



Government of India
Ministry of Science & Technology
Department of Biotechnology

BRIC
a DST Impulsion
NIBMG
under Department of Science and
Technology, Government of India
National Institute of
Biomedical Genomics

ONE DAY ONE GENOME

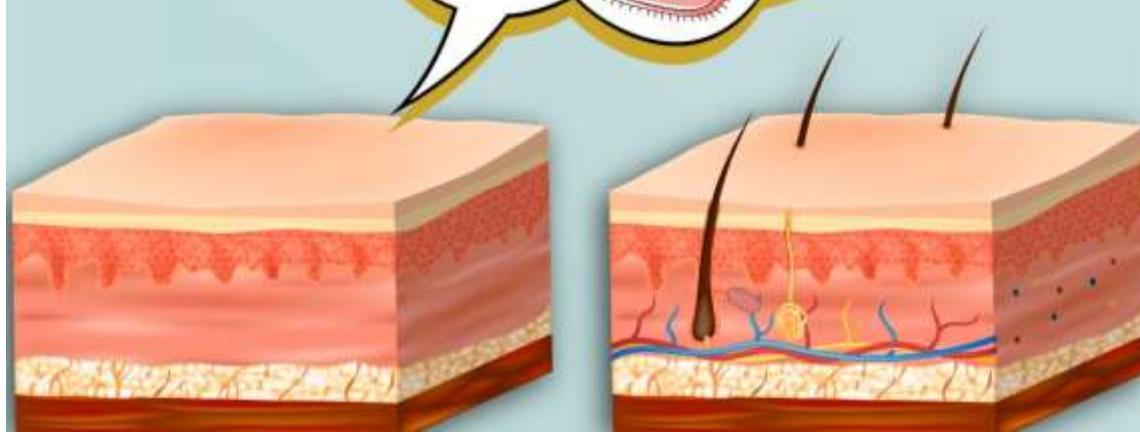
SHOWCASING INDIA'S MICROBIAL DIVERSITY

BACILLUS VELEZENSIS



Isolated from human skin

Inhibits growth of
biofilm-forming bacteria

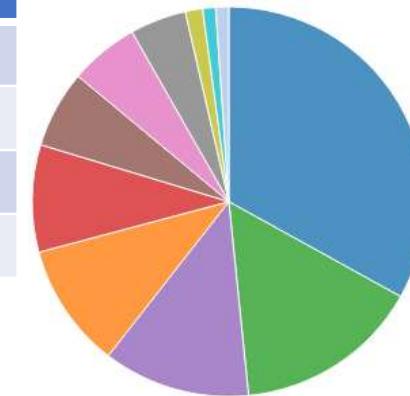


Quality of Genome Assembly and Annotation:Results from indigenously developed **BHARAT** analysis pipeline: (**Bacterial Hybrid genome Assembly and Rapid Annotation Toolset**)**Table 1: Assembly Details**

Contigs	34
GC Content	46.15
Contig L50	4
Genome length	4,059,355 bp
Contig N50	311,490

Table 2: Annotated Genome Features

CDS	4,214
tRNA	79
Repeat Regions	0
rRNA	3

**Subsystem Analysis**

Subsystem (Subsystems, Genes)
METABOLISM (93, 732)
PROTEIN PROCESSING (43, 221)
STRESS RESPONSE, DEFENSE, VIRULENCE (34, 131)
CELLULAR PROCESSES (29, 236)
ENERGY (25, 215)
DNA PROCESSING (18, 92)
MEMBRANE TRANSPORT (16, 76)
RNA PROCESSING (13, 52)
CELL ENVELOPE (4, 15)
MISCELLANEOUS (3, 10)
REGULATION AND CELL SIGNALING (3, 10)

Table 3: Antimicrobial Resistance Genes

AMR Mechanism	Genes
Antibiotic inactivation enzyme	ANT(6)-I, BclI family, FosB
Antibiotic target modifying enzyme	Cfr, RlmA(II)
Antibiotic target in susceptible species	Alr, Ddl, dxr, EF-G, EF-Tu, folA, Dfr, folP, gyrA, gyrB, inhA, fabI, Iso-tRNA, kasA, MurA, rho, rpoB, rpoC, S10p, S12p
Protein altering cell wall charge conferring antibiotic resistance	GdpD, MprF, PgsA
Efflux pump conferring antibiotic resistance	BceA, BceB, EbrA, EbrB, Lmr(B), Tet(L), YkkCD
Regulator modulating expression of antibiotic resistance genes	BceR, BceS, LiaF, LiaR, LiaS

Genome Assembly