BRIC a DBT Organization | IBSD Promoting Bioresources

DEPARTMENT OF BIOTECHNOLOGY
MINISTRY OF SCIENCE & TECHNOLOGY , GOVERNMENT OF INDIA
सत्यमेव जयते

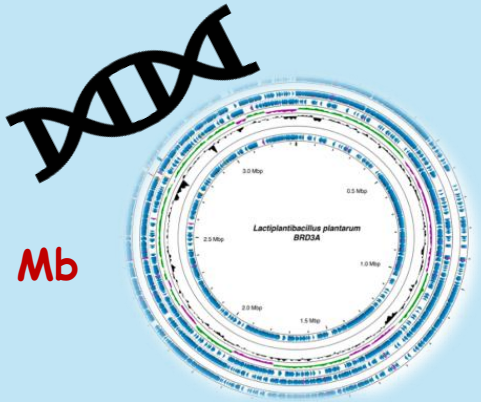
#One day One Genome initiatives

Lactiplantibacillus plantarum BRD3A:
Microbe from fermented rice beverage from Manipur, India

Isolation from Traditional rice based fermented beverage

Lactiplantibacillus plantarum BRD3A
NCBI Accession no. JAVHTS000000000

Genome size: 3.3 Mb



Importance:
- Probiotic
- Antimicrobial potential

Genomic studies
❖presence probiotic related genes revealed probiotic properties
❖Biosynthetic gene cluster antimicrobial peptide bacteriocin and secondary metabolites as antimicrobial potential

AMR

Development of novel therapeutics for health benefits

Lactiplantibacillus plantarum (BRD3A) **Genome Accession Number:** GCF_031085385.1

Quality of Genome Assembly and Annotation:
Results from indigenously developed **BHARAT** analysis pipeline:
(**B**acterial **H**ybrid genome **A**ssembly and **R**apid **A**nnotation **T**oolset)

Table 1: Assembly Details	
Contigs	13
GC Content	44.31
Contig L50	1
Genome length	3,329,893 bp
Contig N50	1,693,990

Table 2: Annotated Genome Features	
CDS	3,339
tRNA	67
rRNA	5
Repeat Regions	7

Subsystem Analysis

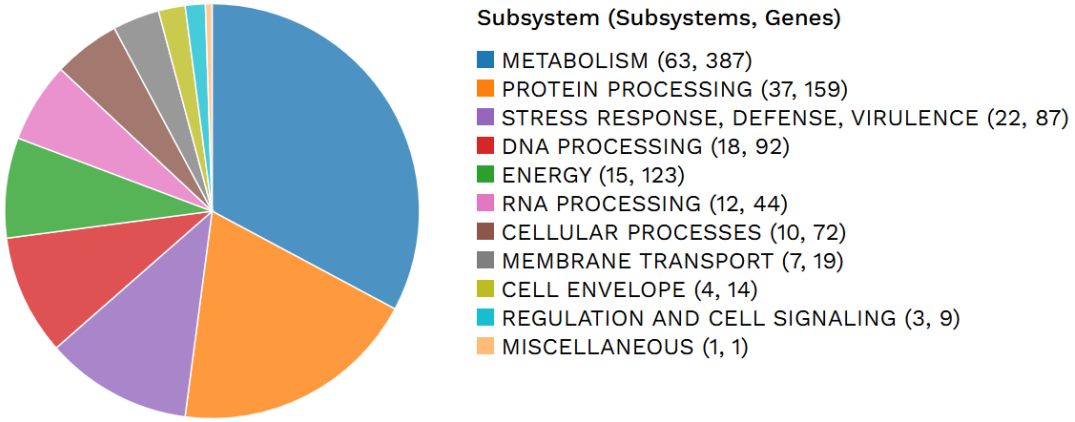


Table 3: Antimicrobial Resistance Genes	
AMR Mechanism	**Genes**
Antibiotic inactivation enzyme	
Antibiotic target in susceptible species	Alr, Ddl, EF-G, EF-Tu, folA, Dfr, folP, gyrA, gyrB, inhA, fabI, Iso-tRNA, kasA, MurA, rho, rpoB, rpoC, S10p, S12p
Antibiotic target replacement protein	FabK
Antibiotic target modifying protein	RlmA(II)
Gene conferring resistance via absence	gidB
Protein altering cell wall charge conferring antibiotic resistance	GdpD, MprF, PgsA

Genome Assembly