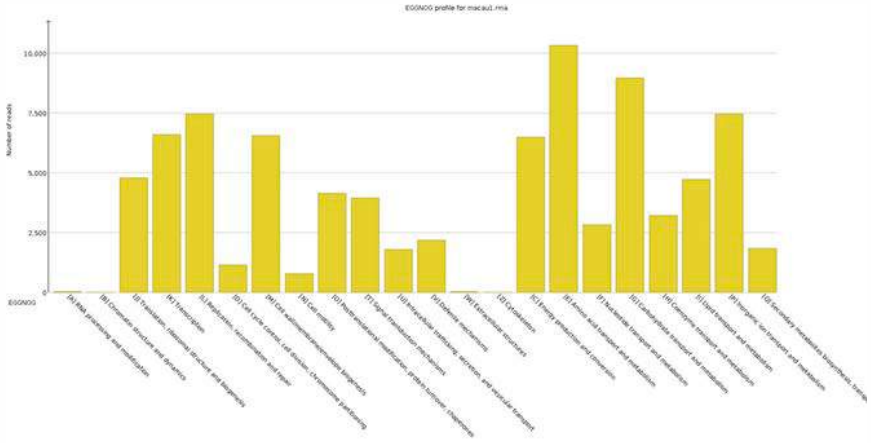
Without Data Analysis
Raw data sequencing (fastq files)

With Data Analysis
- Raw data sequencing (fastq files)
- Bioinformatic standard analysis :
  - Sequencing QC, Filtering and Host filtering (optional)
  - Taxonomy analysis
- Additional based on request
  - Functional Analysis
  - AMR and virulence factor Analysis
  - Metagenome-assembled genomes
- And more, based on request

High contiguity of raw reads



Consistent Q Score >30, deliver the best result of reads for every applications



Comprehensive Functional Gene Analysis from Shotgun Sequencing data