The 40th Global and Local Infectious Diseases Research Seminar

RCGLID
OITA UNIVERSITY

December 18th , 2025
16:00-17:00

FREE
REGISTRATION ▶
https://forms.gle/rSiM85KEJSuJxz648

Presenter : Kirill Kryukov[1,2], Rumiko Suzuki[2]
1) Research Organization of Information and Systems
2) National Institute of Genetics

Venue: OITA Univ. RCGLID Meeting Room & Teams
This seminar will be held in English.

Genome databases for metagenome analysis

Shotgun metagenomics is a powerful tool for probing the content of environmental, industrial and clinical samples. This approach typically classifies the anonymous sequences from the sample by comparing them with a database of known sequences. The quality and richness of reference database is crucial for obtaining accurate results. In this seminar we provide an overiew the tools and databases commonly used for metagenome analysis. We discuss comparative strength and weaknesses of various approaches, and provide practical recommendations.

We introduce our database GenomeSync and our software system called Genome Search Toolkit (GSTK). Currently GenomeSync stores more than 21 Tbp of genomic sequence data, and makes it convenient to download and use this data. Since GenomeSync stores both prokaryote and eukaryote genones, it can be applied to analyse the entire content of metagenomes. We discuss practical considerations of using this system for metagenomics and comparative genomics applications.

We then discuss the applications of our system and other methods for metagenome analysis projects. We share experience and results from analysing urban metabenomes, gastric metagenomes, and metagenomes stored in public databases.